STRATEGIES, TECHNIQUES, APPLICATIONS AND RESOURCES

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PREFACE

The world is facing unprecedented environmental challenges that are affecting the quality of life of people, ecosystems and economies. The complexity and interdependence of myriad issues require a multidisciplinary approach that brings together expertise from different fields of knowledge (engineering, technology, sciences, arts, humanities, commerce and management). This edited book aims to contribute to this effort by bringing together a collection of articles that explore strategies, techniques, applications and resources from different perspectives.

Strategies are essential because they provide structure, direction, and purpose to endeavors, increasing the likelihood of success and enabling efficient and effective use of resources. They are crucial for adapting to changing circumstances and maintaining a competitive advantage in various contexts.

Techniques are valuable tools that provide structured and efficient ways to perform tasks, solve problems, and achieve goals across diverse fields. They contribute to productivity, quality improvement, and innovation, while also promoting consistency, reliability, and informed decision-making. Their significance extends to both individual skill development and the success of organizations and industries as a whole.

Applications have become integral to modern life, transforming the way we work, communicate, learn, and entertain ourselves. Their significance extends to various domains, bringing convenience, efficiency, and innovation to individuals, businesses, and society as a whole.

Resources are crucial for sustenance, economic growth, technological progress, and societal well-being. They impact various aspects of human life and are essential for building and maintaining prosperous and thriving societies. Responsible management and utilization of resources are key to ensuring their long-term significance and availability for future generations.

Overall, this edited book offers a comprehensive and interdisciplinary overview of strategies, techniques, applications and resources. The articles presented here provide a rich source of information and ideas for researchers, students, practitioners, and policymakers interested in sustainability, transformation, growth and excellence. We hope that this book will inspire further research, discussion, and action towards a more progressive future for all.

- Dr. Arceloni Neusa Volpato
- Dr. B. Balaji
- Dr. S. Karthikeyan
- Dr. Divya R. Panjwani
- **Editors**

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FOREWORD

The edited book **"Strategies, Techniques, Applications and Resources"** is a timely and much-needed contribution to the field. The editors of this book, **Dr. Arceloni Neusa Volpato, Dr. B. Balaji, Dr. S. Karthikeyan, and Dr. Divya R. Panjwani** have put together an outstanding collection of articles that explore the various aspects. The book covers a wide range of topics, emphasising strategies, techniques, applications and resources.

One of the unique features of this book is its multidisciplinary approach. The editors have brought together a diverse group of authors from different fields such as engineering, technology, sciences, arts, humanities, commerce and management. This interdisciplinary approach helps to provide a comprehensive understanding of the complex issues. The authors have presented their research and case studies in a clear and concise manner, making it accessible to a wide range of readers, from students to policymakers.

The edited book "Strategies, Techniques, Applications and Resources" is a valuable contribution. It brings together the latest research and practical solutions to some of the most pressing issues of our time. I commend the editors and authors for their efforts and hope that this book will inspire further research and action towards a progressive future.

- Prof. Dr. Suresh Paul Antony
Indian Institute of Management, Tiruchirappalli

INTRODUCTION

This edited book, titled **"Strategies, Techniques, Applications and Resources"**, is a compilation of research studies and cases that focus on various aspects in multiple domains of engineering, technology, sciences, arts, humanities, commerce and management.

Strategies are crucial tools that individuals, businesses, organizations, and even nations use to achieve specific objectives or goals efficiently and effectively. Their significance lies in the following aspects:

a) Goal Achievement: Strategies help clarify objectives and provide a roadmap to achieve them. They outline the steps and actions needed to reach the desired outcomes, ensuring a focused and purposeful approach.

b) Resource Optimization: By providing a clear plan of action, strategies enable the optimal allocation of resources, including time, money, and manpower. This prevents wastage and ensures resources are used wisely to yield the best possible results.

c) Competitive Advantage: In business and other competitive environments, strategies help create a competitive edge. They allow organizations to differentiate themselves from competitors, exploit opportunities, and mitigate risks, leading to sustained success.

d) Risk Management: Strategies are essential for identifying potential risks and challenges, and they provide contingency plans to overcome them. By being prepared for various scenarios, organizations can minimize negative impacts and maintain stability.

e) Long-term Vision: Strategies are typically designed with a long-term perspective. They help organizations move beyond short-term thinking and foster a sustainable approach to decision-making.

f) Adaptability: Despite careful planning, circumstances can change. Effective strategies are designed with flexibility in mind, allowing for adjustments and adaptations as needed in response to new information or shifts in the environment.

g) Alignment and Coordination: In larger organizations or multi-stakeholder projects, strategies ensure that everyone is working

toward the same objectives. They promote alignment, coordination, and collaboration among different teams or departments.

h) Decision-making Framework: Strategies serve as a framework for decision-making, guiding choices and ensuring they are in line with the overall mission and goals of the entity.

i) Measurement and Evaluation: Strategies often include metrics and milestones, which facilitate monitoring and evaluation of progress. This helps in determining whether the strategy is effective or needs refinement.

j) Confidence and Focus: Having a well-defined strategy gives individuals and organizations a sense of purpose, confidence, and direction. It reduces uncertainty and allows them to concentrate their efforts on the most critical areas.

Techniques play a crucial role in various fields and endeavors, providing specific methods or approaches to accomplish tasks, solve problems, or achieve objectives. Their significance lies in the following aspects:

a) Task Accomplishment: Techniques offer systematic and proven ways to perform specific tasks or operations efficiently. They provide step-by-step guidelines that enable individuals to complete complex activities with precision and effectiveness.

b) Problem Solving: Techniques are essential problem-solving tools. They provide structured approaches to analyze issues, identify root causes, and devise appropriate solutions.

c) Efficiency and Productivity: By streamlining processes and providing best practices, techniques enhance efficiency and productivity. They help individuals and organizations achieve more in less time and with fewer resources.

d) Quality Improvement: Techniques often focus on quality enhancement. They offer ways to standardize processes, reduce errors, and improve overall outcomes, leading to better products or services.

e) Innovation and Creativity: Techniques can also be employed to foster innovation and creativity. They may provide frameworks or methods to brainstorm ideas, explore new possibilities, and develop novel solutions.

f) Reproducibility: In scientific research and other empirical studies, techniques ensure that experiments or investigations can be replicated by others, adding credibility and reliability to the findings.

g) Decision Making: Techniques provide structured approaches to decision-making, helping individuals and organizations make well-informed choices based on data, analysis, and evaluation.

h) Learning and Skill Development: Techniques are instrumental in teaching and skill development. They offer practical ways to acquire new knowledge or abilities, enabling individuals to enhance their expertise.

i) Risk Reduction: Some techniques are designed to minimize risks in various domains, such as project management, financial planning, or safety procedures. They provide safeguards and precautionary measures to prevent potential hazards.

j) Consistency and Standardization: Techniques promote consistency and standardization, ensuring that processes and outcomes meet specific criteria or conform to industry standards.

k) Adaptability: Techniques can be adapted and applied to different situations, making them versatile tools that can be modified to suit varying contexts or challenges.

l) Progress Measurement: Techniques often include quantifiable measures or indicators, facilitating progress tracking and performance evaluation.

The significance of applications, particularly in the context of technology and software development, is immense and encompasses a wide range of areas. Here are some key aspects highlighting their importance:

a) Problem Solving: Applications are designed to address specific problems or fulfill particular needs. They provide practical solutions that simplify complex tasks, automate processes, and make everyday activities more efficient.

b) Convenience and Accessibility: Applications enhance convenience and accessibility by providing user-friendly interfaces and functionalities. They enable users to access services, information, and resources from various devices, anytime and anywhere.

c) Productivity and Efficiency: Business applications streamline workflows, optimize operations, and boost productivity. They allow organizations to manage tasks, data, and communication more effectively, leading to improved efficiency and output.

d) Innovation and Progress: Applications often incorporate innovative technologies and ideas, driving progress in different industries. They open up new possibilities and contribute to advancements in fields like healthcare, education, finance, and more.

e) User Experience: A well-designed application enhances the overall user experience. Intuitive interfaces, seamless navigation, and responsive features create a positive impression and encourage user engagement.

f) Market Competitiveness: For businesses, having unique and functional applications can provide a competitive edge. It allows companies to differentiate themselves from competitors, attract more customers, and retain existing ones.

g) Data Analysis and Insights: Applications equipped with data analytics capabilities can collect, process, and present valuable insights. This data-driven decision-making enables businesses to make informed choices and adapt to changing market trends.

h) Connectivity and Collaboration: Applications facilitate communication and collaboration among individuals and teams, regardless of geographical barriers. They enable real-time interactions, fostering cooperation and teamwork.

i) Learning and Skill Development: Educational applications offer interactive learning experiences, enabling users to acquire new skills and knowledge at their own pace. They promote continuous learning and professional development.

j) Personalization: Many applications offer personalized experiences based on user preferences and behavior. This tailored approach enhances engagement and satisfaction.

k) Social Impact: Applications have the potential to address social issues and create positive change. They can be used for charitable purposes, raising awareness, and promoting social causes.

l) Economic Growth: The development and widespread use of applications contribute to economic growth and job creation. The app economy has become a significant sector in many countries, generating employment opportunities and driving economic activity.

m) Entertainment and Recreation: Applications provide entertainment options, such as gaming, streaming services, and social media platforms. They offer relaxation, amusement, and opportunities for social interaction.

Resources are essential components that are valuable and useful in various contexts. Their significance lies in their fundamental role in supporting and sustaining life, economies, and civilizations. Here are some key aspects highlighting the importance of resources:

a) Human Survival: Natural resources, such as water, air, food, and shelter, are fundamental for human survival. They meet the basic needs of individuals and communities, ensuring their well-being and existence.

b) Economic Development: Resources are critical drivers of economic development. Natural resources like minerals, oil, and gas fuel industries and provide raw materials for manufacturing processes. Human resources, such as skilled labor, also contribute to economic growth and innovation.

c) Industrial Production: Resources serve as inputs for industrial production. Whether it's natural resources, like metals and agricultural products, or human resources with specific expertise, they form the backbone of manufacturing and service industries.

d) Infrastructure and Construction: Resources are vital for building infrastructure, such as roads, bridges, buildings, and utilities. Construction materials like cement, steel, and timber are necessary for urban development and improving living standards.

e) Energy Generation: Natural resources like fossil fuels, wind, solar, and hydro power are essential for energy generation. They drive electricity production and power various sectors of the economy.

f) Environmental Balance: Maintaining a balance in the use of resources is crucial for environmental sustainability. Responsible management of resources helps preserve ecosystems, biodiversity, and natural habitats.

g) Technological Advancement: Access to resources spurs technological advancement. By providing materials and knowledge, resources enable the development of innovative technologies that improve lives and societies.

h) Wealth Creation: Resource-rich regions and nations often experience economic prosperity and wealth creation. Exporting valuable resources can drive revenue and contribute to a country's gross domestic product (GDP).

i) Social Services and Welfare: Financial resources play a significant role in providing social services and welfare programs. Governments allocate resources to education, healthcare, social security, and other essential services.

j) Research and Development: Resource availability supports research and development efforts. Financial resources fund scientific studies, technological innovations, and medical advancements.

k) Global Trade and Cooperation: Resources foster international trade and cooperation. Countries with abundant resources can export them to countries with a demand for those resources, promoting economic interdependence and cooperation.

l) Cultural and Artistic Expression: Resources also play a role in cultural and artistic expression. Artists, musicians, and writers often rely on resources to create their work and share it with the world.

- Dr. Arceloni Neusa Volpato

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CONTENTS

Coping Mechanisms and Adaptation Strategies of Entrepreneurs in Economic Uncertainty

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Abstract

The study explores the coping mechanisms and adaptation strategies employed by entrepreneurs in times of economic uncertainty. Using a descriptive research design, data was collected through a structured questionnaire from a sample of 200 entrepreneurs representing diverse sectors and business sizes. The study aims to provide insights into the coping mechanisms, adaptation strategies, and emotional responses of entrepreneurs in the context of economic uncertainty within Madurai district. The study commenced with an analysis of the demography of entrepreneurs, revealing key characteristics such as age, gender, education level, and industry representation. Subsequently, the coping mechanisms and adaptation strategies employed by entrepreneurs during periods of economic uncertainty. Factor analysis was used to identify underlying dimensions within the coping strategies. Furthermore, the study used Garrett ranking to measure the emotional responses of entrepreneurs to economic uncertainty. The findings provide valuable insights into how entrepreneurs navigate economic uncertainty, offering practical implications for fostering a resilient entrepreneurial ecosystem.

Key Words: Coping Mechanism, Adaptation Strategies, Economic Uncertainty, Entrepreneurs, Strategic Partnerships, Emotional Resilience.

1. Introduction

In a world of constant economic fluctuations and unpredictable market dynamics, entrepreneurs find themselves navigating a challenging landscape where uncertainty becomes the norm rather than the exception. Economic uncertainty arises from various factors, such as global events, market volatility, political instability, and technological disruptions. In the face of such uncertainty, the ability of entrepreneurs to cope and adapt becomes crucial for their survival and success. The coping mechanisms and adaptation strategies of entrepreneurs in economic uncertainty have become subjects of significant interest among policymakers, and business communities alike. Understanding how entrepreneurs respond to uncertain conditions can provide valuable insights into their decision-making processes, risk management techniques, and overall resilience. The diverse coping mechanisms and adaptation strategies employed by entrepreneurs to withstand the challenges posed by economic uncertainty. These strategies encompass a wide range of approaches, including financial management, innovation, strategic partnerships, diversification, and emotional resilience (Elitcha and Fonseca, 2018).

Entrepreneur's response to economic uncertainty is unique, shaped by their personality, experience, and the specific context in which they operate. The significance of this study lies in its potential to shed light on best practices and lessons learned from successful entrepreneurs who have thrived amidst turbulent economic environments. Furthermore, understanding how entrepreneurs cope with uncertainty can help inform policy measures aimed at supporting and fostering a robust entrepreneurial ecosystem, particularly during times of economic instability. The study seeks to provide a comprehensive analysis of the coping mechanisms and adaptation strategies that empower entrepreneurs to embrace uncertainty as an opportunity rather than a hindrance (Laskovaia et al., 2018). Gaining deeper insights into their innovative approaches, we can better equip aspiring entrepreneurs and the business community at large to navigate and flourish in the ever-changing economic landscape.

2. Need for the Study

In today's dynamic and interconnected global economy, entrepreneurs face an unprecedented level of economic uncertainty that is often characterized by unpredictable market conditions, fluctuating consumer demand, geopolitical tensions, and disruptive technological advancements. This uncertainty presents significant challenges to entrepreneurs seeking to establish and sustain successful ventures. While some entrepreneurs manage to thrive amidst economic turbulence, others struggle to cope with the pressures and uncertainties, leading to business failures and financial setbacks. Furthermore, as the global business landscape becomes increasingly interconnected and reliant on rapid technological advancements, the frequency and intensity of economic uncertainty are likely to intensify. This elevates the urgency of understanding how entrepreneurs adapt and cope during such times, as their ability to effectively navigate economic uncertainty not only impacts their individual businesses but also contributes to overall economic resilience and job creation. Addressing the gaps in knowledge surrounding coping mechanisms and adaptation strategies of entrepreneurs in economic uncertainty, this study aims to provide evidence-based insights that can empower entrepreneurs, policymakers, and stakeholders to make

informed decisions and implement targeted interventions to foster a thriving entrepreneurial ecosystem even amidst turbulent economic conditions.

Understanding the coping mechanisms and adaptation strategies of entrepreneurs in times of economic uncertainty is crucial for several reasons. The study can provide valuable knowledge to aspiring entrepreneurs and current business owners alike, equipping them with practical approaches to navigate the complexities of a rapidly changing economic landscape. Examination of the coping mechanisms and adaptation strategies of successful entrepreneurs can lead to the identification of best practices that can be disseminated across industries and geographies. Sharing these lessons learned, the broader entrepreneurial community can benefit, leading to a more robust and innovative business ecosystem (Newman et al., 2022). The study helps to understand the role of innovation, risk management, and strategic decision-making in an entrepreneur's ability to thrive during economic uncertainty. Such insights are valuable not only for entrepreneurs but also for investors, stakeholders, and researchers seeking to better understand the factors influencing entrepreneurial success and longevity. The study of coping mechanisms and adaptation strategies of entrepreneurs in economic uncertainty is of paramount importance in a world characterized by constant change and volatility. Exploring and understanding how entrepreneurs navigate these challenges, the study can promote a more resilient and prosperous entrepreneurial community, thereby contributing to economic growth and stability on a broader scale.

3. Review of Literature

The coping mechanisms and adaptation strategies of entrepreneurs in times of economic uncertainty have garnered significant attention in the academic and business communities. The importance of financial management for entrepreneurial success (Fisher et al., 2020). The budgeting, cash flow management, and debt management in enhancing financial resilience during economic downturns (Sergent et al., 2020). The significance of financial forecasting and cost management in ensuring sustainable business operations in uncertain environments. The significance of innovation as a coping mechanism for entrepreneurs is well-documented (Godwin et al., 2016). The positive impact of research and development, idea generation, and market research on entrepreneurial performance, particularly during economic volatility (Zou et al., 2016). The importance of embracing technological advancements and fostering a culture of innovation to stay competitive in uncertain markets (Zahra, 2021). Role of strategic partnerships in adaptation strategies of entrepreneurs reveal valuable insights. Benefits of joint ventures and collaborations in accessing new markets and resources, thus increasing resilience during economic fluctuations (Lee et al., 2023). The strategic alliances in leveraging complementary strengths and diversifying business opportunities (Perez-Lopez et al., 2019).

Product and market diversification in reducing business risk and achieving sustainable growth during economic uncertainties. Emotional intelligence in decision-making and stress management among entrepreneurs during challenging times (Lima et al., 2020). Impact of self-confidence and determination in fostering emotional resilience and driving entrepreneurial success in dynamic markets (Quintillan and Pena-Legazkue, 2019). Coping strategies adopted by entrepreneurs in emerging economies, highlighting the role of government policies and institutional support in enhancing entrepreneurial resilience (Chadwick and Raver, 2020). Coping mechanisms of entrepreneurs in the technology sector, emphasizing the significance of agile business models and digital transformation in responding to economic uncertainties (Adomako, 2021). Cultural influences on emotional resilience and coping behaviors, revealing how societal norms and values impact entrepreneurial decision-making in times of economic turmoil. It emphasizes the need for context-specific and culturally sensitive approaches to support and empower entrepreneurs facing diverse challenges (Lin et al., 2018). The integration of such insights into the formulation of policies and support programs can contribute to the creation of a conducive environment for entrepreneurship, fostering innovation, and promoting economic growth even in the most uncertain of times (Caliendo et al., 2020).

4. Research Gap

Despite existing research on coping mechanisms and adaptation strategies of entrepreneurs in economic uncertainty, several gaps remain. Studies have often explored individual strategies in isolation, leaving a need for a more integrated understanding of how financial management, innovation, and strategic partnerships collectively contribute to entrepreneurial resilience. Additionally, most research has focused on developed economies, overlooking the unique challenges faced by entrepreneurs in emerging markets. Furthermore, while some studies have examined emotional responses, more in-depth investigations into psychological factors influencing coping are required. Qualitative approaches and longitudinal studies could offer deeper insights into entrepreneurs' lived experiences and the dynamic nature of their responses to economic uncertainty. Bridging these gaps will provide a more comprehensive understanding, informing effective support mechanisms and policies to enhance entrepreneurial resilience.

5. Research Objectives

The study focusses on the following objectives.
1. To ascertain the demography of entrepreneurs in Madurai district.
2. To examine the coping mechanisms and adaptation strategies of entrepreneurs in economic uncertainty.
3. To investigate the emotional responses of entrepreneurs to economic uncertainty.

6. Research Methodology

The study employs a descriptive research design to investigate the coping mechanisms and adaptation strategies of entrepreneurs in the face of economic uncertainty. The target population comprises entrepreneurs from various industries and sectors operating in the Madurai district under consideration. A sample size of 200 entrepreneurs is selected using a purposive sampling technique, ensuring representation from both small and medium businesses, as well as diverse sectors. To gather data, a structured questionnaire is developed based on a comprehensive review of existing literature and expert consultations. The questionnaire will consist of both closed-ended and open-ended questions, designed to elicit information about the participants' coping mechanisms and adaptation strategies, and emotional responses to economic uncertainty. Upon data collection, simple percentage analysis is used to quantify the prevalence of demography of entrepreneurs. Factor analysis is applied to identify underlying factors or dimensions that categorize coping mechanisms and adaptation strategies. Additionally, Garrett ranking is used to prioritize the emotional responses to economic uncertainty of entrepreneurs. The results can offer practical implications for entrepreneurs, policymakers, and stakeholders to better support and foster a conducive environment for entrepreneurial growth and innovation in the face of economic uncertainty.

7. Results and Discussion

7.1. Demography of Entrepreneurs

The demography of entrepreneurs is portrayed in table 1.

Table 1: Demography

Demography	Variables	Number	Percentage
Gender	Male	151	75.5%
	Female	49	24.5%
Age	Below 25 years	31	15.5%
	25 – 40 years	95	47.5%
	Above 40 years	74	37.0%
Education	School level	78	39.0%
	Under graduate	92	46.0%
	Post graduate	30	15.0%
Income	Less than Rs.50,000	105	52.5%
	Rs.50,000-1,00,000	47	23.5%
	More than Rs.1,00,000	48	24.0%
Industry Representation	Manufacturing	102	51.0%
	Merchandize	66	33.0%
	Job work	32	16.0%
Tenure of Entrepreneurship	Less than 5 years	88	44.0%
	5 – 10 years	77	38.5%
	More than 10 years	35	17.5%

Table 1 presents the demographic characteristics of entrepreneurs, it indicates that 75.5% of the entrepreneurs are male, while 24.5% are female. Regarding age distribution, 15.5% of entrepreneurs are below 25 years, 47.5% fall within the age range of 25 to 40 years, and 37% are above 40 years. In terms of education, 39% have completed their school-level education, 46% have an undergraduate qualification, and 15% possess post-graduate degrees. The income distribution shows that 52.5% of entrepreneurs belong to the income group of less than Rs.50,000, 23.5% fall into the income group of Rs.50,000 to Rs.1,00,000, and 24% are in the income group of more than Rs.1,00,000. As for industry representation, 51% of entrepreneurs are involved in the manufacturing sector, 33% are engaged in merchandize activities, and 16% are operating job-work based businesses. With regards to their tenure in entrepreneurship, 44% of entrepreneurs have experience of below 5 years, 38.5% have been in business for 5 to 10 years, and 17.5% have more than 10 years of entrepreneurial experience.

7.2. Coping Mechanisms and Adaptation Strategies

The coping mechanisms and adaptation strategies of entrepreneurs are tested through factor analysis; the results are furnished in table 2.

Table – 2: Coping Mechanisms and Adaptation Strategies

Factors	Variables	Factor Loadings	Eigen Value	% of Variance
Financial Management	Budgeting	0.832	13.467	26.239
	Financial forecasting	0.821		
	Cost management	0.815		
	Cash flow management	0.812		
	Working capital management	0.798		
	Financial analysis	0.788		
	Debt management	0.815		
	Investment strategy	0.803		
	Risk management	0.762		
	Transparent tax filing	0.804		
Innovation	Research and development	0.826	10.659	17.248
	Idea generation	0.821		
	Market research	0.817		
	Prototype testing	0.802		
	Continuous improvement	0.796		
	Customer feedback	0.785		
	Cross-functional collaboration	0.794		
	Patent protection	0.787		
Strategic Partnerships	Market access	0.813	7.458	12.527
	Joint ventures	0.808		
	Technology sharing	0.784		
	Distribution channels	0.799		
	Branding development	0.764		
	Resource pooling	0.755		
Diversification	Product and market expansion	0.812	5.755	7.121
	Market segmentation	0.816		
	Vertical integration	0.778		
	Product differentiation	0.796		
	New business lines	0.775		
	E-commerce presence	0.766		
Emotional Resilience	Stress management	0.783	3.377	4.546
	Emotional intelligence	0.785		
	Self-awareness and resilience training	0.788		
	Flexibility and time management	0.785		
	Problem-solving abilities	0.803		
Situation Handling	Teamwork skills	0.767	2.416	3.238
	Self-confidence	0.755		
	Decision-making	0.789		

Table 2 presents the results of factor analysis, showcasing the coping mechanisms and adaptation strategies of entrepreneurs along with their factor loadings, Eigen value, and percentage of variance explained. To ensure content validity, all components with a content validity ratio of more than 0.5 were considered. The factor analysis was conducted with six factors and 38 variables, explaining an impressive 70.919% of variance in the data. The concise validation of the factor analysis indicates that financial management emerges as the primary strategy employed by entrepreneurs, encompassing ten components and explaining 26.239% of the variance in the data with an Eigen value of 13.467. Within financial management, budgeting, financial forecasting, cost management, cash flow management, debt management, and transparent tax filing are identified as the main aspects utilized by entrepreneurs. Moreover, innovation plays a significant role in the coping mechanisms and adaptation strategies of entrepreneurs, explaining 17.248% of the variance in the data with an Eigen value of 10.659. The key coping mechanisms and adaptation strategies under innovation include research and development, idea generation, market research, and prototype testing.

Strategic partnership plays a significant role in the coping mechanisms and adaptation strategies of entrepreneurs, constituting six components and accounting for 12.527% variance in the data with an Eigen value of 7.458. The key elements within strategic partnership for entrepreneurs are market access, joint ventures, and distribution channels. On the other hand, diversification explains 7.121% variance in the data with an Eigen value of 5.755, where product and market expansion, as well as product differentiation, emerge as the primary factors in the diversification strategies of entrepreneurs. Emotional resilience is deemed essential for developing the inner qualities of entrepreneurs, and it is represented by four components. It explains 4.546% variance in the data with an Eigen value of 3.377. Lastly, situation handling is assessed through four components, explaining 3.238% variance in the data with an Eigen value of 2.416. All these six factors collectively account for the coping mechanisms and adaptation strategies of entrepreneurs, demonstrating their significant impact on entrepreneurial success and resilience.

7.3. Emotional Responses of Entrepreneurs to Economic Uncertainty

Emotional responses of entrepreneurs to economic uncertainty are analyzed and ranked in Table 3.

Table 3: Emotional Responses of Entrepreneurs

Emotional Responses	Total Score	Mean Score	Rank
Stress and anxiety	915	32.67	3
Resilience and determination	998	35.64	2
Participation in work is low	705	25.18	6
Emotional turbulence	817	29.17	4
Complication in decisions	656	23.43	7
Poor self-confidence	1011	36.11	1
Low level of responsibility	753	26.89	5

Table 3 provides an overview of the emotional responses of entrepreneurs in uncertain times. Poor self-confidence emerges as the primary emotional response, obtaining the highest ranking with a mean score of 36.11. Following closely, resilience and determination rank second with a mean score of 35.64, indicating their significant presence among entrepreneurs. Stress and anxiety also feature prominently as emotional responses, securing third rank of 32.67 mean score points. Additionally, emotional intelligence is observed among entrepreneurs with a mean score of 29.17, while a low level of responsibility is evident, ranking at 26.89 mean score points. Participation in work is noted to be relatively low, with a mean score of 25.18, and complications in decision-making rank subsequently with a mean score of 23.43.

8. Conclusion

The study provides valuable insights into the coping mechanisms, adaptation strategies, and emotional responses of entrepreneurs in the face of economic uncertainty. The findings reveal that the importance of financial management as a primary strategy employed by entrepreneurs, encompassing essential components like budgeting, financial forecasting, cost management, and debt management. Innovation also emerges as a noteworthy influence, with research and development, idea generation, market research, and prototype testing being key coping mechanisms and adaptation strategies under innovation. Moreover, strategic partnerships and diversification play significant roles, with entrepreneurs leveraging market access, joint ventures, and distribution channels in strategic partnerships, while pursuing product and market expansion, and product differentiation in diversification efforts. The emotional responses of entrepreneurs, show that while poor self-confidence is a prevalent emotional challenge, resilience and determination are key strengths among entrepreneurs. Stress and anxiety are also observed, underscoring the psychological toll that economic uncertainty can have on entrepreneurs. The study stressed that the multifaceted nature of entrepreneurship, with financial management, innovation, strategic partnerships, diversification, and emotional resilience all playing crucial roles in shaping the coping mechanisms and adaptation strategies of entrepreneurs. Understanding these dynamics, policymakers, stakeholders, and entrepreneurs themselves can work towards fostering a resilient entrepreneurial ecosystem that navigates economic uncertainties with greater confidence and success. Furthermore, the insights from this study can inform targeted support programs and policies aimed at bolstering the entrepreneurial community, driving economic growth and sustainable development.

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Fun Classroom Management Strategies: Need of Hour

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Classroom management intends to enrich students with various learnings and experiences that their teacher provides; and to have the ability to grasp and absorb what is being presented to them. It contains a variety of skills and techniques for a high-learning, positive classroom environment.

The concept of positive classroom environment is crucial as everything that a teacher does in a classroom has greater impact on the students' developing skills and abilities. This paper explores few strategies for to keep the classroom interesting and interactive.

A few research into Classroom Management have found that the most successful strategies are the one that aims towards creating positive teacher-student relations, Managing and monitoring student behaviour and Teaching for student attention and engagement.

1. POSITIVE TEACHER-STUDENT RELATIONS:

One of the most important and often challenging aspect of interactive classroom management is to build a connect with your students. Although these relations can be used positively in educating individually based off their personal experiences in life but at large these are not meant for classroom management but for creating a positive environment inside the classroom. Collating simple information in your mind about your students and understanding their individual needs and their lives will give greater insights on their preferential learning method and would help you to optimize their skill gain. Simple questions like what they enjoy, their greatest strength, any incident that really moves them, their favourite past times or hobbies, or their unique skill is a great starting point for building relations with the students.

2. TEACHING FOR STUDENT ATTENTION AND ENGAGEMENT:

Attitude is not something that floats down out of the sky- there's always a reason for it, and it most likely originates in the home environment. Attitude comes in many different shapes and sizes. From the student who demands to know 'why should I? Far better to learn not to take it seriously - after all, if you do react, then the child's attitude is obviously having an impact. Activities that take place outside he normal school day, and which provide 'extras in addition to the statutory curriculum. The teacher who gets him or herself involved with extra-curricular activities will tend to develop a really good reputation in the school, because of the positive relationships that he or she builds with the children outside of lessons. Extra-curricular activities can also be great fun for both teacher and students. The teacher who participates in extra-curricular work will at first be full of enthusiasm, but eventually may become subject to exhaustion.

Teachers are able to 'say' a whole heap of stuff without even opening their mouths. Like actors we con- vey many subtle and not so subtle messages by the use of clear body language. Being able to control children through body language takes time and experience. When it comes to body language, it is often a good idea to overdo the message by 'hamming it up' for the class.

3. TWO POSITIVE PILLARS OF CLASSROOM MANAGEMENT:

Reputation - The opinion people have of you, based on prior experiences. Reputations are a very powerful thing within a school. As a newly qualified teacher you might look at the more experienced staff and wonder why on earth a class will behave perfectly for them, while stopping just short of a riot for you. The answer lies, at least partly, in the power of a good reputation. Reputations take a while to build up, but eventually kind of Chinese whisper of good reports about your teaching will gain momentum, and your children will come to you Already expecting good things. Of course, reputations are a double-edged sword - great if your reputation is a good one, but a nightmare if you are preceded by a bad reputation.

Resources - Any 'thing' that is used in school to help with Worksheets, lesson plans, text books and many more thing we tend to think of resources as being paper based . Best resources are actually rather more imaginative than this. You might bring d invite a parent or expert in to talk to the some props in to 'kick start' a lesson. Teachers are also notorious for 'borrowing' things without any intention of actually effecting the return of said items. I sometimes look back on the amount of mugs that I have lost in the course of my teaching career. They provide a sobering reflection of the way that the original meaning of the word 'borrow' has been somewhat lost.

4.   MANAGING AND MONITORING STUDENT BEHAVIOUR:

Setting up clear expectations to the students will help them understand your teaching better. The topic objectives and outcomes should be clearly communicated before teaching a topic to help the student understand their stage of learning. This will motivate them to reach out to you if they have landed on the outcome as communicated by you.

Creating a task box within the classroom could be a great reminder of all the experiences you expect out of the students. Often in the heat of moment it can be tough to hand out consequences or take any action, in these scenarios it is effective to plan and state out the consequences beforehand to the student. This helps them understand the consequences of their action in advance and take care of not creating those undesired scenarios., As a so-called 'behaviour expert', people often ask whether children's behaviour has deteriorated in recent times, and if so, why this might be. Behaviour probably has deteriorated, and that this is down to a number of different causes. Some of these causes are things that we could do something about, if the people who made the decisions in education would only listen to what teachers really need. Some of the causes are far wider-ranging, and would require a sea change in our society to alter.

5.   SKILLS FOR CLASSROOM MANAGEMENT

Advance Skilled Teacher : A career route for those teachers who are good at the job but who want to stay in the classroom rather than going down the managerial promotion path. ASTs work mainly in the classroom, but they also spend the equivalent of one day a week doing 'outreach' work (i.e. supporting other teachers or schools). It is heartening to see the talents of the 'ordinary' classroom teacher being recognized, although some people do feel that using a variable payscale is unfair and divisive.

Going to someone for help or an opinion: The staff who work in schools are generally great at giving advice (sometimes when an opinion has not actually been requested!). We can all benefit from the advice and experience of others, whether teachers or support staff, and this is particularly important early on in our careers. On a number of occasions I have turned for advice to a colleague, and have been given practical help that has been of great benefit to me. Internet forums are a good place to ask for advice from others.

Aims - What we intend the children to learn from a lesson. There can sometimes be an alarming gap between your intended aims and the actual 'learning outcomes' (the learning that really does take place). This gap is not necessarily a sign of a bad lesson plan (although Ofsted inspectors and PGCE tutors might not agree with me on that). It can instead be a sign that the teacher has been able to adapt the lesson as he or she goes along, to better suit the way the children are reacting to what has been planned. So long as they learn something, then surely that's a good thing?

Accelerated learning-Learning things faster. The key idea behind accelerated learning is to make maximum use of the brain; to learn how to learn better. This method is often linked to the multiple intelligences' identified by Howard Gardner. All the boring paperwork and organizational bits and pieces that come with the job. Considering that the main focus of the education system should be teaching and learning, the amount of administration forced upon teachers.It could be the child has picked up an arrogance about the whole process of school and learning - again, typically something learned early on. Perhaps surprisingly, some of our most gifted students will demonstrate an impressive level of attitude. For these very able children, school can be a place where long days are spent studying things they already understand, or working at a level that they feel is beneath them. Certainly teachers can also be to blame for not stretching or challenging these students sufficiently.

Enjoy – To take pleasure in something. There are many reasons why being a teacher can and should be an enjoyable experience. Unlike many jobs, no two days (in fact, no two minutes) will be the same. We get the chance to see our children learning and developing, we have the opportunity to be creative and inspirational in what we do, and we get the chance to actually make a real difference to somebody else's life. The children can easily sense when they have a teacher who genuinely enjoys his or her work, and they will typically respond to this enjoyment by feeling more positive themselves.

Enthusiasm - A key attribute for teachers, particularly strong in newcomers to the profession (some of the old hands will have run out of it years ago). Being enthusiastic about teaching is obviously important, but realistically it can be hard to maintain under all the pressures of the job. Be a little wary of the standard job advertisement request for a teacher with enthusiasm, as this can on occasions be code for 'a teacher onto whom we can dump all those extra jobs that nobody else has the time/energy/stupidity to agree to do'.

Equipment: The tools or clothing needed to do specific work. Children who 'forget' their equipment can drive the teacher to distraction. In subjects where bringing the correct kit is a key feature (for instance, PE) the teacher will need to decide.

Exhaustion - The Reling that strikes approximately three weeks before the end of term. Alternatively, the sensation that his after a week in which someone who should know better has deigned to timetable a parents evening, a twilight staff meeting and a set of reports

Extra-curricular activities - Activities that take place outside he normal school day, and which provide 'extras in addition to the statutory curriculum. The teacher who gets him or herself involved with extra-curricular activities will tend to develop a really good reputation in the school, because of the positive relationships that he or she builds with the children outside of lessons. Extra-curricular activities can also be great fun for both teacher and students. The teacher who participates in extra-curricular work will at first be full of enthusiasm (see above), but eventually may become subject to exhaustion (again, see above).

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An Analytical Study on Artificial Intelligence and Mental Health

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Abstract

Artificial intelligence (AI) has catalyzed a transformative shift across various domains, most notably healthcare. In recent years, there has been a growing interest in harnessing AI's potential within the realm of mental health. While AI holds substantial promise, it also raises distinctive challenges and ethical quandaries. This paper undertakes a critical examination of the current landscape of AI in mental health, spotlighting its inherent advantages, limitations, and ethical considerations that demand attention for its judicious and effective incorporation into mental healthcare practices. Through a meticulous scrutiny of these aspects, this paper endeavors to provide invaluable insights to a diverse spectrum of stakeholders, including researchers, practitioners, policymakers, and mental health professionals. By elucidating the intricacies and ethical nuances inherent to the proficient and ethical utilization of AI technologies in the domain of mental health, this paper seeks to empower these stakeholders with the knowledge required for responsible and efficacious integration

Key words: Mental Health, Potential Benefits, Integration, Limitations

1. Introduction

The term AI was originally coined by computer scientist John McCarthy, who defined it as "the science and engineering of creating intelligent machines." Alan Turing, often regarded as another pioneer of AI, authored a 1950 article titled "Computing Machinery and Intelligence," in which he discussed the criteria for considering a machine as intelligent (McCarthy, J. 1956). As intelligence is conventionally associated with human capabilities, the term "artificial" is used to indicate that this form of intelligence pertains to computers. AI has become ubiquitous in modern Western society, being used for tasks such as information retrieval, social interactions (e.g., through social media), and security systems operation. While AI is starting to find applications in clinical settings, such as medical imaging and genetic testing, its widespread adoption in healthcare is still a work in progress. This is due to the higher stakes and potential risks involved in healthcare applications compared to the AI that enhances our everyday conveniences. This article underscores the critical aspects of AI, including its integration, policy implications, ethical considerations, and therapeutic applications.

2. Background and Significance of AI in Mental Health

The field of mental health encounters numerous challenges, which include resource limitations, extended wait times, and a shortage of mental health professionals. These challenges often lead to delayed diagnoses, insufficient treatment, and suboptimal care for individuals grappling with mental health disorders. In 2019, a study revealed that a predictive algorithm utilized by United Health Group displayed bias against black patients. This tool, which used healthcare spending as an indicator of illness, unintentionally perpetuates systemic inequalities that have historically hindered black patients from receiving adequate care (Obermeyer, Z., et al., Science, Vol. 366, No. 6464, 2019). Algorithms are devised by individuals who harbor their own values, morals, assumptions, and explicit as well as implicit biases about the world. These biases can significantly impact the functioning of AI models, as noted by Nicol Turner Lee, PhD, a sociologist and director of the Center for Technology Innovation at the Brookings Institution in Washington, D.C.

In recent years, there has been increasing interest in leveraging AI technologies to address these challenges and improve mental health care delivery. AI has the potential to revolutionize mental health by providing tools and solutions that can enhance diagnosis, treatment, and monitoring processes. AI algorithms can analyze vast amounts of data, including patient history, genetic information, and behavioral patterns, to identify patterns and markers associated with mental disorders. This can lead to more accurate and timely diagnoses, enabling early interventions and personalized treatment approaches. (Dwyer, D. B., Falkai, P., & Koutsouleris, N. 2018). Additionally, AI-based therapy and interventions offer new avenues for supporting individuals with mental health issues. Virtual therapists equipped with natural language processing capabilities can provide round-the-clock support, deliver evidence-based interventions, and monitor individuals' well-being. These tools can help bridge the treatment gap, making mental health services more accessible and affordable, particularly for underserved populations and those in remote areas. (Fitzpatrick, K. K., Darcy, A., &Vierhile, M., 2017). However, it is important to recognize the potential risks and ethical implications associated with AI in mental health. Ensuring the privacy and security of sensitive mental health data, addressing biases in AI algorithms, maintaining

transparency in decision-making, and preserving the human touch in therapeutic relationships are critical considerations that must be carefully addressed to maximize the benefits and minimize the risks of AI integration.

3. Objectives of the study

This study attempted to conduct a critical examination of AI within the context of mental health. Its primary objectives included assessing the current state of AI applications in mental health, identifying their benefits and limitations, and exploring the ethical implications linked to their integration. Furthermore, the study seeks to offer valuable insights into best practices and recommendations for the responsible and effective utilization of AI in the field of mental healthcare.

The specific objectives of the study include:
1. Reviewing the existing literature and research on AI applications in mental health, including diagnostic tools, therapeutic interventions, and monitoring systems.
2. Identifying the limitations and challenges of AI in mental health, including concerns related to the reliability and validity of AI algorithms, privacy and security issues, ethical considerations in AI decision-making, potential biases and discrimination in AI models, and the impact on human-AI interaction
3. Analyzing the ethical implications of AI in mental health, including issues of informed consent, data privacy, transparency, explanability of AI models, accountability, and addressing bias and discrimination in AI algorithms.

By achieving these objectives, this study aims to contribute to the existing knowledge and understanding of the potential benefits and challenges of AI in mental health. It seeks to inform researchers, practitioners, policymakers, and stakeholders in the mental health field, facilitating the responsible and effective use of AI technologies to enhance mental healthcare outcomes while addressing the ethical considerations associated with their implementation.

4. Methodology

The present study is based on secondary date collected from various research articles, newspaper, magazines, reports, books etc. This data was analyzed and reviewed to draw at the conclusion.

5. Therapeutic Interventions and Monitoring Systems

In therapeutic intervention machine learning techniques can identify patterns and markers that might be difficult for human clinicians to detect, leading to more accurate and timely diagnoses. AI algorithms can analyze large data-sets, including clinical records, genetic information, neuroimaging data, and behavioural patterns, to aid in the diagnosis of mental disorders (Mahler, 2021) Esteva, A., Kuprel, B., Novoa, R. A., Ko, J., Swetter, S. M., Blau, H. M., &Thrun, S. (2017). Subsequently, virtual therapists and Chabot's equipped with natural language processing capabilities can provide round the clock support, deliver evidence based interventions, and offer personalized treatment approaches. These AI tools can engage individuals in interactive conversations, provide psycho - education, offer coping strategies, and monitor progress. The smart phone application Woe-bot, for example, uses machine learning and natural language processing to deliver cognitive behavioral therapy (CBT) to tens of thousands of daily users. By exchanging short text messages with a chat-bot, users can address stress, relationship problems, and other concerns by learning about CBT concepts such as over generalization and all or nothing thinking (Fitzpatrick, K. K., JMIR Mental Health, Vol. 4, No. 2, 2017).

And AI algorithms can monitor individuals' behavior, such as social media activity, smart phone usage, or sensor data from wearable devices, to detect early signs of distress or relapse. By analyzing patterns and changes in behavior, AI systems can provide real time alerts to healthcare providers or caregivers, enabling timely interventions and proactive care. (R., Xie, H., & Campbell, A. T. (2015). And AI technologies can facilitate mental health screening and assessments through online platforms and mobile applications. By employing intelligent algorithms, these tools can analyze user responses and provide preliminary evaluations of mental health conditions, guiding individuals toward appropriate interventions or professional help. Church D, Stapleton P, Sabot D (2020). And AI can assist healthcare professionals by providing decision-support systems based on evidence-based guidelines and expert knowledge. These systems can help clinicians in treatment planning, medication selection, and risk assessment, improving the overall quality of care. (Miotto, R., Li, L., Kidd, B. A., & Dudley, J. T. (2017).

And AI algorithms can analyze individual patient data, including clinical records, genetics, and treatment outcomes, to develop personalized treatment plans. Considering various factors such as comorbidities, treatment response patterns, and genetic markers, and AI can optimize treatment selection and dosage for better patient outcomes. (Obermeyer, Z., & Emanuel, E. J. 2016). These AI applications hold the potential to enhance mental health care delivery, increase accessibility, and improve patient outcomes. However, it is high time to address the challenges and ethical implications associated with AI integration, such as ensuring data privacy, addressing

biases in algorithms, maintaining transparency and explainability, and preserving the human touch in therapeutic interactions. (Karimian, G., Petelos, E. & Evers, S.M.A.A 2022).

5.1 Schizophrenia and Autistic Spectrum Disorder

Virtual reality represents a human-computer interface that enables users to immerse themselves in and interact with computer-generated simulated environments (Rizzo, Buckwalter, & Neumann, 1997). Clinical virtual reality pertains to the application of this technology for clinical assessments and therapeutic purposes (Rizzo et al., 2011; Schultheis & Rizzo, 2001). It has been effectively employed in treating various psychological disorders (Gorrindo & Groves, 2009). Virtual reality serves as a pivotal technology for crafting virtual entities like humans and simulated life forms, such as virtual pets, with which people can interact in virtual environments like computer games, personal computers, and mobile devices. For instance, virtual human systems have been created and tested for providing healthcare information, aiding medication adherence in patients with schizophrenia (Bickmore & Pfeifer, 2008), facilitating hospital discharge planning (Bickmore et al., 2010), offering skills training for individuals with autistic spectrum disorders (Parsons & Mitchell, 2002), and delivering training and therapeutic interventions through computer games. Artificial intelligence techniques like machine learning (ML), natural language processing (NLP), and affective computing are instrumental in enhancing the lifelikeness, interactivity, and engagement of these artificial entities.

Robotics technologies are currently under development to gain insights into and potentially address a range of healthcare issues, especially those related to cognitive disorders, by facilitating interaction with individuals. A notable example of this application is in the context of autism (Scassellati, Admoni, & Mataric, 2012). Multiple research studies have employed interactive robots to investigate areas like sensory overload (Dautenhahn et al., 2009) and difficulties in social engagement (Pioggia et al., 2007) in individuals with autism. In a broader context, robots are also being utilized to provide assistance to patients with mobility impairments (Riek & Robinson, 2011) and those suffering from Alzheimer's disease (Tapus, Tapus, & Mataric, 2009)

6. Exploring the Intersection of Mental Health and Neurological Disorders

The Robo-Brain project is a large-scale computational system intended to serve as an online "brain" that could assist robots with navigation and understanding of the environment around them (Saxena et al., 2014). The development of Robo-Brain is supported by funding from the National Science Foundation, the Office of Naval Research, Google, Microsoft, and Qualcomm, and collaborations with researchers from the University of California at Berkeley, Brown University, deep-brain stimulation is another highly exciting and promising technological advance involving brain implants. This is a neuro-surgical procedure where electrodes are implanted into the brain to stimulate targeted areas of the brain. The technique can have therapeutic benefits for conditions such as depression, chronic pain, OCD, Parkinson's disease, and Tourette's syndrome (Williams & Okun, 2013). In support of President Obama's BRAIN Initiative, DARPA awarded two large contracts in 2014 to Massachusetts General Hospital and the University of California, San Francisco, to create electrical brain implants capable of treating seven psychiatric conditions, including addiction, depression, and borderline personality disorder (DARPA, 2014).

Numerous controlled studies have indicated that companion-like robots may serve as an effective intervention for reducing loneliness and decreasing blood pressure. As an illustration, a recent randomized controlled trial, conducted in 2013 by Robinson et al. at a care facility in New Zealand (n=40), demonstrates this. Over a 12-week period, participants in the intervention group engaged with Paro, while participants in the control group participated in standard activities at the care facility. The results revealed that individuals who interacted with Paro experienced a significant reduction in loneliness during the trial, compared to the control group (Robinson, MacDonald, Kerse, & Broadbent, 2013).Additionally, intelligent virtual agents (IVAs) are computer-generated, synthetic virtual characters capable of interacting with humans (Prendinger & Ishizuka, 2004).

7. Identifying the Limitations and Challenges of AI in Mental Health

In the field of artificial intelligence (AI), computers excel at solving intricate mathematical problems with ease. However, seemingly simple tasks like recognizing a human face, comprehending language, or guiding a robot safely through a room pose significant challenges. A portion of this challenge is often referred to as Moravec's Paradox, a concept put forth by Moravec in 1988. It suggests that tasks requiring high-level reasoning demand relatively little computational effort, while low-level sensorimotor skills demand substantial computational resources. Furthermore, humans possess an inherent ability to apply common-sense knowledge in everyday situations, such as understanding another person's emotional states and intentions. Creating intelligent machines with these common-sense capabilities necessitates achieving a level of human-like intelligence a goal that continues to challenge the field of AI. Throughout the history of AI literature, there have been on-going philosophical debates about the extent to which AI systems can embody and demonstrate "deep reasoning"

capabilities, including common-sense reasoning based on a broad knowledge of the world (Sharkey and Ziemke, 2001).

Integrating AI effectively into human healthcare processes has posed a substantial challenge for a wide range of AI applications. Specifically, when designing AI systems to act as decision support tools for diagnosis and treatment, it's crucial to consider healthcare professionals' practices, as well as the cognitive limitations inherent to human decision making. Furthermore, addressing the seamless integration of these AI systems into workflow processes is essential. Issues related to the effective integration of such systems into the daily routines of busy healthcare professionals emerged early in the development of medical expert systems and continue to be a prevailing challenge. Even with the advent of more contemporary diagnostic systems like IBM's Watson, the human factors involved in integrating this technology into healthcare organizations have been reported as problematic and warrant further exploration (Schmidt, 2017).

The integration of AI systems into the intricate digital landscape of today's healthcare organizations, which has grown increasingly complex over the past few decades, poses several challenges. This includes the incorporation of AI systems into extensive proprietary systems like hospital-wide electronic health record systems (Strickland, 2019).One of the most pressing issues impacting the acceptance of AI technologies in healthcare practice today concerns the establishment of trust among end users in AI technology. Additionally, there are valid concerns regarding liability and the potential consequences of errors stemming from the utilization of AI technologies. Certification and regulatory approval for AI technologies, including FDA approval processes, also rank as areas of concern for healthcare organizations as they contemplate the adoption of AI technologies into their daily practice. These concerns arise from considerations of system quality, organizational liability, the current ambiguity surrounding the necessity for regulatory approval for numerous AI applications in healthcare, and the demand for effective Human Computer Interaction (HCI) interaction modes and models.

Furthermore, there are questions regarding the depth of integration an AI application should achieve to support healthcare work and practices. The potential modes of interaction encompass a spectrum, ranging from human consultation, critiquing human decisions, automated alerting, augmenting human perception, to extending physical access, such as in the field of robotic surgery. Some systems may operate unobtrusively in the background, offering active alerting and reminders, functioning as a direct extension of rule-based AI, and applying machine learning and knowledge discovery (Musen et al., 2006).

8. Analyzing the Ethical Implications of AI in Mental Health

One critical aspect to consider is the respect for privacy, which is closely linked to an individual's right to autonomy and dignity, and it is widely recognized as essential for personal well-being (Moore, 2005). Breaching this trust by invading privacy or unauthorized use of personal information can erode the trust of both individual healthcare providers and their profession. The potential misuse of private data may result from the careless handling of information, such as leaving a laptop containing patient data unsecured in a public place, or unauthorized access to electronic data by hackers. While threats to patient privacy, especially in terms of electronic data security, are pertinent to various healthcare technologies, current and emerging technological capabilities, like psychological signal detection through methods such as visual, voice, and psychological data collection, as well as the recording of conversations (in audio, video, or text format) between patients and AI healthcare providers (IACPs), raise the potential for significantly more data to be collected about individuals, often without their awareness (Luxton, 2014).

Furthermore, the principle of Non-maleficence dictates that the actions of healthcare providers should not cause harm to the patient or to society at large. This includes offering treatments that are known to be effective and ensuring the competence of care providers. The principle of Justice underscores that patients in similar situations should have equitable access to the same level of care, and when allocating resources to one group, the impact of this allocation on others must be carefully assessed. These are considered prima facie principles, implying that each principle holds binding authority unless it conflicts with another, in which case a choice between them must be made (Gillon, 1994). However, these principles can also be compromised by technological errors. The principle of confidentiality necessitates that healthcare professionals safeguard patients' confidential records under all circumstances, ensuring that they remain undisclosed. In the context of AI, there is a risk of secrets being revealed due to unethical hacking and technological errors.

9. Providing best Practices and Recommendations for the Responsible Integration of AI

1. **Prioritizing Interdisciplinary Collaboration:** It is crucial to emphasize interdisciplinary collaboration, involving a partnership between clinicians, researchers, and AI developers when integrating AI into mental healthcare. Clinicians need a comprehensive understanding of AI technologies and their constraints, while AI

developers should actively involve clinicians throughout the development process to ensure that the technology aligns with clinical needs and practices (Gururajan, A., Gururajan, R., & Leeb, C., 2021).

2. **Evaluation and Validation of AI Algorithms:** Rigorously assessing and validating AI algorithms in the context of mental healthcare is imperative to guarantee their reliability, accuracy, and safety. Employing robust methodologies and standardized metrics is essential to gauge the performance and generalizability of AI systems (Spielberg et al., 2020).

3. **Continual Monitoring and Improvement:** It is vital to continually monitor and enhance AI models based on real-world feedback and outcomes. Regularly evaluating their performance, addressing biases and limitations, and adapting to evolving clinical requirements are critical to ensure the responsible and effective integration of AI in mental healthcare (Gururajan, A., Gururajan, R., & Leeb, C., 2021).

4. **Leveraging AI for Mental Health Data**: Mental health clinical data often consists of subjective and qualitative patient statements and written notes. However, there is substantial potential for AI technology in mental health practice. Given the considerable diversity in the pathophysiology of mental illnesses, identifying biomarkers could lead to more objective and improved definitions of these conditions. Utilizing AI techniques can enable the development of better pre-diagnosis screening tools and the creation of risk models for determining an individual's predisposition to, or risk of developing, mental illness (Shatte ABR, Hutchinson DM, Teague SJ, 2019).

10. Conclusion

In conclusion, AI is heralding a profound transformation in the realm of behavioral and mental healthcare. It will no longer be the sole domain of medical professionals like physicians, psychologists, counselors, and social workers. Instead, the knowledge and expertise will be ingrained in intelligent machines that will engage with individuals. This shift also necessitates a reevaluation of the therapeutic relationship, as it now encompasses the patient's connection with technology. Furthermore, there are emerging ethical concerns that require thoughtful consideration, particularly concerning new threats to patient privacy. As we develop and implement these technologies, we must not lose sight of the significance of the bond between healthcare providers and recipients and the mutual responsibilities within our communities. Our imperative is to design these machines with an unwavering commitment to the well-being of individuals, to alleviate suffering wherever possible, and to do so equitably and ethically. However, we must also recognize that AI, being a human-engineered construct, inherently carries limitations. It cannot be a panacea for all conceivable human challenges. In this study, we have succinctly delineated both the areas where AI can contribute and the associated consequences and constraints.

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To study the importance of Gain characteristics in Quantum well region using Type I and Type II nano heterostructures

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Abstract
The effects of changes shown quantum wells separately through step index in MG (Material Gain) & LW (Lasing Wavelength) that are cramped on nano heterostructures especially type-I InGaAsP/InP towards laser operation of polarization mode, i.e. transverse electric at 0 K for different carrier concentrations are reported in this paper. The material's gain across the single QW has been found to be the highest, but for the remaining three, five, and seven QWs in the same structure, the carrier densities seemed to be the same. Regarding the laser wavelength, the material gain varied from the lowest value to the highest value within the active region for the growing QW layers, and the material parameter continues constant for any additional rise in QW number, which truly relies on the consequences of carrier density. Additionally, the negative gain criteria in the material gain spectra for a number of quantum wells can only be achieved at a carrier concentration of roughly 2 1018/cm3. The study illustrates the precision and dependability of the developed heterostructure for the transportation of light source for long-distance communication over optical fiber networks.

Keywords: Optical gain, InGaAs, InAlAs, InP Heterostructure, Semiconductor laser, quantum wells.

1. Introduction

Long-distance system capacity requirements in addition to demand for more efficient semiconductor laser diodes both continue to grow over time. In responses, the shortest spectral width (around a tenth of a nanometer) possible in a quantum well of a laser diode was obtained. There were several other designs put forth, but the most of them have already vanished, leaving only a few useful goods. A rise in interest in materials with dimensions at the nanoscale has been recognized over the past 20 years. The reduction in the number in semiconductor diode lasers is currently driven by significant advances in nanoscale crystal growth and manufacturing processes. The requirement to develop a maximum color gamut, lower lasing threshold & higher material gain, is another factor driving this trend [12]. The concept that heterojunctions could be included in semiconductor lasers devices in particular to significantly raise the speed for population inversion was initially put forward in a 1963 publication by Herbert Kroemer, a well-known authority in the field. Although it took some time, Kroemer's theories are now considered as industry standards in the field of materials science for constructing heterostructures. It has been found that the bandgap energy can be changed by using the quantum size effect in the quantum well heterostructure.

A particular class of semiconductor device is the quantum well laser diode. The quantum well technique, which additionally modifies the density of the electron and hole potential energy levels, considerably increases the optical gain. The main advantages of quantum well diode lasers includes their improved output beam confinement, increased efficiency at converting current into light, and the capacity to emit light at a broad spectrum wavelengths [11], [17-18]. In practical terms, all of these advantages in the quantum well shape significantly decrease the threshold current while strengthening the capacity to change the radiation wavelength by changing the measurement of the active layer [17]. Simple quantum well laser diodes have a major drawback in that thin coatings are frequently too thin to effectively block light. Two additional layers are added to the original three to solve this issue. Since these layers' refractive indices are lower than those of the core layer, they effectively block light. One such device is based on a discretely restricted heterostructure and is known as a semiconductor laser diode. In practically all commercial semiconductor laser diodes since the 1990s, heterostructure-based quantum well laser diodes have imposed an individual restriction. Most heterojunction designs constructed from quaternary alloys, including III-V semiconductors, can cover the commercially desirable wavelength range (0.5 to 4 m). The InGaAsP active region is the central layer of a five-layer dielectric plate waveguide, which is the unique restricted heterostructure that previous studies [1-2], [4], and [14] propose.

In such heterostructures, the active zone or the quantum well region is actually the only place where the holes and electrons that cause optical changes can exist. The confinement of the photons in the quantum well is also aided by the high refractive index of the active region. This double confinement, or the confinement of the carriers electrons, photons and holes makes the stimulated emission process stronger and more efficient and also contributes to the function of the diodes. laser operating at room temperature. These heterostructures also have the capacity to maintain stability at greater temperatures, improve bandwidth, and have tuneable wavelengths. Numerous in-depth experimental and theoretical investigations have been carried out for type I nanostructures depending on the InGaAlAs/InP material system and some theoretical findings regarding TM and TE optical gain,

Differential gain, G-J characteristic, behaviour of refractive index varying with carrier density, and other parameters have been reported in references [4-6]. However, a recently created type II "W"-shaped heterostructure (InAlAs/InGaAs/GaAsSb) on the GaAs substrate is being examined in this research. This is ideal for the emission of radiation with the same wavelength (1.55 m) as the radiation from the type I InGaAlAs heterostructure, according to the modeling findings that have been proposed and reported. The proposed heterostructure emits radiation at a wavelength of 1.55 m, hence type II "W" heterostructures that are formed of the InAlAs/InGaAs/GaAsSb material mixture might be used for alternative resources of energy to type I InGaAlAs/InP nanostructures.

To simulate an optical gain coefficient with respect to either photon energy or transition wavelength, consider the following   express

$$G(\hbar\omega) = \frac{2.\pi e^2}{nc\epsilon\omega Lm^2} \sum_{\sigma=U,L} \sum_{n,m} \int \left| \left(\hat{e}. \, M_{nm}^{\eta\sigma}(k_t) \right) \right|^2 \times \frac{\left(f_n^c(k_t) - f_{\sigma m}^v(k_t) \right) \left(\frac{\gamma}{\pi} \right)}{\left(E_{\eta,\sigma nm}^{c,v}(k_t) - \omega\hbar \right)^2 + \gamma^2} \frac{k_t \, dk_t}{2\pi}$$

The exact form of the notations used in the earlier phrase for the material gain can be found in the source materials [5, 6].
where P and N are the quantities of electron and hole carriers in the conduction and valence bands, correspondingly, and the value of Lz is the width of quantum well, represents decreased plank constant, while k represents the Boltzmann constant.

2. Structure Details

Figures 1 and 2, respectively, depict a schematic representation of the simulation's energy band diagram and semiconductor layer structure. A single layer of 60 thick In0.9Ga0.1As0.59P0.41 material is sandwiched between two In0.75Ga0.25As0.55P0 wide-bandgap barrier layers to create the proposed individually limited step-index laser nano heterostructure. It consists of layers of quantum wells. Arranged. In0.5Ga0.5As0.11P0.89 material then forms a 50 thick cladding layer. In1-xGaxAsyP1-y fluctuates with the value of the mole fraction x because In1-xGaxAsyP1-y's bandgap energy relies on the alloy composition. Of course, the bandgap in the quantum well region is less than the bandgap in the barrier region, and vice versa for the bandgap in the cladding region. The entire structure, as depicted in Figure 1, is grown fully on an indium phosphide substrate. Additionally, simulations for various quantum well & carrier densities number in the area of active region were performed.

Table 1: An InGaAsP/InP laser nano-heterostructure utilizing special confinement SQW featuring an integrated layering structure.

Thickness of material (x & y)	Material Component	Active Region
x=0.50, y=0.11	In1-xGaxAsyP1-y	Cladding Layer
x=0.25, y=0.55	In1-xGaxAsyP1-y	Barrier Layer
x=0.10, y=0.59	In1-xGaxAsyP1-y	Quantum well Layer
x=0.25, y=0.55	In1-xGaxAsyP1-y	Barrier Layer
x=0.50, y=0.11	In1-xGaxAsyP1-y	Cladding Layer
InP Substrate		
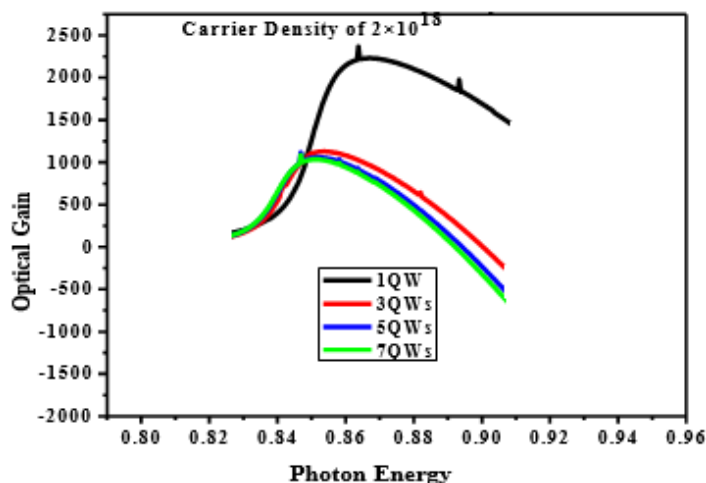
Fig 1. Photon energy and optical gain
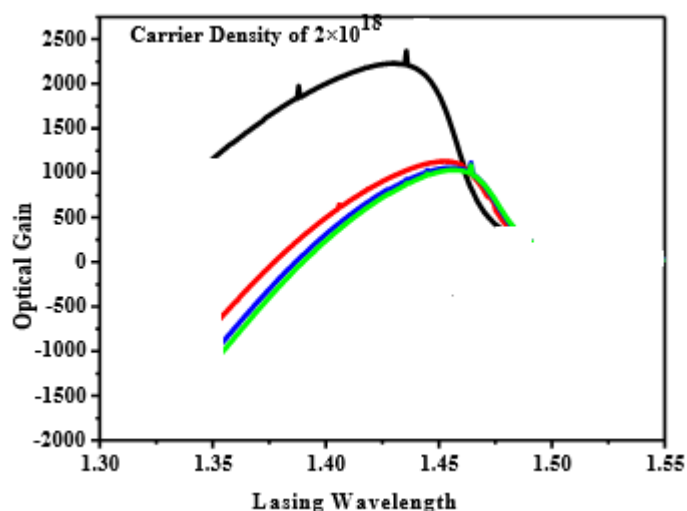
Fig 2. Optical gain of lasing wavelength.

When the energy of photons related gain in material is estimated at carriers densities of 21018/cm3 with various quantum well numbers, a maximum gain of 2230.14/cm appears around a value of 0.867eV photon energy in the single quantum well structures in Figure 3. The existence of peaks in substance gain spectra or sudden shifts in the material gain caused from certain irregularity is an undesirable consequence of the optical beam's brief responses in the proposed lasing nano-heterostructure. Also, in the circumstance of multiple quantum wells within the active region, at the carrier density equal to 2 1018/cm3, negative material gain or loss of material occurs at a specific photon's energy and below the associated wavelength in the gain spectra, suggesting the optical loss as a result of radiation absorbed inside the waveguide, shown in Figures 3 and 4. In multiple quantum well architectures, carrier densities of 4 1018 cm3, 6 1018 cm3, and 8 1018 cm3, there is no negative material gain condition. At any of the aforementioned carrier densities, however, single quantum well architectures show no evidence of material loss. At carrier concentrations of 21018/cm3 with various quantum well sizes, wavelength dependant material gain is demonstrated, and it is discovered that the greatest gain having 2230.14/cm can be achieved at 1.4297 m wavelengths for single quantum well structure.
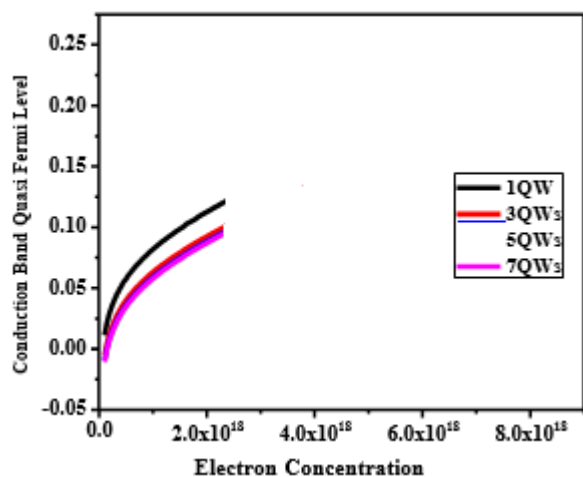
Fig 3. Optical gain of lasing wavelength.
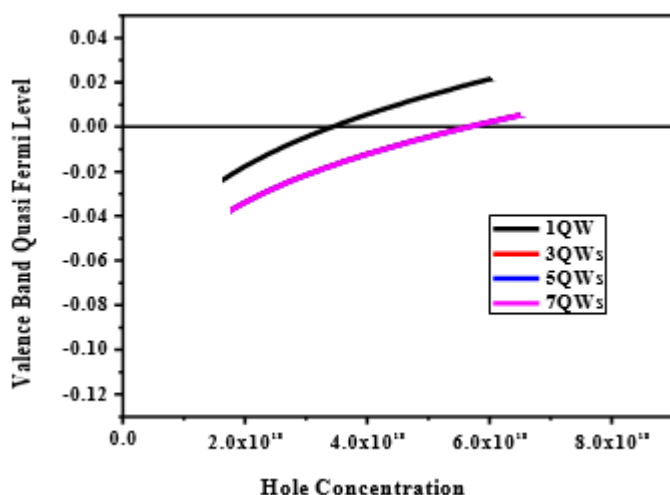
Fig 4. Optical gain of lasing wavelength.

Figures 3 along with **Figure 4** also display the quasi-Fermi levels of valence band holes and conduction band electrons for various nano heterostructure quantum well counts.

3. Conclusion

For step index separately confined type-I InGaAsP/InP nano-heterostructure, the material gain was seen with respect to wavelength and the energy provided by the photon in transvers electric mode. The quantum wells of different size has been calibrated in active region with different carrier densities having a wavelength of around 1.38 μm wavelength and 0.859 eV photon of single quantum well nano-heterostructure. The study also concludes that for lower concentration condition the gain behaves in a different way for different carrier densities (Low and High) with no material loss in active region. The study also depicts that same gain is calculated for initial sizes of quantum wells but the wavelength increases as the size of the QW increases in the active region and for higher size QW, the gain is almost for any carrier density.

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Cloud Security in Healthcare: Compliance and Data Protection Challenges

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Abstract
As healthcare firms move data and operations to the cloud, compliance and data protection issues become critical. This study examines "Cloud Security in Healthcare: Compliance and Data Protection Challenges." The paper examines the intricate relationship between healthcare legislation like HIPAA and cloud infrastructure security measures to protect patient data. This research study sheds light on healthcare cloud security by examining compliance requirements, data protection issues, and best practices. Real-world case studies show effective security solutions and give practical advice for healthcare firms balancing compliance with cloud data protection. The discussion section discusses the study results and healthcare cloud security's future. This paper emphasizes the importance of compliance and data protection in the quickly changing healthcare IT ecosystem and the need for proactive security methods to secure patient data in cloud settings.

Keywords: Cloud Security, Data Integrity, Cloud Computing, IOT, Data Encryption

I.   Introduction

Cloud computing has brought flexibility and efficiency to healthcare. Healthcare firms are using the cloud to enhance patient care, simplify operations, and handle massive medical data. This cloud migration requires securing, complying, and protecting sensitive patient data. This study examines "Cloud Security in Healthcare: Compliance and Data Protection Challenges." It covers the challenges healthcare providers have while entrusting patient records and crucial data to cloud-based infrastructures. In the field of healthcare, efforts are being made to discover answers to difficulties such as the management of numerous stakeholders in the provision of services, the effects of financial constraints, and the effects of an aging population [29]. This article discusses cloud-based healthcare data security methods and solutions in the face of complicated regulatory frameworks like HIPAA and emerging data threats. In this short overview, we will discuss compliance rules, data security problems, and best practices that may help healthcare firms navigate these complex seas. Real-world examples and case studies will provide practical insights and ideas to help healthcare professionals protect patient data in cloud settings. We will also discuss our study results and healthcare cloud security's future. This article emphasizes the need of compliance and data protection in an age of fast technological innovation, where strong security measures preserve patient privacy and healthcare data integrity.

2. Background and significance

The incorporation of cloud computing technologies into healthcare has transformed service delivery, management, and optimization. According to a thorough study by Kruse et al., the security of the healthcare sector falls behind that of other sectors. The authors propose that healthcare companies employ VLANs and authentication, identify explicit cybersecurity responsibilities, set up protocols for software updates and data breach management, and teach users on avoiding suspicious code in order to solve this. A key target for medical information theft, according to the analysis, is the healthcare sector [1]. Cloud computing improves healthcare companies' scalability, cost-effectiveness, accessibility, and provider cooperation. These benefits have spurred fast adoption of cloud solutions in EHRs, telemedicine, data analytics, and remote patient monitoring. The integration of IoT and cloud computing in healthcare applications is covered by Dang et al. (2019). They emphasize the benefits of cloud computing, including scalability, portability, and the capacity to communicate data in an organized and structured way amongst patients, and healthcare professionals [2]. The design of cloud computing systems may compromise client privacy and security [3]. However, moving to cloud-based healthcare systems is complicated. Any cloud-based solution's ability to satisfy software developers, cloud administrators, and end users is critical to its success. Adoption of clouds is hampered by a number of unique issues, including complexity, control, privacy, security, dependability, and cost [4]. Protecting sensitive patient health information is crucial. In a number of scenarios, cloud-based architectures have been largely adopted to strengthen and simplify the design, the development, and the deployment of information systems. These information systems are used for collecting, processing, and sharing clinical records [16, 17, 18, 19, 20, 21, 22, 23, 24] hospital administrative information [25], or medical images [26, 27, 28].

Healthcare practitioners handle private patient data such medical histories, treatment plans, diagnostic imaging, and personal identifiers. Sensitive information, such as login credentials, may need to be encrypted while in transit. However, information in transit in an unencrypted form is still information [5]. The US Health Insurance Portability and Accountability Act (HIPAA) outline legal and ethical requirements to secure patient data confidentiality, integrity, and availability. Healthcare firms confront complex data security, privacy, regulatory, and information management issues with cloud computing. Ensuring safe cloud storage, transfer, and access to

patient data while meeting strict regulatory criteria is difficult. This paper addresses the following research questions:

RQ1: What cloud computing strategies do healthcare systems use?

RQ2: What security issues prevent healthcare providers from using cloud computing?

RQ3: What are existing healthcare providers' cutting-edge cloud computing technologies and their security risks?

3. Problem statement

The primary focus of this study is on the efficient management of compliance and data protection obstacles that emerge as a result of the use of cloud technologies in the healthcare sector. Healthcare businesses are required to prioritize the security, privacy, and integrity of patient data as they make the shift towards cloud-based infrastructure and data storage. This necessitates strict adherence to regulatory requirements, including the Health Insurance Portability and Accountability Act (HIPAA). The primary concern is on the ability of healthcare businesses to effectively adhere to regulatory obligations while safeguarding confidential patient information within the ever-changing and dispersed realm of cloud computing.

4.   Research Objectives

The goals of this study's research are to fully address the problem statement and provide insights and answers that can be used:

Investigate Compliance Frameworks: Look at legal compliance systems like HIPAA and explain what their specific requirements are for protecting healthcare data in the cloud.

Identify Data Protection Challenges: Identify and examine the many data security challenges that healthcare organizations face when moving private patient data to the cloud, such as data leaks and illegal access.

Explore Best Practices: Look into and write down the best practices and security measures that healthcare companies use to meet legal requirements and keep up with cloud technology changes.

5.   Data Protection Challenges

In healthcare, where the privacy, accuracy, and access of patient information are very important, data security is the most important thing. To protect data well, there are a few big problems that need to be solved:

Identifying Sensitive Healthcare Data	Threats to Data Security and Privacy	Security Strategies and Encryption
Complex Data Landscape: Healthcare data spans electronic health records (EHRs), diagnostic images, lab results, and more, making it challenging to identify all sensitive information.	Cyberattacks: Evolving threats, such as ransomware and phishing, pose substantial risks to healthcare data security.	Data Encryption: Implementing strong encryption for data at rest, in transit, and during processing is vital.
Unstructured Data: Much patient data is unstructured (e.g., physician notes), complicating identification and categorization.	Insider Threats: Employees and authorized users can unintentionally or maliciously compromise data.	Access Control: Ensuring that only authorized personnel have access to patient data.
Patient Consent: Ensuring data protection while respecting patient consent preferences adds complexity.	Mobile and Remote Access: The proliferation of mobile devices and remote work expands attack surfaces and data exposure risks.	Authentication and Authorization: Robust user authentication and access authorization are essential.

Table 1. Data Protection Challenges in Healthcare

6.   Cloud Architecture in Healthcare

The use of cloud computing in healthcare has completely changed the way that information and services are administered. Cloud medical storage is the safekeeping of sensitive healthcare information such as electronic health records (EHRs), medical pictures, and patient demographics. This information is readily available from any location, allowing for faster and more accurate patient treatment. If sensitive customer information is leaked during a cloud account hijacking event, it might have serious consequences for businesses in fields like healthcare [10].

When it comes to the deployment of a new healthcare-based system that is based on IoT and cloud computing, the first thing that needs to be done is a list of all of the activities and use-cases linked with the system. Because the therapy for each condition is unique and complex, including a wide variety of actions that are mostly dependent on the perspective of the health care practitioner, this is necessary. In the context of the remote monitoring system [12], the smart healthcare service [13], and the architecture for ubiquitous patient health monitoring system based on cloud computing [14], the introduction of linked activities and use-cases has been discussed. The healthcare

systems that have been discussed may be seen as examples of conventional local network topologies thanks to the prevalence of internet connections. According to [13,15], the topology of a semantic healthcare system has to include semantic data annotation created utilizing heterogeneous Internet of Things devices and a set of medical criteria in order to function properly.
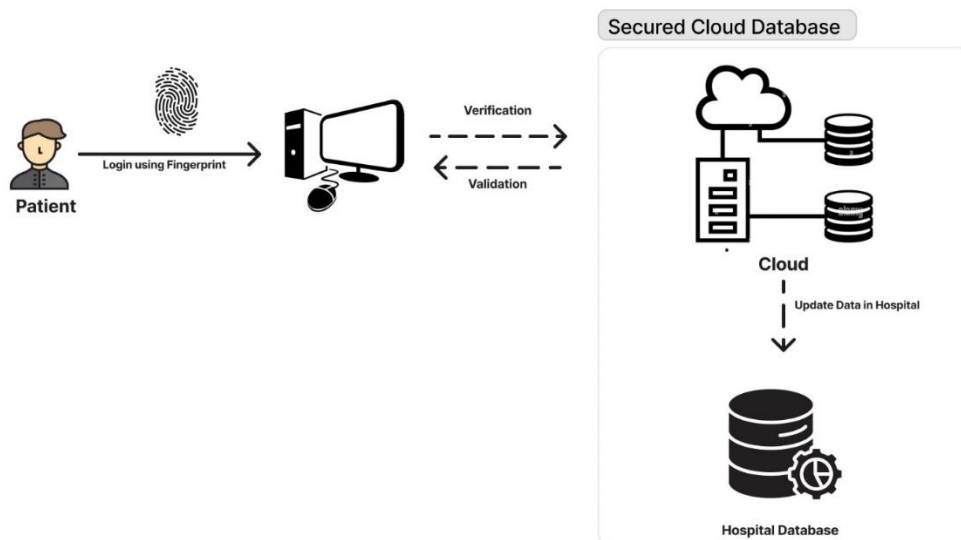
Figure 1. The Cloud Architecture in Healthcare

Because of its scalability, healthcare institutions may better respond to fluctuating patient needs without incurring unnecessary expenses. Patients may now access their medical information in the cloud and have two-way conversations with their doctors via mobile apps. Sensitive patient information is safeguarded by advanced security measures including encryption and access limits, and healthcare services are accessible even during outages thanks to disaster recovery plans. As technology advances and we see examples like IoT, 5G internet, and smart cities, cloud systems will play a bigger part in processing and storing data [8]. Better patient outcomes and predictive modeling for healthcare choices are made possible by cloud architecture's ability to easily include AI and machine learning for data analysis. Rao et. al. provides a methodology for analyzing security and privacy concerns in cloud-based social networks. Regarding various cyberattacks on cloud systems from a technological perspective [6]. Most of the time, cloud computing models do not provide users control over the data that cloud service providers' data centers keep [7]. Cloud computing enables employees to access and manage their applications and data seamlessly on any device, regardless of their location [31]. Privacy protections and data consent management are included into cloud systems to guarantee compliance with healthcare standards like HIPAA and GDPR. Cloud computing architectures, service models, deployment models, cloud components, and cloud security challenges were all investigated, but no solutions to these problems were discussed [9]. The system layer is one of the main functional layers in this article and is responsible for managing the entire system, including registering the system log and passing user instructions to the appropriate modules. It also performs load balancing to optimize the load, verifies the user's identity, and determines if the operation of system nodes has faults [11]. These structures facilitate telemedicine services, expanding patient access to options like virtual doctor visits and continuous monitoring. With the help of cloud providers and managed service professionals, the healthcare industry is developing customized cloud solutions. With the cloud's data analytics features, medical researchers and administrators may get actionable insights from massive databases to inform their work. Overall, cloud architecture is a paradigm change in healthcare since it improves efficiency, protects patient information, and encourages new approaches to medical practice.

In this analysis, we will deconstruct the sequential processes and provide a comprehensive elucidation of the streamlined cloud security method.

Step	Description
Define Security Objectives	Establish the overarching security goals and objectives for the cloud environment.
Identify Assets and Risks	Identify all assets in the cloud environment (e.g., data, applications) and assess associated risks and vulnerabilities.
Access Control	Implement user authentication mechanisms (e.g., usernames, passwords) and access controls to authorize authorized user access
Encryption	Encrypt sensitive data both at rest and in transit to protect it from unauthorized access or eavesdropping.

Regular Auditing	Conduct security audits and assessments periodically to identify vulnerabilities and monitor security status.
Security Updates	Keep all cloud components, including operating systems and applications, up to date with security patches.
Incident Response	Develop an incident response plan outlining actions to take during security incidents, including containment and recovery
Vendor Assessment	Assess the security practices of third-party cloud providers or vendors to ensure compliance with security standards.
Employee Training	Provide security awareness and training programs for cloud users and staff to prevent security breaches due to human error.
Compliance Monitoring	Continuously monitor compliance with relevant security standards and regulations to maintain legal and industry-specific requirements

Table 2. Step-wise Description of Proposed Algorithm

7.   Proposed Algorithm
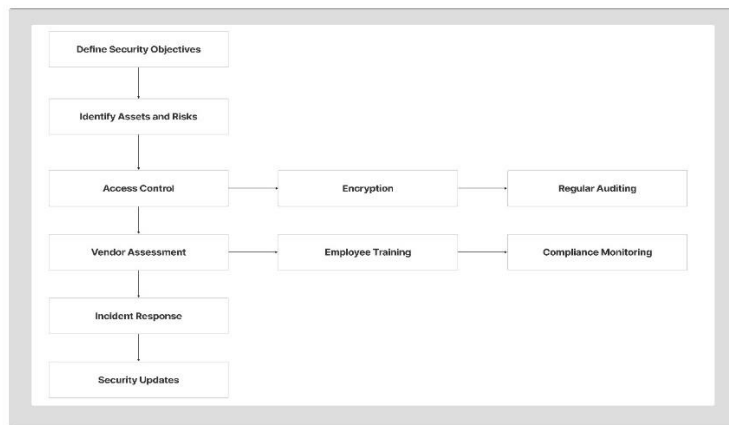
Figure 2. Proposed Algorithm of Cloud Architecture in Healthcare

8.   Discussion

In the field of healthcare, our research sheds light on the delicate interaction that exists between cloud computing, the many security concerns that exist, and state-of-the-art solutions. Cloud computing has a number of potential advantages, including improved scalability and efficiency; nevertheless, it also raises a number of challenging compliance and security concerns. For the purposes of minimizing risks and preserving the confidentiality of patient data stored in the cloud, the implementation of sophisticated security measures and best practices is an absolute need. In order to preserve the confidence of their patients and adhere to the most stringent data protection regulations, healthcare institutions must continue to be diligent and flexible in their data security efforts as cloud technology continues to advance.

9.   Conclusion

In this study paper, we examined the complex landscape of cloud security in healthcare and stressed the need of strong security and compliance in an age of data privacy and patient confidentiality. Cloud transfer of healthcare data and services offers scalability, accessibility, and cost-efficiency. However, data security, regulatory compliance, and the changing threat environment present several issues. Our analysis showed the importance of HIPAA, GDPR, and other healthcare rules in protecting patient data. Healthcare businesses must protect sensitive data while negotiating data exchange, interoperability, and consent management. Examined were data protection issues include identifying sensitive healthcare data, cyber security, and encryption. These issues highlight the necessity for data encryption, access limitations, and frequent security audits. Integrating security principles into DevSecOps was also investigated to proactively resolve vulnerabilities and improve healthcare cloud security. Cloud technology improves patient care, research, and operational efficiency in the digital age of healthcare. Healthcare businesses' resiliency in the face of regulatory and security concerns will be key to cloud-based solution adoption. Cloud service providers, healthcare institutions, and regulatory agencies must work together to realize the potential of cloud technology in healthcare while maintaining the highest data privacy and security requirements. This study concludes that healthcare cloud security is crucial. While issues remain, proactive steps and compliance may reduce risks and create a more secure and resilient cloud healthcare environment. Healthcare

firms must commit to patient data protection, regulatory compliance, and continual cloud security improvement as they move to the cloud.

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A Need of Integrating Cyber Security Curriculum in the Indian Education System

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Abstract
In today's world, technology is playing an imperative role especially in teaching and learning process. Among different useful technology of modern time, internet occupies the foremost place. Internet is not only useful in our daily life but also in our educational field. In educational field, internet helps students in gathering information of their various subjects and it also helps during their research. The teachers as well as students are using computer and mobile devices that enable them to access internet. In today's scenario students are preparing for their course exam or preparing for competitive exam through internet. Therefore, there is widespread use of internet access in education. This widespread use of internet access increases the exposure to cybercrime. It is now become essential in establishing greater awareness among students and teachers regarding this illegal internet activities and cybercrime. This awareness can be achieved with the contribution of textbooks and stakeholders. Cyber Ethics, Cyber –safety and cyber security issues need to be integrated in the educational process beginning at an early age. In this paper, the researcher focuses on the importance of cyber security in India and presents various measures in bringing awareness in education system. The objective of this systematic review paper is to explore why it is important for modern learners to be educated about the risks associated with being cyber space and the strategies that stakeholder can use to promote cyber security education in schools. This paper also help in educating students about cyber ethics and cyber safety

Key words –
Internet Usage, Cybercrime Awareness, Cyber security, Cyber ethics and Cyber education

1. Introduction

The information and communication technology has brought into focus, the use of computers, various media and internet in the area of education. It has become impossible to think of education without technology. Internet has grown rapidly. Teachers, students, investigators depends heavily on the internet for information. As Internet, its tool and applications are getting more and more popular among adolescents and youths, its usage in academic and learning sector is also developed favourably. That's why an increasing number of students are actively using Internet for instrumental purposes like information gathering, school work and social communication. According to needs, Internet provides documents and files, texts, images, graphics, audios as well as videos. Internet has also revolutionized the ways and means of imparting education. The online or distance education is largely and effectively facilitated by Internet.

Although Internet has potential and benefits for everybody but the excessive use of the Internet maybe harmful as it may lead to cyber risks for example sextortion, cyber addiction, gaming and gambling addiction, cybersex pornography and personal information exposure. Cybercrime against children and adolescents is certainly a concern for parents, as they sometimes do not realise their child is a victim of cybercrime. Many parents are unaware of those activities that are performed by the children in cyberspace. Some children are bullied through comments and insults. Children are becoming victims of sexual abuse as more and more of sexual predators are using fake identities on the internet when seeking victim.

The objective of cybersecurity education is to educate the users of technology on the potential risks they face when they are using internet communication tools such as social media, chat, online gaming, email and instant messaging. Although there are may past research has been conducted on cyber security, in different areas but less articles are published that are focused on the steps that need to be done particularly by schools in order to help cultivate cyber security awareness in detail.

2. Cybercrime

Cybercrime is criminal behaviour given over the web, for example, secret activities, Visa trick, spam and programming theft, and scattering of infections. In this way the instructor students who are presented to learning and abilities of ICT ought to likewise be made mindful of cybercrime occurring on the web. Cybercrimes are any criminal activities that are performed using networked computers or other networked devices as a medium. According to Florida international university, "Cybercrime is a criminal demonstration by methods for through on PC that happens over the web. " With an active and prolonged use of Internet, adolescents get engaged more and more in virtual social world leading to a complete neglect of real world. The more alarming fact is that in the majority of cases, children accessed pornographic sites unintentionally while searching information or pictures for learning activities. Thus, it can be said that such an easy exposure could have harmful effects on adolescent development as they are not yet developed a full maturity and could adversely affect their social and emotional development (Subrahmanyam et al. , 2006)

The increasing use of social networking sites as Facebook, Orkut etc. presents a real safety issues for teenagers. In fact, users use real identities, personal profiles and pictures on these networking sites. On the Internet, everything is connected only virtually, it is difficult to discriminate between real and fake. Malicious people and criminals can create fake identities to create a relationship, share personal information and then use this interaction to blackmail or exploit adolescents. Safety will be an issue as long as this online culture grows in popularity and socializing continues to be a priority for teens.

3.   Cyber security

Cyber security is a technological application, a process which controls and protect systems, Programs, networks, devices and data from cyber-attack. The aim of cyber security is to reduce the risk of cyber-attacks and protects data bases, data centers and applications. There are different network securities like firewalls, network segmentation and E-mail security which helps client in protecting their data and information. It also helps in keeping shared data secured as well as provides protection from cyber threats as we all are aware of the corona pandemic which had made a global impact in the past's months and continues to hit most of the sectors including educational sectors. The students are glued to computers and smartphones. They have entered into a new world of virtual lectures, tutorials and assessments. Therefore, there is necessity of integrating cyber safety, cyber ethics, and cyber-crime awareness in their educational process at an early age.

4.   Statement of the problem

The main theme of this paper is to highlights importance of cybersecurity by giving various example of cyber-crimes. This paper discusses about the need of educating modern learners about the cybercrime and the factors that hamper this education and the importance of cyber security curriculum that can be used by teachers in junior or primary schools, in the specific context of the Indian education system.

5.   Objectives of the paper

The main focus of this paper is to evaluate the importance of cyber security in education and it is necessary to teach students about cybercrimes and cyber security. For achieving this objective, the following research questions will be answered

Q1. What is the importance of cyber security?
Q2. What is the need of integrating cyber education in curriculum of Indian Education System?
Q3. What are the challenges and issues for cyber security education?

6.   Methodology

The main approach adopted by authors for writing this paper was a desk review of available empirical and conceptual literature on the importance of cyber security and on integrating cyber education in curriculum of senior secondary students. The researcher highlights research studies conducted in the field of cyber security in education. Multiple databases for example Google Scholar and Scopus were explored, using keywords such as cyber security, cyber safety, cyber education, cyber awareness, and cyber infrastructure and cyber ethics. The search was limited to studies published between 2012 until 2022. More than 200 studies were found, but only 30 studies were selected.

7.   Importance of cyber security:

The emergence of the internet allows humans to enjoy two realms, the first one is their life and the second one is the virtual world. All information about anyone is now available at people's fingertips with the help of search engines such as Google and Yahoo. However, the growing world of cyber space may also have negative effects on internet users, such as cybercrimes. Therefore, cybersecurity implementation among internet users is very important. Cybersecurity education is necessary because cybercrime cases can occur anywhere regardless of individuals, organization and places. Sometimes we commit cybercrimes without being knowing.

In India about all most every individual are using internet. According to 2021 census, the total number of internet user has risen 795. 18 million at the end of Dec 2020 to 825. 30 million at the end of March 2021, registering a quarterly growth rate of 3. 79% showed data by the Telecom Regulatory Authority of India (TRAI).

India has witnessed a significant jump in cybercrime reported in 2020 from the year 2012. From 2012 to 2020, the country had 50 thousand cybercrime cases. In 2020, in India, the state of Uttar Pradesh had the highest number of reported cybercrime cases. A major of these cases were registered under the IT act with the motive of defraud or sexually exploit victims. In 2017, India has loses over 18 billion US dollars due to cybercrimes. These are estimated as reported numbers.
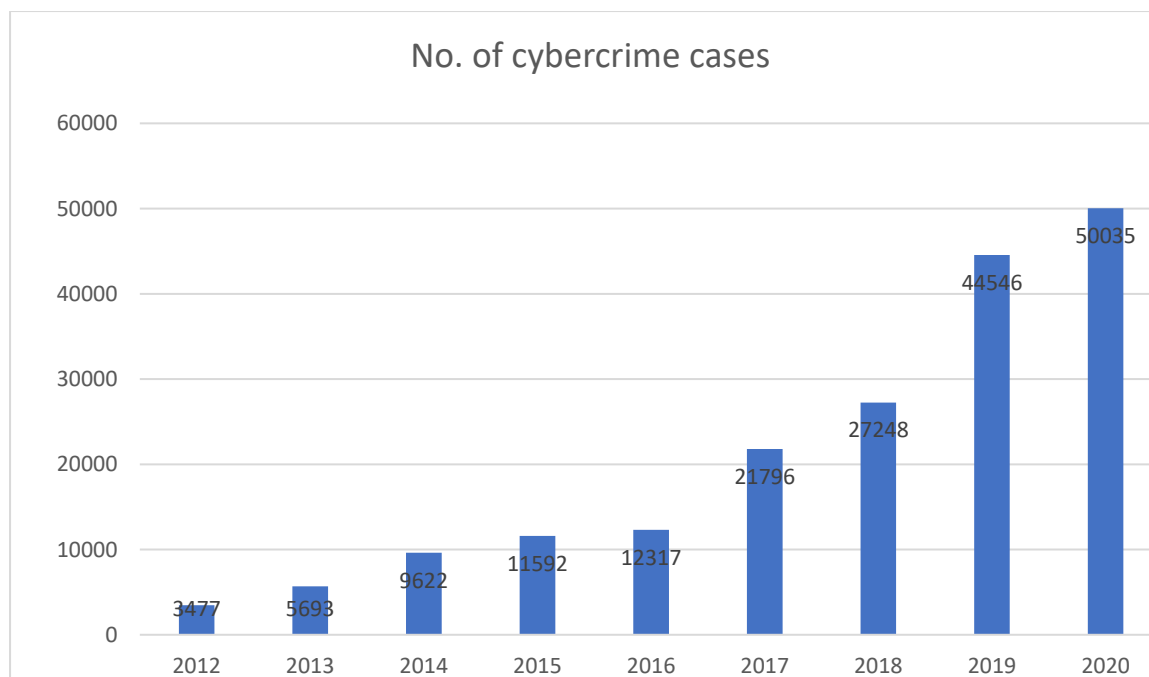
Figure 1. Shows increase number of cybercrime cases in India from 2012 – 2020

With the above statistics ensures that India as a fast growing country especially in the field of information technologies and Education sector has a high alert security for its online channels to monitor over frauds and financial losses. Cybersecurity is the state of being protected against the criminal or unauthorized use of electronic data, or the measures taken to achieve this.

8. Significance of cyber security in education sector

As we all know that education sector is continuously increasing on its digital transformation journey that is why schools, colleges and universities are becoming victim of cyber-attacks. There are many educational institutions who are victim of cyber-attacks in recent years. These institutes are facing cyber-attacks like ransomware attacks or data breaches. The corona pandemic has made a global impact in the past months and continues to hit most of the sectors, with education being one of the most affected ones. In India, educational institutions had adopted online teaching methods. Therefore, most of the students are glued to computers and Smartphone screens as teachers and students enter a new world of virtual lectures, tutorials, and assessments. It increases the threat of cyber-attacks. In fact, in the last month, according to Microsoft security intelligence, education was one of the most affected industry, encountering all most 64% of all malware attack, or more than 6. 2 million incidents. Online degree frauds are now very popular these days over internet where accredited online degrees are offered by fake Universities.

Cybersecurity education is also needed to control addiction to computer games. This addiction certainly has a negative impact Nighttime is spent browsing the internet, which will worsen the situation and may even cause teenagers to have health problems. These threats and attacks can come in many forms, and users are not always aware that they are being attacked. It is therefore essential to educate and empower users, especially children on the safe and responsible use of online resources and platforms to establish a culture of cyber safety.

9. Cyber security initiatives in India

The international cyber security standard (ISO 27001) had provided a model for establishing, implementing, operating, monitoring, reviewing, maintaining and improving an information security management system.

Legal framework for cyber security in India
1. Indian IT Act 2000
   ➢ Hacking & Computer offences comes under Section 66
   ➢ Tampering with computer source code comes under Section 65
   ➢ Tampering of electronic records comes under Section 43
2. Indian Copyright Act
States that any person who knowingly makes use of an illegal copy of computer program shall be punishable. Computer programs have copy right protection, but no patent protection.

3.   **Indian Penal Code**
  ➤ Punishment for criminal breach of trust comes under Section 406
  ➤ Cheating and dishonestly inducing delivery of property comes under Section
  ➤ 420.

4. Indian Contract Act, 1872
Offers following remedies in case of breach of contract, damages and specific performance of the contract.

10. Need to integrate cyber education in curriculum of Indian Education System

The internet as a tool for communication which has been used and misused for personal motives which resulted in cyber-attacks and cybercrime. In field of education, the students must be aware of these possible attacks. They should fully be acquainted about the frauds and scams like cyber theft, phishing and their historic records. They must have knowledge of all those types of malicious software and their preventive measures. The advance concepts like the safe use of social networking should be included in their curriculum. The students must also be aware of the terms like hardware security /, Wi –Fi security, password protection level security and malicious software. The students must know about social networking attacks security. According to Department of National Security, cyber security is defined as preventing, detecting and responding to attacks. Therefore, Indian education system needs to integrate cyber security awareness or education in curriculum.

Education and research were the most targeted sectors, with organizations facing an average of 1, 605 weekly attacks, an increase of 75 per cent. This was followed by government/ military with 1, 136 weekly attacks, registering a 47 per cent increase. Communications registered 51 per cent increase with 1, 079 weekly attacks and software vendors experienced the largest year-on-year growth (146 per cent), which goes hand-in-hand with the ever-increasing trend of software supply chain attacks observed in 2021. With a large number of attacks targeted critical infrastructure, cyber-attacks disrupted everyday life, and, in some cases, even threatened the sense of physical security.

11. Issues and challenges for cyber security education

Among various challenges, the biggest cyber challenges faced by education sector is an increased number of cyber-attacks that aims to steal personal information, extort data for money, or disrupt school's ability to operate. Cyber security education is an important and relevant topic as it plays a major role in mitigating the risks caused by a global shortage of cyber security experts. a cyber security skills framework needs to be agreed upon by academics in this field, along with an increase in the visibility of cyber security education and training, without these, there is likely to be a long-term shortfall between the number of skilled cyber security professionals and demand, potentially leaving organizations, institutions and government vulnerable.

In education system these are some challenges and issues

1. **Lack of lesson on cyber security** - No separate lessons for the cyber security awareness
2. **Inadequacy of awareness of cyber threats** - Stakeholders are not aware of the current threats in the information technology.
3. **Lack of training** - Teachers may face problems in developing their knowledge of the latest technology and thus ensuring students are safe.
4. **No information regarding various educational course -** Learners are not aware of the educational course on cyber security and so they do not make any effort to understand or learn the course.
5. **Lack of practical implementation –** Learners have the tendency to forget what they had learnt about information security if there is not practical implementation.
6. **No training and education program**- There is no such training and education programs is considering the present knowledge and experience of their target audience and the problem of "one size fits all" appear.
7. **Lack of complete and comprehensive education** – There is need of complete and comprehensive education of cyber security involves in all continuum of three levels of education.

12. Measures to be taken to overcome these challenges and issues

All students as well as teachers must be provided with the mock test, case studies, creating virtual environment so that they can discuss their problematic issues. The educators in all fields must be set in order to create more awareness about the current technologies and relevant threat with the help general awareness websites creation, PowerPoint slides, FAQ can be implemented in classroom teaching. The students must be knowing all the ethics of internet usage like –

❖ A person who is reading the confidential content is consider as Intruder, hacker or impersonators
❖ Stealing information through internet is known as cybercrime, cyber theft, and phishing.
❖ A cybercrime which deceives people into giving their banking details is also phishing, spyware, hacking.
❖ Accessing accounting details of an individual and using it for information is impersonation, snooping, spoofing.

13. Conclusion

Cyber security is major issue of growing country like India. Cybersecurity awareness is essential at all levels. Cybersecurity knowledge is needed, not only for the students but also for the educators as well as organizations. The emergence of the internet and also the use of various online applications and the exposure to the social platforms that are evolving day by day have positioned students to online risk that is why cyber security awareness program should be organized in school and college. Thus, there is need of cyber security curriculum in the near future which will in build the cyber security understanding in the current youth. The introduction of cybersecurity at the school levels helps children to acquaint themselves with the concept of cyber security at a very early stage. It will set the ground to mentally prepare and familiarise them with the growing needy of cybersecurity and even explore suitable career opportunities in it. The demand for cybersecurity jobs has been steadily increasing and many tech giant companies have a huge demand for cyber security experts. it is very important for all stake holders to work together to find the best solution for protecting children from cybercrime and cyber bulling through school based cyber security education. The Medias such as television and radio, must also play an important role in educating children through cybersecurity campaigns because such campaigns are more interactive and interesting for learners to understand. There is need of planning of effective cyber security policies and best practices which should be implemented at all levels. In the future, the government role and education systems participate together will definitely lead to a strongly secured nation.

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Faculty Exit from Academia - A Review

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Abstract

The escalation of faculty exit from academia has continued to trend upwards. The present study's aim was to gather knowledge about the factors related to the faculty for leaving academia. The circumstances associated for the faculty exit were high exhaustion, low salary, difficulty in work-lifebalance, low quality of research facilities, effort-reward imbalance. Furthermore, depression and anxiety were two major contributors towards the exit of faculty from the education institution. To retain the faculty, academic institutions should provide support and healthy working atmosphere.

1.   Introduction

The word Academia is concerned with the pursuit of research, education and scholarship within anenvironment. According to Cambridge Dictionary the term Academia refers to *the part of society, especially universities, that is connected with studying and thinking, or the activity or job of studying.* Academia is responsible for imparting systematic professional guidance and training to students to become professionals in their choice of field. They produce doctors, teachers and engineers; entrepreneurs, social workers, artists and scientists. Adults who have academic achievements are more likely to have a stable life with multiple employment opportunities, have a stable environment at home and at work, have steady income, have health insurance, less involved in criminal activities, active citizens, actively take part in charitable institutions and are healthier and happier.

According to Cambridge dictionary the term Faculty refers to *the people who teach in a university, college, or school or in one of it's departments.* Faculty members are a central and critical ingredient to the quality of an academic institution. Faculty members are directly related to the taskof applying their knowledge in service to teaching the students, conducting research within the university or college. A good quality teacher's personality is warm, friendly, approachable, sympathetic, dedicated and motivated. Teaching-Learning process is two-way process. It is important to have a two-way communication between the faculty member and the student in order to achieve the goal of the teaching-learning process.

Much remains to be learned about how faculty roles and responsibilities are changing, how these changes vary for individuals and by discipline and institution type, and how to best support facultyin carrying out their work.

2.   Need and Significance of this study

Recent changes and unprecedented movement within the education sector, magnified by the COVID-19 pandemic, has led the faculty members to reevaluate career goals and alternative employment opportunities due to employee dissatisfaction. The need to study about faculty exit is as important as the need to hire them. The causes, patterns and costs involved with faculty exit from academia are need to be understood in depth. After analyzing and studying the causes we can develop strategies and standards across institutions to help prevent the faculty exit from academic institutions.

People who are interested in academia and research, becoming a faculty member at an academic institution can be a rewarding experience. However, every job has its own advantages anddisadvantages which one experiences on their professional journey.

The Benefits of Being a Faculty in an academic institution:-
1. **Research-** Freedom to choose research topics, conduct research, choose appropriatemethodologies and apply for grants during their entire tenure.
2. **Teaching-** Teaching can be a highly rewarding job. A professor's main job is to teach and guide the students according to the materials available related to their field. It is the professorwho shapes and inspire the next generation of academics.
3. **Sabbaticals-** Professors can go on sabbatical leave after working with an institution for a said number of years. They have the opportunity to take a break for a few months or even a year toengage in professional activities such as international researchers, writing and other projects. They know they can return to their regular job once they are done.
4. **Travel-** There are multiple opportunities to travel all over the world for conferences or researchvisits.
5. **Flexibility-** Working hours in academia are flexible as compared to the other professions which enables the professors to conduct and carry researches, seminars, workshop whichbenefits the students.

3.   Major Reasons for Faculty Exit from Academia:-

1. **Unstable Work Environment-** Conflicts within the department and shortage of colleagues in the same research area were increasing which made their relationships within the departmentsour and also increased their difficulty in carrying out research projects.

2. **Low Quality of Research Facilities-** The exiting faculty mentioned that their own research interests and the university's research interests were not at par with regards to the support andenthusiasm which lacked on behalf of the university. Hence, they moved on with another academic institution which provided positive support for research.

3. **Less Role in Review Procedures and Decision Making-** Raised concern about their role indecision making when it came to higher-level administrative policies and were less than moderately satisfied with their limited role in decision making at university level.

4. **Low Salary-** Salary inequities within the department are a major concern for some people. They judge their value based on the university and how much the university makes. Facultymembers see less or equally productive colleagues earn more. Salary was by far and awayone of the strongest factor for faculty to leave their roles.

5. **Job Dissatisfaction-** The exiting faculty became aware of the discrepancy between the realityof the university and their own expectation of it. However, they could still see value in their experience at the university and their faculty position.

6. **Places for relocation and reasons for choices-** The exiting faculty stayed consistent with complaints about the cultural and social area which usually hindered their research projects. Moving to a better location provided them with better salary, more emphasis on teaching andbetter location to carry out research projects.

FACULTY RETENTION AND EXIT SURVEY – ALL DATA*	Reasons to Leave	Reasons to Stay
Salary	33%	18%
Quality of colleagues	20%	22%
Department or institution reputation	22%	14%
Potential for professional growth and intellectual stimulation	20%	8%
Proximity to family	14%	13%
Employment opportunity for spouse/partner in the region	13%	10%
Opportunity to collaborate with colleagues	11%	11%
Collegiality within the department	9%	13%
Cost of living	9%	11%
Availability of cultural, social, or recreational activities	9%	10%
Prospects for tenure, promotion, or contract renewal	8%	11%
Potential for work-life balance	10%	8%
Quality of academic leadership	13%	4%
Quality of graduate students	8%	9%
Quality or quantity of research infrastructure	10%	6%

*2021–22

Source: COACHE Faculty Retention and Exit Survey, Harvard University, 2021-2022

4.   Methods to adopt for faculty retention:-

1. **Increase pay-** Professors should be given salary according to their previous work. Qualityshould be taken into place alongside quantity.

2. **Reduce workload-** To reduce the workload for professors the university should hire more people and divide the work amongst the faculty members to ensure high quality work with maximum quantity. This will reduce the burnout and stress and will ensure faculty retention.

3. **Research opportunities-** The university should provide sufficient tools for research inacademics. The university should be equipped to conduct national and international conferences, seminars and workshops to build strong network.

4. **Work-life balance-** Professors often struggle to maintain a healthy work-life balance due to thedemands of their job. They should be able to have sufficient time off for themselves and their family. University timings and work should be revised if needed.

5. **Recognition-** Faculty member should be given praise as and when needed and their efforts need to be appreciated. If the institution takes their of their employees then their students willautomatically be taken off.

6. **Professional development-** Seminars or workshops should be held regularly for the academic faculty only. This will help the faculty members morale and will increase theirproductivity.

7. **Work environment-** The university should from time to time counsel each faculty members separately and

also together to maintain a healthy and a friendly environment. There should bedepartmental activities for faculty members only and they should be encouraged with love and care. This will ensure a positive and a healthy environment amongst the faculty.

5.   Review of Literature related to Faculty Exit From Academia

1. Kiss et al. (2022) investigated the process of *"Leaving academia: PhD attrition and unhealthy research environments"* in which it was concluded that while some candidates had positive support, environment and sufficient supervision whereas, the other section of candidates experienced lack of time and support, insufficient supervision and questionable research practicesand the later considered leaving academia for good.

2. Lewis et al. (2022) studied the process of *"Leaving the Institution or Leaving the Academy? Analysing the Factors that Faculty Weigh in Actual Departure Decisions"*. The author conducted asurvey on 773 departing faculty respondents and it concluded with the result that gender, salary increase and faculty position were big factors related to the faculty exit.

3. Magdaleno et al. (2022) studied the process of *"A Qualitative Review of Comments by FacultyWho Cite Work-Life Balance as a Reason to Leave"*. To improve faculty retention, institutional leaders should focus on developing mentors' career coaching and mentoring skills. Additional focus should be placed on training mentors to discuss and address their faculty mentees.

4. Schmiedehaus et al. (2022) studied the process of *"The great resignation in higher education:An occupational health approach to understand intentions-to-quit for faculty in higher education"* in which the aim was to recognise the factors responsible for faculty exit. The result for the abovewas low perceived organisational support, high exhaustion, and low compassion satisfaction.

5. Alemu et al. (2020) studied the process of *"To Leave or to Stay: Faculty Mobility in the Middle East"* and concluded that the intention to stay is affected by factors both external and internal to theinstitution such as positive research environment, region where they work, and overall job satisfaction.

6. Bramlage et al. (2020) studied the process of *"When enough is enough: modelling the path from unreasonable tasks to the intention to leave academia"*. The results of the research revealed that unreasonable tasks have a negative effect on the outcome of the work of a faculty member. This may lead to exhaustion and then the intention to leave academia.

7. Sood et al. (2020) studied the process of *"Exiting Medicine Faculty-Want the Organizational Culture and Climate to Change"*. The results of this research revealed that the exiting faculty often spoke about the change in organisational and leadership change in climate and culture. To retain faculty leaders need to change or modify the organisational climate and culture components.

8. Dorenkamp et al. (2017) studied the process of *"What makes them leave? A path model of postdocs' intentions to leave academia"*. A growing number of postdoctoral academics raise concern for stressful working environment and extreme exhaustion and therefore leaving theacademic profession entirely before they obtain a tenured position. Additional analyses reveal significant gender differences: The relationship between overcommitment and strain is stronger for female postdocs than it is for male postdocs, and the direct link between work stress and the intention to leave academia applies only to female postdocs.

9. Meara et al. (2016) studied the process of *"To Heaven or Hell: Sense-making about Why FacultyLeave"*. This study revealed four dominant explanations for faculty exit. Dominant explanations included better opportunities, the likelihood the faculty member would not get tenure, family and geographic reasons, and work environment.

10. Nielsen (2016) studied the process of "*Reasons for Leaving the Academy: a Case Study on the'Opt Out' Phenomenon among Younger Female Researchers"*; this study provided new insightsinto the myriad of structural and cultural conditions circumscribing the career ambitions and expectations of younger female (and male) researchers, at a critical transition point epitomised byhigh demands for scholarly productivity, international mobility and accumulation of social capital.

11. Gonzalez et al. (2015) studied the process of *"Intention to Leave Academia and Job Satisfaction Among Faculty Members: An Exploration Based on the International CAP Survey"*. A binary logistic regression model was built to explore the variables related to this issue. Results showed that job satisfaction as well as adequate working conditions played major roles for the exiting faculty members. Furthermore, the studied showed that young working professional were quick to judge and leave than senior faculties.

12. Yedidia et al. (2014) studied the process of *"Association of Faculty Perceptions of Work–Life With Emotional Exhaustion and Intent to Leave Academic Nursing: Report on a National Survey of Nurse Faculty"*. In this study it was clear that the faculty reported increased level of exhaustion andone third expressed the intent to leave academic within 5 years. Major factors that contributed to exhaustion was workload and work-life imbalance.

13. Dryfhout et al. (2012) studied the process of *"Explaining the gender gap in professors' Intentions to leave"* showed that Using data from the National Survey of Postsecondary Faculty 1999 (NSOPF 99), we examine family, social control, and work explanations for intentions to leave.Findings show that gender is significantly related to intentions to leave, and women are more likely than men to intend to leave their jobs.

14. Gardner (2012) studied the process of *"I Couldn't Wait to Leave the Toxic Environment"*. The findings concluded that from an institution-wide survey and interviews with women faculty who had left the institution resulted in several factors. These factors are lack of support, insufficient leadership, work-life imbalance, negative institutional and departmental environments.

15. Altunoglu et. al. (2011) studied the process of *"Effects of burnout and job satisfaction on intention to leave"*. The findings showed that faculty members who were dissatisfied with their job for various reason, quit their jobs. On the contrary, the research data also suggested that those faculty members with higher levels of satisfaction were less likely to leave their institution or their career.

16. Ryan et al. (2011) studied the process of *"Oh, won't you stay? Predictors of faculty intent to leave a public research university"*. This study examined the relationship between various research-based factors and faculty intent to leave. Key predictors for faculty having considered leaving academia altogether were being in an environment with minimal support, stress of raising afamily, dissatisfaction with job.

17. Watlington et al. (2010) studied the process of *"The High Cost of Leaving: An Analysis of the Cost of Teacher Turnover"*. This research reveals that when high-quality teachers leave theclassroom, the effect on both student performance and school and district fiscal operations is significant and deleterious. It concludes with recommendations for future research and policy reform, and encourages the increased use of teacher attrition cost measurement tools in schools and school districts.

18. Rosser (2004) studied the process of *"Faculty Members' Intentions to Leave: A National Study on Their Work-life and Satisfaction"* the results indicate that a work-life balance is a must. The exiting faculty left their job due to work-life imbalance for another position and/or career alternative.

19. Barnes et al. (1998) studied the process of *"Effects of Job-Related stress on faculty intention toleave academia"* Based on data from a national faculty survey of 3,070 full-time tenure-trackfaculty, results indicated two major factors responsible for intent to leave academia were time commitment and sense of community.

20. Weiler et al. (1985) studied the process of *"Why do faculty members leave a university?"*. The results indicated that the probability of accepting an outside offer is positively related to theexpected salary gain. The exiting faculty was offered more salary in another institution as compared to the institution he was working at.

6. Conclusion

This paper reviews several articles by leading academician to understand in-depth knowledge about the reasons for faculty exit from academia. A large number of factors have found to be associated with the same. Salary and job dissatisfaction are the main two reasons. This minireview discusses these findings in the context of larger ongoing debate about the faulty exit from academia and offers suggestions for improving retention and productivity of the faculty.

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Bramlage et al. (2020) *"When enough is enough: modelling the path from unreasonable tasks tothe intention to leave academia"* the journal of European Journal of Higher Education https://www.tandfonline.com/doi/full/10.1080/21568235.2021.1873160

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Ryan et al. (2011) *"Oh, won't you stay? Predictors of faculty intent to leave a public researchuniversity"* the journal of Research Highlights Pathology by springer https://link.springer.com/article/10.1007/s10734-011-9448-5

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Influence of Teacher-Student Relationships on Academic achievements: A Review Study

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1. INTRODUCTION

Meaning:
Teacher-student relationships can have a significant impact on academic achievement. Positive relationships can lead to increased engagement and cooperation in the classroom. Students who feel a sense of belonging and connection to school may be more likely to achieve academic success.

The teacher-student relationship is the positive relationship between the student and the teacher in a learning environment. This relationship is built on trust and mutual respect and has a role to play in helping the students acquire the desired level of academic success. A positive teacher-student relationship not only motivates the students but also helps them in building their confidence.

Why is Teacher-Student relationship is Important?
On average, a student spends around 180 days a year with a teacher. So, the students need to share a positive relationship with the teacher. This relationship will act as a source of motivation for the students. The students will feel comfortable in the presence of the teacher. This will make their learning experience an interactive one. The students can organically evolve into confident individuals and active learners. Even nursery schools should focus on teacher-student relationships so that the students can acquire their lessons in a positive environment from an early age.

The Role of Teacher-student Relationships in Academic Success
Research findings on the impact of positive teacher-student relationships on academic success: Recent studies conducted on the students studying in schools in India have shown that the students who share a healthy relationship with their teachers tend to perform better academically. A study published in the Journal of Educational Psychology revealed that the students who shared a strong bond with their teachers achieved better grades in their exams.

The effect of Negative teacher-student Relationships on academic performances and Engagement
The relationship between a teacher and a student is very sensitive. Any negativity in the teacher-student relationship can negatively impact the academic performance of the students. It can also lead to reduced engagement in the classroom. The students tend to miss their classes more frequently. They also start to suffer from stress and anxiety.

Factors That influence teacher-student Relationships
- **Classroom environment:** A good environment always plays a key role in shaping a student's future. Students are more attentive in a positive classroom environment. They also share their opinion with the rest of the class more freely.
- **Teacher beliefs and attitudes**: The approach of a teacher towards the student is another essential factor for building positive teacher-student relationships. With the students see that their teacher has a positive attitude toward them, they feel more encouraged in class.
- **Student characteristics:** The students' characteristics which include their academic ability and their behaviour in the classroom, can impact the teacher-student relationship to a great extent. If the students feel more motivated in the classroom, they are more likely to perform better in the examination.

Strategies for improving teacher-student Relationships
- **Creating a positive classroom environment:** If the students are treated with love and respect in their classroom, they feel more encouraged to participate in various classroom activities. They will take their lessons more seriously.
- **Building trust and rapport with students:** Sharing a relationship of trust and respect with the students can help the teachers in bringing out the best in their students. The teachers should also encourage the students to participate in various extracurricular activities.
- **Using effective communication and feedback:** The teachers should communicate with their students in such a way that they feel valued. They should also take regular feedback from the students. Making effective communication with the children is a must at some of the most reputed boarding schools in Bangalore.
- **Fostering a growth mindset:** By fostering a growth mindset, teachers can easily help students to learn from their mistakes. The students should also be able to ask questions without being judged.

Objectives

The main goal of the study was to test the predictive value of teacher-student relationships and achievement motivation on dropout intentions of students from different socio-economic status. Firstly, we tested positive and negative relationships as predictors of the intention to dropout. Then, we tested interest for school material, competence beliefs and perceived school utility as predictors of the intention to dropout. Finally, we determined if the predictors of the intention to dropout were the same for students from low and high socio-economic status schools, while considering gender.

Steps

Step 1: Controlling for Gender, Age, and Introducing SES
Step 2: Predictive Value of Teacher-Student Relationships
Step 3: Predictive Value of Achievement Motivation
Step 4: Interaction Effects With SES

A negative relationship with teachers remains the strongest predictor of high intentions to dropout for most students. Moreover, high competence beliefs in math are significant in preventing dropout intentions for students and mostly, for those from high SES schools, despite of all achievement motivation's variables. Comparing low SES students to those from high SES, the gender effect is consistent with the literature. For low SES boys, who are more affected by dropout, our model is probably not well specified and lacking some predictors. For example, lineal SES indicator combined with regression method of analysis could prevent detection of non-lineal dropout phenomenon, occurring mostly in lowest SES neighbourhoods and which can be explained by the epidemic theory (Crane, 1991; Jencks & Mayer, 1990).

2. Review Literature

STUDY – I
Name: The effects of the teacher–student relationship and academic press on student engagement and academic performance
Author: Jung-Sook Lee
Date of Publish: 15 May 2012
Journal: International journal of Educational Research
Reference Link: https://doi.org/10.1016/j.ijer.2012.04.006
Cite: Lee, J. S. (2012). The effects of the teacher–student relationship and academic press on student engagement and academic performance. *International Journal of Educational Research*, *53*, 330-340.
Conclusion: There has been a debate over the importance of academic press and supportive school environments to achieve best student outcomes. The findings of the current study partially supported the advantage of authoritative schools with both demandingness (i.e., academic press) and responsiveness (i.e., the teacher–student relationship). It was also found that the effects of the teacher–student relationship on student outcomes were not contingent on academic press of the school.

STUDY – II
Name: The Relationship between Teacher-Student Relationship and Academic Achievement: The Mediating Role of Self-Efficacy
Author: Xu, ZhuZhu; Qi, Chunxia
Date of Publish: 2019
Journal: EURASIA Journal of Mathematics, Science and Technology Education
Reference Link: https://eric.ed.gov/?id=EJ1302577
Cite: Xu, Z., & Qi, C. (2019). The Relationship between Teacher-Student Relationship and Academic Achievement: The Mediating Role of Self-Efficacy. *EURASIA Journal of Mathematics, Science and Technology Education*, *15*(10).
Conclusion: First, there are certain gender differences and regional differences in the teacher-student relationship. Girls are better than boys, urbans are better than counties and towns, and counties and towns are better than rural areas, but they have no practical significance. There is no gender difference in students' self-efficacy. However, there are certain regional differences in self-efficacy; and there are certain gender differences and regional differences in mathematical achievement. Girls are higher than boys, urbans are higher than counties and towns, and counties and towns are higher than rural areas, though they have no practical significance. Second, teacher-student relationship can significantly affect mathematical achievement, and has a positive predictive effect; self-efficacy also has a significant positive predictive effect on mathematical achievement, and its impact on mathematical achievement is greater than teacher-student relationship. Third, for mathematics, self-efficacy plays

a part in mediating between teacher-student relationship and academic achievement, and the ratio of mediating effect to total effect is 68%.

STUDY – III
Name: Teacher-student relationship factor affecting motivation and academic achievement in ESL classroom
Author: *Melor Md Yunus*
Date of Publish: 10 June 2011
Journal: Procedia – Social and Behavioral Sciences
Reference Link: https://doi.org/10.1016/j.sbspro.2011.04.161
Cite: Yunus, M. M., Osman, W. S. W., & Ishak, N. M. (2011). Teacher-student relationship factor affecting motivation and academic achievement in ESL classroom. *Procedia-Social and Behavioural Sciences*, *15*, 2637-2641.
Conclusion: Factors such as academic achievement and student motivation are influenced by the quality of the relationship that the students and teachers have with each other. From the findings, it seems that the respondents are aware of its importance and roles in their duties as teachers. The process of completing the study itself invokes realizations and awareness among the respondents. Positive relationship improves student behaviour and motivation to learn as well as their academic achievement. Such vital key to successful learning and teaching conduct should be emphasized more at higher level, so that future teachers are equipped with the right mindset when they venture into school. As so rightly stated by Rhodes, Grossman and Resch (2000), teachers' roles is to provide a safe context for support and guidance for the students.

STUDY – IV
Name: Teacher–student relationship and academic achievement: a cross-lagged longitudinal study on three different age groups
Author: Katja KOŠIR, Sara Tement
Date of Publish: 25 September 2013
Journal: European Journal of Psychology of Education
Reference Link: https://link.springer.com/article/10.1007/s10212-013-0205-2
Cite: Košir, K., Tement, S. Teacher–student relationship and academic achievement: a cross-lagged longitudinal study on three different age groups. *Eur J Psychol Educ* **29**, 409–428 (2014)
Conclusion: The aim of the present study was to test three competing models that hypothesized directionality of influence in relations between teacher acceptance, student-perceived teacher support, and academic achievement.

STUDY – V
Name: Effect of Teacher-Student Relationship on Pro-Social Behavior and Academic Achievement of Secondary School Students
Author: Dr. Imran Abbas Jadoon, Dr. Faisal khan, Syeda Tehmina Naz Bukhari, Dr. Uzma Syeda Gilani, Umer Ishfaq, Dr. Mahboob Ullah
Date of Publish: 09 February 2022
Journal: Indian Journal of Economics and Business
Reference Link: http://www.ashwinanokha.com/resources/ijeb%20v21-1-2022-25.pdf
Cite: Jadoon, A. I., Khan, F., Syeda Tehmina Naz Bukhari, N. T. S., Gilani, S. Z., Ishfaq, U., & Ullah, M. (2022). Effect of teacher-student relationship on pro-social behavior and academic achievement of secondary school students. *Indian Journal of Economics and Business*, *21*(1), 331-337.
Conclusion: Teachers use positive relations with their students. This implies that there is a strong positive relationship between teachers and students. This also implies that the relationship is based on the principles of love, affection and trust where there is greater understanding among the teachers and students. Furthermore, teacher- student relation is a strong predictor of pro-social behavior of the students. This implies that if the relationship of teachers with the students is positive and close, students would show positive attitudes towards school which is an indicator of prosocial behavior. Additionally, students- teachers relation is a profound predictor of academic achievement. It implies that as teacher- students relationship is improved, the academic achievement is also enhanced as vice- versa.

STUDY – VI
Name: Linking Teacher-Student Relationship to Academic Achievement of Senior High School Students
Author: Bismark Mensah, Eric Koomson
Date of Publish: 20 June 2020
Journal: Social Education Research
Reference Link: https://doi.org/10.37256/ser.122020140

Cite: Mensah, B., & Koomson, E. (2020). Linking teacher-student relationship to academic achievement of senior high school students. *Social Education Research*, 102-108.

Conclusion: Students' level of academic engagement and achievement at any level of education is partly knit to the kind of relationships that exist between them and their teachers. The study revealed that connectedness, dependent, peaceful and conflicting teacher-student relationships prevail in Senior High Schools. However, administrative restrictions, and certain attitudes of teachers and students impede the development of effective teacher-student relationship. Whereas positive relationships create environments that augment academic achievement, threatening relationships stifle academic achievement. Teachers should deliberately express concerns both about students' academic and non-academic life, as this makes the latter feel accepted and motivated to improve academic work.

STUDY – VII
Name: Dynamics of Teacher–Student Relationships: Stability and Change Across Elementary School and the Influence on Children's Academic Success
Author: Jantine L. Split, Jan N. Hughes, Jiun-Yu Wu, Oi-Man Kwok
Date of Publish: 12 April 2012
Journal: Child Development
Reference Link: https://doi.org/10.1111/j.1467-8624.2012.01761.x
Cite: Spilt, J. L., Hughes, J. N., Wu, J. Y., & Kwok, O. M. (2012). Dynamics of teacher–student relationships: Stability and change across elementary school and the influence on children's academic success. *Child development*, *83*(4), 1180-1195.

Conclusion: This study modeled teacher–student relationship trajectories throughout elementary school to predict gains in achievement in an ethnic-diverse sample of 657 academically at-risk students. Teacher reports of warmth and conflict were collected in Grades 1–5. Achievement was tested in Grades 1 and 6. For conflict, low-stable (normative), low-increasing, high-declining, and high-stable trajectories were found. For warmth, high-declining (normative) and low-increasing patterns were found. Children with early behavioral, academic, or social risks were underrepresented in the normative trajectory groups. Chronic conflict was most strongly associated with underachievement. Rising conflict but not declining Conflict coincided with underachievement. The probability of school failure increased as a function of the timing and length of time children were exposed to relational adversity.

STUDY - VIII
Name: Teacher-student relationship quality and academic achievement in elementary school: A longitudinal examination of gender differences
Author: Daniel B. Hajovsky, Benjamin A. Mason, Luke A. McCune
Date of Publish: 23 April 2017
Journal: Journal of School Psychology
Reference Link: https://doi.org/10.1016/j.jsp.2017.04.001
Cite: Hajovsky, D. B., Mason, B. A., & McCune, L. A. (2017). Teacher-student relationship quality and academic achievement in elementary school: A longitudinal examination of gender differences. *Journal of school psychology*, *63*, 119-133.

Conclusion: Multiple group longitudinal cross-lagged panel models were implemented to understand the directional influences between teacher-student closeness and conflict and measured math and reading achievement across elementary grades and gender groups using the National Institute of Child Health and Human Development longitudinal sample.

STUDY - IX
Name: The effects of the teacher-student relationship, teacher expectancy, and culturally-relevant pedagogy on student academic achievement
Author: Caballero, Jay Andre R.
Date of Publish: May 2010
Journal: ProQuest
Reference Link: https://www.proquest.com/openview/3f9ec992b894945104c081a225a60ab7/1?pq-origsite=gscholar&cbl=18750
Cite: Caballero, J. A. R. (2010). *The effects of the teacher-student relationship, teacher expectancy, and culturally-relevant pedagogy on student academic achievement* (Doctoral dissertation, University of Redlands).

Conclusion: Effective classroom instruction is said to be predicated on solid core content knowledge and delivery by the teacher. Often left out of discussion of what effective classroom instruction looks like is the way a teacher interacts with the student in a positive manner, the expectation level of the teacher, and the teacher's incorporation of multiculturalism within the academic program. The purpose of this study is to determine whether or not the

practices of creating a positive relationship with the student, having an encouraging disposition towards students, and establishing a learning environment steeped in multiculturalism and diversity have a direct impact on the academic achievement of the student as measured by the California Standards Test

STUDY - X
Name: The Impact of Lecturer-Student Relationship on Self-Esteem and Academic Performance at Higher Education
Author: Sylvester Dodzi Nyadanu, Mirrielle Yayra Garglo, Timothy Adampah, Rachel Libline Garglo,
Date of Publish: 2015
Journal: Journal of Social Science Studies

Reference Link: https://www.researchgate.net/profile/Sylvester-Nyadanu/publication/315340930_The_Impact_of_Lecturer-Student_Relationship_on_Self-Esteem_and_Academic_Performance_at_Higher_Education/links/5a8d6c46a6fdcc6e9714214d/The-Impact-of-Lecturer-Student-Relationship-on-Self-Esteem-and-Academic-Performance-at-Higher-Education.pdf
Cite: Nyadanu, S. D., Garglo, M. Y., Adampah, T., & Garglo, R. L. (2015). The impact of lecturer-student relationship on self-esteem and academic performance at higher education. *Journal of Social Science Studies*, *2*(1), 264-281.
Conclusion: The study generally revealed that only two of the lecturer-student relationships were perceived by the respondents to be in positive direction or as good relationship (80% connectedness and 64.2% less threatening relationships) but 68.8% conflicting and independent of 71.7% relationships were rather bad or negative relationships. Although statistically not significant (p > 0.05), the study showed that high academic and high level attaining students generally reported having negative relationship with their lecturers such as less connected, more independent and more conflicting relationships. Possibly because the high self-esteem, however, promotes attainment of better class with progress in academic years.

STUDY - XI
Name: Thick Description of the Teacher-Student Relationship in the Educational Context of School: Results of an Ethnographic Field Study
Author: Raufelder, Diana; Bukowski, William M.; Mohr, Sonja
Date of Publish: October 2013
Journal: Journal of Education and Training Studies
Reference Link: https://eric.ed.gov/?id=EJ1054830
Cite: Raufelder, D., Bukowski, W. M., & Mohr, S. (2013). Thick description of the teacher-student relationship in the educational context of school: results of an ethnographic field study. *Journal of Education and Training Studies*, *1*(2), 1-18.
Conclusion: Analyses showed that meaningful ritualized structures limit teachers and students to institutional roles that are incongruent with the general aim of having productive interactions in educational settings. The complexity of educational settings can only be grasped if the teacher-student relationship is understood as an interpersonal process. When reduced to their institutional roles, both teachers and students experienced their relationship and educational settings as unsatisfactory.

STUDY - XII
Name: Teacher-Students' Relationship and Students' Academic Performance in Public Secondary Schools in Magu District, Tanzania
Author: Mahona Joseph Paschal, Demetria Gerold Mkulu
Date of Publish: April 2020
Journal: Journal of Research in Education and Society
Reference Link: https://osf.io/preprints/africarxiv/tmh9c/
Cite: Paschal, M. J., & Mkulu, D. G. (2021). Teacher-students' relationship and students' academic performance in public secondary schools in Magu District, Tanzania.
Conclusion: This study explored the influence of teacher – students' relationship on students' academic performance in Tanzania using Magu District as a case study. The sample for this study was 130 respondents that were drawn from six public secondary schools both by using rondom sampling and purposive sampling; 6 school Heads, 57 teachers, 66 students and one District Educational Officer.

STUDY - XIII
Name: Teacher–child relationships and academic achievement: A multilevel propensity score model approach
Author: Meghan P. McCormick, Erin E. O'Connor, Elise Cappella, Sandee G. McClowry
Date of Publish: 24 May 2013

Journal: Journal of School Psychology
Reference Link: https://doi.org/10.1016/j.jsp.2013.05.001
Cite: McCormick, M. P., O'Connor, E. E., Cappella, E., & McClowry, S. G. (2013). Teacher–child relationships and academic achievement: A multilevel propensity score model approach. *Journal of school psychology*, *51*(5), 611-624.
Conclusion: A robust body of research has identified associations between high-quality teacher–child relationships—characterized by high levels of closeness and low levels of conflict—and children's academic achievement in elementary school. To address this need, we used multilevel propensity score models to estimate the effects of high-quality teacher–child relationships in kindergarten on standardized measures of student math and reading achievement in first grade in 22 urban elementary schools. We hypothesized significant effects of high-quality teacher–child relationships on math and reading achievement.

STUDY - XIV
Name: Influence of the teacher-student relationship in childhood conduct problems: A prospective study
Author: Jan N. Hughes & Timothy A. Cavell
Date of Publish: 07 June 2010
Journal: Journal of Clinical Child Psychology
Reference Link: https://doi.org/10.1207/s15374424jccp2802_5
Cite: Hughes, J. N., & Cavell, T. A. (1999). Influence of the teacher-student relationship in childhood conduct problems: A prospective study. *Journal of clinical child psychology*, *28*(2), 173-184.
Conclusion: Examined the influence of the quality of the teacher-student relationship on children's subsequent levels of aggression in a sample of 61 second and third-grade children nominated and rated by teachers as aggressive. The stability of teachers' and children's reports of relationship quality across academic years was in the low to moderate range. Teachers and children showed little agreement in their reports of relationship quality.

STUDY – XV
Name: Two decades of research on teacher–student relationships in class
Author: Theo Wubbels, Mieke Brekelmans
Date of Publish: 11 May 2006
Journal: International Journal of Educational Research
Reference Link: https://doi.org/10.1016/j.ijer.2006.03.003
Cite: Wubbels, T., & Brekelmans, M. (2005). Two decades of research on teacher–student relationships in class. *International journal of educational research*, *43*(1-2), 6-24.
Conclusion: The studies reviewed in this paper showed that the QTI is a useful research tool, but research on the QTI as a feedback instrument for teachers is insufficient to prove its usefulness. The QTI meets the standards of the American Evaluation Association (1999) for accuracy, reliability and validity. The use of the QTI is practical in the light of time and money involved in administering the questionnaire and calculating the results and the intrusiveness of the process.

Mindfulness-Based Programs, Reducing Stress & Academic Performance: A Review Study

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1. INTRODUCTION

Mindfulness-based stress reduction (MBSR) is a meditation therapy that helps people manage stress, anxiety, depression, and pain. The goal of MBSR is to help people experience their thoughts and feelings in the present moment without judgment. Mindfulness-based stress reduction (MBSR) is a therapeutic program that teaches people how to increase mindfulness through yoga and meditation. The program was developed by Dr. Jon Kabat-Zinn at the University of Massachusetts Medical Center.

"Reality is the leading cause of stress amongst those in touch with it."
Jane Wagner

It's inescapable, and it brings with it a host of uncomfortable and distracting symptoms. Stress isn't just a feeling or a mental state; if you don't address it, it seeps into every aspect of your life.

One way to cope with stress is through mindfulness-based stress reduction, or MBSR, an eight-week course that teaches how to use mindfulness in daily life. It's a proven way to help deal with the stressors of daily life. In this article, we'll explore what MBSR is and what resources are available for people interested in participating in and administering MBSR courses.

Symptoms of Stress

- Low energy
- Headaches
- Upset stomach, including diarrhea, constipation, and nausea.
- Aches, pains, and tense muscles
- Chest pain and rapid heartbeat
- Insomnia
- Frequent colds and infections

Beyond these physical symptoms, stress can also have a big impact on your emotions and general mood.

- Difficulty concentrating, racing thoughts.
- Trouble learning new information.
- Forgetfulness, disorganization, confusion
- Difficulty in making decisions.
- Feeling overloaded or overwhelmed
- Frequent crying spells or suicidal thoughts
- Feelings of loneliness pr worthlessness

When we treat stress as an opportunity instead of a threat, we can change our mindset and meet the challenge head-on, contributing to our own growth and development instead of throwing up our hands and waiting to be swallowed whole.

What Is MBSR? A Definition

"Mindfulness-based stress reduction is a group program that was developed by Jon Kabat-Zinn in the 1970s to treat patients struggling with life's difficulties and physical and/or mental illness (Kabat-Zinn, 2013)".

Although it was initially created to aid hospital patients, it has since been used effectively by a wide range of people from all walks of life.

In fact, according to the Centre for Mindfulness at the University of Massachusetts, "more than 24,000 people have taken advantage of the MBSR program the centre debuted in 1979 (Centre for Mindfulness, 2017)".

MBSR is a flexible and customizable approach to stress reduction. It's composed of two main components: mindfulness meditation and yoga. Instead of following a script or acting out meticulously described steps, mindfulness is practiced in the manner that best suits the individual (Centre for Mindfulness, 2017).

The importance of making each moment count by consciously bringing it into awareness during practice, thus stepping out of clock time into the present moment.

1. An educational rather than a therapeutic orientation, which makes use of relatively large "classes" of participants in a time-limited course structure to provide a community of learning and practice, and a "critical mass" to help in cultivating ongoing motivation, support, and feelings of acceptance and belonging.
2. A medically heterogeneous environment, in which people with a broad range of medical conditions participate in classes together without segregation by diagnosis or conditions and specializations of intervention. This

approach has the virtue of focusing on what people have in common rather than what is special about their disease (what is "right" with them rather than what is "wrong" with them), which is left to the attention of other dimensions of the health care team and to specialized support groups for specific classes of patients, where that is appropriate (Centre for Mindfulness, 2017).

When added to existing medical and/or psychological treatment, MBSR has shown to effectively enhance the results of treatment related to:
- Anxiety and panic attacks
- Asthma
- Cancer
- Chronic illness
- Depression
- Eating disorders
- Fatigue
- Fibromyalagia
- Grief
- Heart Disease
- High blood pressure
- Post-traumatic stress disorder
- Work, family, and financial stress (Centre for Mindfulness, 2017).

With such an impressive list of benefits, it's hard to argue against giving MBSR a shot, especially since the program does not require an unreasonable amount of time, energy, or resources.

The Most Popular MBSR Exercises and Techniques

As expected, mindfulness is heavily featured in MBSR techniques. While it's easy to think of mindfulness as a certain state of mind, there are several different ways to practice or engage in mindfulness, with varying areas of emphasis.

Mindfulness Techniques
1.   Focus Mindfulness
        Practicing mindfulness with an emphasis on focus involves looking inward to observe what is happening in your mind.
        It can be described as "eyes on the road" in that there is a singular focus on one experience.
        To keep your focus, it can be helpful to use a particular stimulus (like breath) to keep yourself grounded in the moment (The Mindful Word, 2012).
2.   Awareness Mindfulness
        Unlike focusing, practicing awareness emphasizes the external instead of the internal. Awareness focuses on the mind but from an outside perspective. When trying mindfulness from an awareness angle, try to view your mental activity as if it belonged to someone else.
        In general, awareness mindfulness can be described as looking at your thoughts and feelings from outside of your usual self-centred experience and observing your mind as a stream of consciousness without attaching judgment.
3.   Shifting from Focus to Awareness
        For switching from focus mindfulness to awareness mindfulness, try these tips:
        Watch the stream of consciousness, dispassionately.
        Pluck something from the stream and deliberately focus on it (e.g., a dream image, a memory, a painful feeling).

Mindfulness Exercises
1.   The Breath
        The exercise described above is one such exercise that facilitates mindfulness by focusing on the breath.
2.   Body Scan
        Lie with your back on the floor or a bed and close your eyes.
        Move your awareness through your body, focusing on one area at a time.
        Stop whenever you find an area that is unusually tight or sore and focus your breath on this area until it relaxes.
        You can use a calm and healing visualization at this point as well (e.g., a ball of white light melting into the sore spot).
3.   Object Meditation

Hold an object that is special or interesting to you. Focus all your senses on it and note the information your senses feed back to you, including its shape, size, colour, texture, smell, taste, or sounds it makes when manipulated.

4.   Mindful Eating

Like the previous exercise, this exercise can be completed with all your senses while you focus on eating a particular food, like dark chocolate or a raisin.

Eat slowly, utilizing all five senses: smell, taste, touch, sight, and even sound.

2. Review Literature

Study – I

Name: Mindfulness-based stress reduction and health benefits: A meta-analysis

Date of Publish: 20 July 2004

Author: *Paul Grossman*, *Ludger Niemann*, *Stefan Schmidt*, *Harald Walach*

Reference Link: https://doi.org/10.1016/S0022-3999(03)00573-7

Journal: Journal of Psychosomatic Research

Cite: Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of psychosomatic research*, *57*(1), 35-43.

Conclusion: Although derived from a relatively small number of studies, these results suggest that MBSR may help a broad range of individuals to cope with their clinical and nonclinical problems.

Study – II

Name: Mindfulness-based stress reduction for healthy individuals: A meta-analysis

Date of Publish: 20 March 2015

Author: *Bassam Khoury*, *Manoj Sharma*, *Sarah E. Rush*, *Claude Fournier*

Reference Link: https://doi.org/10.1016/j.jpsychores.2015.03.009

Journal: Journal of Psychosomatic Research

Cite: Khoury, B., Sharma, M., Rush, S. E., & Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of psychosomatic research*, *78*(6), 519-528.

Conclusion: MBSR is moderately effective in reducing stress, depression, anxiety and distress and in ameliorating the quality of life of healthy individuals; however, more research is warranted to identify the most effective elements of MBSR.

Study – III

Name: What Do We Really Know About Mindfulness-Based Stress Reduction?

Date of Publish: January 2002

Author: Bishop, Scott R. PhD

Reference   Link: https://journals.lww.com/psychosomaticmedicine/abstract/2002/01000/what_do_we_really_know_about_mindfulness_based.10.aspx

Journal: Psychosomatic Medicine

Cite: Kabat-Zinn, J. (2003). Mindfulness-based stress reduction (MBSR). *Constructivism in the Human Sciences*, *8*(2), 73

Conclusion: The available evidence does not support a strong endorsement of this approach at present. However, serious investigation is warranted and strongly recommended.

Study – IV

Name: Mindfulness-Based Stress Reduction (MBSR) for Primary School Teachers

Date of Publish: 05 December 2009

Author: Eluned Gold, Alistair Smith, Ieuan Hopper, David Herne, Glenis Tansey & Christine Hulland

Reference Link: https://link.springer.com/article/10.1007/s10826-009-9344-0

Journal: Journal of Child and Family Studies

Cite: Gold, E., Smith, A., Hopper, I. *et al.* Mindfulness-Based Stress Reduction (MBSR) for Primary School Teachers. *J Child Fam Stud* **19**, 184–189 (2010)

Conclusion: Mindfulness-Based Stress Reduction (MBSR) is a particularly helpful intervention for stress. The results showed improvement for most participants for anxiety, depression, and stress, some of which were statistically significant. these results suggest that this approach could be a potentially cost-effective method to combat teacher stress and burnout.

Study – V
Name: The Effect of a Mindfulness-Based Stress Reduction Program on Students
Date of Publish: January 2021
Author: Matthias Dressler, Rune Ellemose Gulev
Reference   Link:
https://www.researchgate.net/publication/352594249_THE_EFFECT_OF_A_MINDFULNESS-
BASED_STRESS_REDUCTION_PROGRAM_ON_STUDENTS
Journal: International Journal of Sustainable Economy
Conclusion: The current article demonstrates that training of mindfulness-based stress reduction can be successful
in coping effectively with testing conditions that are conducted under time constraints.

Study – VI
Name: Students and Teachers Benefit from Mindfulness-Based Stress Reduction in a School-Embedded Pilot
Study
Date of Publish: 26 April 2016
Author: Sarah Gouda, Minh T. Luong
Reference Link: https://www.frontiersin.org/articles/10.3389/fpsyg.2016.00590/full
Journal: Frontiers
Cite: Gouda, S., Luong, M. T., Schmidt, S., & Bauer, J. (2016). Students and teachers benefit from mindfulness-
based stress reduction in a school-embedded pilot study. *Frontiers in psychology*, 7, 590.
Conclusion: The present findings contribute to a growing body of studies investigating mindfulness in schools by
discussing the similarities and differences in the effects of MBSR on students and teachers as well as stressing the
importance of investigating interpersonal effects.

Study – VII
Name: Mindfulness-Based Stress Reduction for Health Care Professionals: Results from a Randomized Trial
Date of Publish: 2005
Author: Shapiro, Shauna L. Astin, John A. Bishop, Scott R. Cordova, Matthew
Reference Link: https://doi.org/10.1037/1072-5245.12.2.164
Journal: International Journal of Stress Management
Cite: Shapiro, S. L., Astin, J. A., Bishop, S. R., & Cordova, M. (2005). Mindfulness-Based Stress Reduction for
Health Care Professionals: Results from a Randomized Trial. International Journal of Stress Management, 12(2),
164–176.
Conclusion: The literature is replete with evidence that the stress inherent in health care negatively impacts health
care professionals, leading to increased depression, decreased job satisfaction, and psychological distress. To
address this, the current study examined the effects of a short-term stress management program, mindfulness-
based stress reduction (MBSR), on health care professionals. Results from this prospective randomized controlled
pilot study suggest that an 8-week MBSR intervention may be effective for reducing stress and increasing quality
of life and self-compassion in health care professionals. Implications for future research and practice are discussed.

Study – VIII
 Name: Mindfulness and the College Transition: The Efficacy of an Adapted Mindfulness-Based Stress Reduction
Intervention in Fostering Adjustment among First-Year Students
Date of Publish: 12 March 2015
Author: Taylor R. Ramler, Linda R. Tennison, Julie Lynch & Patsy Murphy
Reference Link: https://doi.org/10.1007/s12671-015-0398-3
Journal: Springer Link
Cite: Ramler, T. R., Tennison, L. R., Lynch, J., & Murphy, P. (2016). Mindfulness and the college transition: the
efficacy of an adapted mindfulness-based stress reduction intervention in fostering adjustment among first-year
students. *Mindfulness*, 7, 179-188.
Conclusion: Recent years have witnessed a marked proliferation in the interest in and relevant literature pertaining
to the practice of mindfulness. Considering this trend and the pervasive stress common among college populations,
the present study examined the efficacy of an adapted mindfulness-based stress reduction (MBSR) intervention
in fostering adjustment among first-year students. Sixty-two ($N = 62$) non-volunteer participants were assigned to
either an 8-week adapted MBSR intervention ($n = 30$) or a control condition ($n = 32$).

Study – IX
Name: Effects of Mindfulness-Based Stress Reduction on Medical and Premedical Students
Date of Publish: December 1998
Author: Shauna L. Shapiro, Gary E. Schwartz & Ginny Bonner

Journal: Journal of Behavioral Medicine
Cite: Shapiro, S. L., Schwartz, G. E., & Bonner, G. (1998). Effects of mindfulness-based stress reduction on medical and premedical students. *Journal of behavioural medicine*, *21*, 581-599.
Conclusion: The inability to cope successfully with the enormous stress of medical education may lead to a cascade of consequences at both a personal and professional level. The present study examined the short-term effects of an 8-week meditation-based stress reduction intervention on premedical and medical students using a well-controlled statistical design.

Study – X
Name: Effects of mindfulness-based stress reduction on depression, anxiety, stress, and mindfulness in Korean nursing students
Date of Publish: 9 July 2014
Author: Yeoungsuk Song, Ruth Lindquist
Reference Link: https://doi.org/10.1016/j.nedt.2014.06.010
Journal: Nurse Education Today
Cite: Song, Y., & Lindquist, R. (2015). Effects of mindfulness-based stress reduction on depression, anxiety, stress, and mindfulness in Korean nursing students. *Nurse education today*, *35*(1), 86-90.
Conclusion: A program of MBSR was effective when it was used with nursing students in reducing measures of depression, anxiety, and stress, and increasing their mindful awareness. MBSR shows promise for use with nursing students to address their experience of mild depression, anxiety, and stress, and to increase mindfulness in academic and clinical work, warranting further study.

Study – XI
Name: Mindfulness-Based Stress Reduction Reduces Psychological Distress in College Students
Date of Publish: 1 September 2018
Author: Felver, Joshua C, Marton, Melissa L., Clawson, Adam J.
Reference Link: https://www.ingentaconnect.com/content/prin/csj/2018/00000052/00000003/art00001
Journal: College Student Journal
Cite: Felver, J. C., Morton, M. L., & Clawson, A. J. (2018). Mindfulness-based stress reduction reduces psychological distress in college students. *College Student Journal*, *52*(3), 291-298.
Conclusion: MBSR can reduce psychological distress in postsecondary students, however more research using larger samples is needed to fully understand this contemplative intervention.

Study – XII
Name: The Impact of a Mindfulness-Based Stress Reduction Course (MBSR) on Well-Being and Academic Attainment of Sixth-form Students
Date of Publish: 26 July 2015
Author: K. Bennett & D. Dorjee
Reference Link: https://doi.org/10.1007/s12671-015-0430-7
Journal: Springer Link
Cite: Bennett, K., & Dorjee, D. (2016). The impact of a mindfulness-based stress reduction course (MBSR) on well-being and academic attainment of sixth-form students. *Mindfulness*, *7*(1), 105-114.
Conclusion: There is a growing interest in developing mindfulness skills in the context of education as a means to improve psychological well-being together with work-related skills and performance of children and adolescents. Our findings suggest that the MBSR programme may be an acceptable and effective intervention for self-selected groups of sixth-form students, and participation in the MBSR course may benefit sixth-form students by improving their psychological health and supporting them in achieving their academic potential.

Study – XIII
Name: A Comparison of Formal and Informal Mindfulness Programs for Stress Reduction in University Students
Date of Publish: 15 August 2015
Author: Robert K. Hindman, Carol R. Glass, Diane B. Arnkoff & David D. Maron
Reference Link: https://doi.org/10.1007/s12671-014-0331-1
Journal: Springer Link
Cite: Hindman, R. K., Glass, C. R., Arnkoff, D. B., & Maron, D. D. (2015). A comparison of formal and informal mindfulness programs for stress reduction in university students. *Mindfulness*, *6*, 873-884.
Conclusion: The present study compared a stress management program that used formal meditations and informal practice (Mindful Stress Management; MSM) to one that used brief mindfulness exercises and informal practice (Mindful Stress Management-Informal; MSM-I), and a wait-list control.

Study – XIV
Name: Facing the fear of failure: An explorative qualitative study of client experiences in a mindfulness-based stress reduction program for university students with academic evaluation anxiety
Date of Publish: 20 August 2015
Author: Aslak Hjeltnes, Per-Eniar Binder, Christian Moltu, Ingrid Dundas
Reference Link: https://doi.org/10.3402/qhw.v10.27990
Journal: International Journal of Qualitative Studies on Health and Well-being
Cite: Hjeltnes, A., Binder, P. E., Moltu, C., & Dundas, I. (2015). Facing the fear of failure: An explorative qualitative study of client experiences in a mindfulness-based stress reduction program for university students with academic evaluation anxiety. *International journal of qualitative studies on health and well-being*, *10*(1), 27990.
Conclusion: In this study of 29 university students with a history of academic evaluation anxiety, we found the following themes in their reported experiences of the MBSR program: (1) providing them with ways to find an inner source of calm when experiencing stress and anxiety, (2) that the group experience itself was described as reducing feelings of shame and increasing understanding of anxiety as a shared human struggle.

Study – XV
Name: Mindfulness based stress reduction for reducing anxiety, enhancing self-control and improving academic performance among adolescent students
Date of Publish: December 2016
Author: Anila M. M. and D. Dhanalakshmi
Reference   Link: https://www.proquest.com/openview/076fb5c99884ccce5953d0027f855075/1?pq-origsite=gscholar&cbl=2032133
Journal: Indian Journal of Positive Psychology
Cite: Anila, M. M., & Dhanalakshmi, D. (2016). Mindfulness based stress reduction for reducing anxiety, enhancing self-control and improving academic performance among adolescent students. *Indian Journal of Positive Psychology*, *7*(4), 390.
Conclusion: This intervention ensured that students could use it for their well-being not only at the present, but also in the future circumstances. Therefore, MBSR may be included in the school curriculum in order to help adolescent students who cope with the expectations and challenges of educational demands.

Psychological Implications of Increased Screen Time

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Abstract:
The rapid integration of digital technologies into education settings has led to significant increase in screen time for students across the globe. This abstract dig into the psychological implications of this paradigm shift in education. As students spend more time in front of screens for learning, communication, and recreation, it becomes crucial to understand the multifaceted impact on their psychological well-being.

This review explores the potential benefits and drawbacks of increased screen time in education, shedding light on cognitive, emotional, and social aspects. Following years the usage of screen time increases no matter what the reason is , age is , people putting their most of the time in screen as a result they creating issues such as decreased face-to-face interaction, cyberbullying, and the role of online communities.

1. Introduction:

In 21st century, calling digital world or entry of digital world where screen has transformed the way we live, work, and learn. From smartphones and tablets to laptops and televisions, screens have become integral to our daily existence and their existence emerging many different disciplines one of the psychology. Use of screen time effect psychologically of an individual's. As we can say that screens have assumed a prominent role in classrooms and remote learning environments. This phenomenon raises critical questions about it's psychological implications.

2. Importance:

Educational Significance: The introduction emphasizes the connection between screen time and education, which through the light on significant role of screen in education. This highlights the practical relevance of the topic for educators, students, and educational policymakers.
Broad implications: By mentioning cognitive development, attention span, mental health, and academic performance, it suggests that the consequences of increased screen time are far-reaching and multifaceted.
Contextualizing a contemporary issue: it highlights that we are living in a digital age where screens have become the center of our lives. This context is essential because it explains why topic is relevant today. The prevalence of screens in education and daily life makes it a pressing concern.

3. Purpose of the paper

The purpose of this paper is to comprehensively examine the psychological implications of increased screen time in educational field. It aims to provide knowledge and understanding of how increasing screen time impacts learner's cognitive Development, attention span, academic performance, effective domain and mental health. Adding on this paper also identify effective strategies and interventions that can mitigate the negative effects of screen time while harnessing in educational potential. This paper contributes to the ongoing dialogue surrounding technology's role in education and its psychological implications.

Here are some of the key psychological implications to consider:-
Cognitive development, attention span, mental health, social Development, sleep patterns, academic performance digital addiction parent-child dynamics etc One study found that adolescents who spent more than 7 hours per day on overall screen media were 40% less likely to achieve high academic performance, whereas those who spent 2 to 4 hours per day had 1.23 times the odds of achieving excellent grades compared with those who spent fewer than 2 hours per day. Other research suggests that moderate use(around 4 hours a day) of any screens(phones, tv, tablets etc) can lead to lower psychological well-being. This can go towards creating demotivated learners who are unable to give 100% to the work they are doing, resulting in lower academic achievement.

4. Strategies and interventions:

Create guidelines: Create clear guidelines for students, teachers and parents on recommended daily or weekly screen time limits.
Offline and interactive learning: more focus should be given on offline learning includes physical books, writing with pen and paper, hands-on experiments, debates, projects etc.
Utilized printed materials: use of printed books, papers , academic papers should be more to reduce screen time naturally.

Outdoor education: organize outdoor activities, field trips , and nature-based learning to connect students with nature I.e. promoting naturalism and reducing screen time.
Balanced homework: homework should make balance between online and offline tasks.
Teacher training: train educators on effective ways to reduce screen time in the classroom and promote offline engagement.

These are some strategies you can use to reduce screen time there are many more strategies you can use like providing flexible learning, monitoring usage etc but remember that the goal is to keep balance between positive and negative impact of technology on over psychological well-being. In educational field there are three most important points educators, parents and policymakers.

5.   Role Of Educators, Parents and Policymakers:

Educators:
Educators can design curriculum that includes a variety of offline learning activities and resources to reduce reliance on screen.
They can adopt teaching methods that encourages active participation, discussion and hands on learning, minimizing passive screen time or teach digital skills with some guidelines which help them to compete in digital world and also provide feedback to students on their screen time habits and offer support to those who may be struggling with excessive use.

Parents:
The word parenting is not just a word it's a huge responsibility parents our students first school. They should aware of trends of todays world and how these trends effect their child too. Screen time is one of the great concern now a days where everything is digital . Parents should establish clear screen time limits and rules, for kids put kids app and charge their screen use. Communicate to them if they're in adolescents age about digital world and their real life. Encourage and facilitate offline activities and hobbies that can replace excessive screen time. Collaborate with educators and school administrators to ensure consistency in screen time guidelines between home and school.

Policymakers:
Develop and implement policies at the district, state, or national level that address screen time limits and guidelines in educational settings. Allotment of resources for the creation of offline materials and hands-on experiments ensuring necessary infrastructures . Promoting research in the field of education to know more about reducing screen time and making education more effective day by day.

By working together educators, parents and policy makers can create an environment where students have a healthy and balanced relationship with technology, both inside and outside the four walls. This collaboration effort is essential for well being and educational success of students.

6.   Literature Review:

Kamlesh kumar yadav et al(2023):- explore the article which state the impact of technology on various aspects of our lives, particularly among the youth and college students around the globe in journal of clinical otorhinolaryngology, head and neck surgery.
Raj kiran Donthon et al (2023):- work in the field of increasing screen time and mental health among children which found significant association between digital screen use with physical and mental health issues.
Umar et al(2023):- work screen time of gifted students during the pandemic period. The purpose of this research is to explain the effects of the qualitative results obtained
from the data which is gathered from the interview with gifted students.
Monique M.Hedderson et al (2023):- work on screen time among children increased during covid-19 pandemic and remained elevated even after many health precautions were lifted. Study suggest that in the US, screen timing increased 1.75 hours per day during the early pandemic and remained 1.11 hours per day higher than the prepandemic period as the pandemic progressed. This is an open access article with corresponding authors Kaiser Permanente northern California division of research.
Mike Trott, Robin Driscoll et al(2022):- systematic review and data analysis give light on changes and correlates of screen time in adults and children during the covid-19 pandemic.
Pardhan et al(2022):- work in the risks of digital screen time and recommendations for mitigating adverse outcomes in children and adolescence.
Youjie zhang et al(2022):- work on the screen time and health issues in chinese school-aged children and adolescents peer reviewed articles written in Chinese and english were retrieved from CNKI, wanfang, PubMed, embase and web of science from inception to june 2020.

Simrat Atwal et al(2022):- study on screen time and mental health in Canadian youth: an examination of nationally representative data utilise the factors like sex, ages and socioeconomic status moderate relationship.

Stienwandt et al(2022):- during covid-19 pandemic has negatively affected mental health and increased parenting challenges impacting parent child functioning. They work on family factors associated with hands on play and screen time during covid-19 pandemic.

Toombs E et al(2022):- This provide evidence associating screen time and physical, cognitive and mental health outcomes in children and youth as well as evidence informed strategies to encourage screen use within guidelines as well as healthly screen habits.

Sheri Madigan et al(2022):- They estimate changes in duration, content, and context of screen time of children and adolescents by comparing estimates taken before the pandemic with those taken during the pandemic and to determine when and for whom screen time has increased the most.

Christina Bergmann et al(2022):- This article show that there is increased in numbers of usage of screen time with no online schooling requirements were exposed during lockdown than before lockdown The result highlight the impact of the covid-19 lockdown on young children's screen time.

Leora N Hodes et al(2021):- computers in human behaviour article on smartphone
screen time;:inaccuracy of self-reports and influence of psychological and contextual factors.

Linda K.Kaye et al(2020):- give an article on the conceptual and methodological mayhem of screen time. This article contains research on psychological issue through the new technology usage. While they contain a large amount of mixed data and with some lack data behind it in international journal of environmental research and public health.

Fatima M et al (2020):- synthesis the literature on the relationship between screen time and important mental health and their underpinning factors in current obesity reports.

Isabela Granic et al(2020):- work in the field of identity Development in the digital age beyond screen time. Where they study about the digital screen and their effect on health.

Neza Stiglic et al(2019):- give a systematic review examine the evidence of harms and benefits relating to time spent on screens for children and young people's(CYP) health and well being. Resulting higher levels of screen time is associated with a variety of health harms for CYP.

Jean M.Twenge et al(2018):- associated population base study on screen time and lower psychological well-being among children and adolescents which state that more hours of screen time are associated with lower well-being in ages 2 to 17.

Sophie Domingues et al(2017):- published an article on clinical and psychological effects of excessive screen time on children under journal of pediatrics and child health.

Vaishnavi S.N :- work on increased screen time as a cause of declining physical, psychological health and sleep patterns that how screen timing effect these.

7.   Conclusion:

In conclusion, the psychological implications of increased screen time in the educational field are a complex and evolving challenge. As technology continues to play a significant role in education, both positive and negative implications on child psychology. We also see that role of educators, parents and policymakers are very essential in todays digital world they have to work together to create balance in benefits of digital learning and the potential risks to students.

Following years prove that technology not only impacts positively very fast but negatively very rapidly. The future directions in addressing this issue involve a combination of research, education, policy development, and technological innovation.

Additionally, fostering a culture of responsible screen use, both at home and in educational institutions, is essential. This requires continuous engagement with the community, training and practices to ensure that students can harness the power of technology while maintaining their mental and emotional health. Ultimately addressing the psychological implications of increased screen time in education is not a one-size fits-all solution, it is an ongoing commitment to adapt and evolve in response to the ever-changing digital landscapes. By working together and remaining vigilant, we can create educational environments that empower students to thrive academically and emotionally in the digital age.

Enhancing Science Education Through Multisensory Learning: A Review Study

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Abstract

Multisensory learning, the integration of multiple sensory modalities in the educational process, has garnered increasing attention in the field of science education. This examines the impact of multisensory approaches on science learning outcomes, retention, and engagement. Drawing from a diverse body of research spanning neuroscience, pedagogy, and psychology, this highlights the manifold advantages of multisensory learning in science. The review begins by elucidating the neurological basis of multisensory processing, shedding light on how the brain synthesizes information from various sensory channels. It explores the potential of harnessing this cognitive mechanism to optimize science education, offering insights into the enhancement of concept comprehension and long-term retention. Moreover, this review delves into the practical aspects of multisensory instruction, discussing the wide array of multisensory tools and techniques available to educators. It also emphasizes the adaptability of multisensory approaches, catering to diverse learning styles and fostering inclusivity in science classrooms. It underscores how engaging multiple senses can invigorate science education, fostering intrinsic motivation among learners. Case studies and empirical evidence are presented to illustrate the positive impact on student motivation and enthusiasm for science. Despite the numerous advantages, challenges in implementing multisensory learning in science education are discussed, including resource constraints and the need for teacher training. Practical recommendations and best practices are offered to facilitate the effective integration of multisensory methods into science curricula.

1. Introduction

Science education stands as a cornerstone of modern society, empowering individuals with the knowledge and critical thinking skills necessary to navigate an increasingly complex world. In the pursuit of effective science education, educators and researchers have continually sought innovative methods to engage learners, deepen their understanding, and inspire a lifelong passion for scientific inquiry. One such approach that has gained considerable attention is multisensory learning. This paradigm shift in education acknowledges that individuals do not passively absorb knowledge but actively construct it through the interaction of their senses with the environment. Multisensory learning recognizes the fundamental role that vision, hearing, touch, taste, and smell play in shaping our perceptions, memories, and cognitive processes. The concept of multisensory learning extends beyond mere recognition of sensory diversity; it embodies the intentional integration of multiple sensory modalities into the educational experience. It posits that the synergistic engagement of these senses can enhance comprehension, retention, and motivation in science education. In an era where digital technologies, immersive experiences, and interactive simulations are transforming the educational landscape, it is imperative to examine how multisensory learning can be leveraged to meet the evolving needs of science education. This exploration is particularly relevant in the context of increasingly diverse and inclusive classrooms, where tailored approaches to learning are paramount.

2. Review of Literature

Dede et. al. (1995) he worked on the topic enhancing science education through multisensory learning and found that knowledge-based society, fluency in understanding complex information space which increases crucial skills.

Kohn (1994) he worked on the topic enhancing science education through multisensory learning and he found that in academic session student success now depend on their ability to manipulate multi dimensional information spaces.

Jian Zheng (2020) they worked on the topic enhancing science education through multisensory learning and they found that multisensory learning has the potential to facilitate learning outcomes. They put forward two experiments with multiple choice questions and answer session with visual, auditory and tactile distractions.

Pei -Luen, Patrick, Rau (2020)
Patrick (2020) they worked on the topic enhancing science education through multisensory learning and they found that multisensory learning protocols should be tested before being put into practice. They show that two experiments could be taken with visual, auditory and tactile distractions and their combinations.

Sigit Dwi Laksana, Ayu Wulansari (2021)
Ayu Wulansari (2021) he worked on the topic enhancing science education through multisensory learning and he stated that students at elementary age, the child begins to learn thoroughly involving all five senses and in the learning process. The child needs something concrete and clear.

Hannah J Broadbent, Hayley White, Denis Mareschal, Natasha Z Kirkham (2018)
Hannah J Broadbent (2018) they worked on the topic enhancing science education through multisensory learning and he found that modulate attention in infants and facilitate learning in adults by enhancing the properties of stimulus. They found that the important insight into the use of multisensory information in learning and particularly in incidental learning.

Lilis Sumaryanti (2021) he worked on the topic enhancing science education through multisensory learning and he found that multisensory learning is focussed and maximises the five senses possessed by students. It also involves in lesson - touch or sound will better understand and retain information. It is based on material, content which can be conveyed well to students.

Julie Markant (2022) she worked on the topic enhancing science education through multisensory learning and she found that developing attention control skills promote effective learning by minimizing distractions from task irrelevant competing information.

Dimo Amso (2022) he worked on the topic enhancing science education through multisensory learning and he suggested that contextual information can provide meaningful input for learning and should not always be ignored. It should be relevant to task goals can facilitate and broaden the scope of children' s learning.

Kristen Tummeltshammer (2023) he worked on the topic enhancing science education through multisensory learning and he suggested that infants can saw new objects and learn about objects features in relation to a rich and detailed context . It's indicated that infants can use visuospatial contextual information in complex naturalistic scenes to facilitate memory guided attention and learning of object paired labels.

Yihong Wang, Xuying Xu, Rubing Wang ,(2019)
Xuying Xu, Rubing (2019) they worked on the topic enhancing science education through multisensory learning and they surveyed that the interaction between working memory and long term memory using the neural energy coding memory based on the working memory model.

Ravishankar Rao (2018) he worked on the topic enhancing science education through multisensory learning and he examined that the world consists of objects that stimulates multiple senses, it is advantageous for a vertebrate to integrate all the sensory information available.

Yating Zhu (2019) he worked on the topic enhancing science education through multisensory learning and he found that in long term, we develop method to measure the changes in energy input of these two stimuli and the corresponding energy consumption of memory system.

Gaultiers Volpe,
Monica Gori(2019)
 Monica Gori (2019) they worked on the topic enhancing science education through multisensory learning and they focussed on multisensory technologies and we argue that the intersection between current challenges in pedagogical practices and recent scientific evidence opens novel opportunities for these technologies to bring a significant benefit to the learning process.

A.R Rao (2019)
A.R Rao (2019) he worked on the topic enhancing science education through multisensory learning and he showed that the use of multiple channels accelerates learning and recall by upto 80% when the channel disabled, the performance degradation is less than that experienced during the presentation of non congruent stimuli.

3.   Conclusion
 It is concluded that a future where multisensory learning becomes an integral component of science education, transcending traditional boundaries. In this future, science classrooms will be dynamic environments where learners actively construct knowledge through the seamless integration of sensory experiences. These environments will inspire not only the scientists of tomorrow but also informed and scientifically literate citizens who can grapple with the complex challenges of our time. In this vision, multisensory learning becomes a bridge

that connects the wonders of the natural world with the inquisitive minds of learners, fostering a profound curiosity about science and its role in shaping our world. It is a vision where science education is not confined to textbooks but is an immersive, multisensory journey that empowers learners to explore, understand, and contribute to the vast tapestry of scientific knowledge. As we move forward, let us embrace the potential of multisensory learning to revolutionize science education, foster scientific literacy, and inspire the next generation of scientists, thinkers, and innovators.

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A study of social values in secondary school students – A review Study

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The social values of secondary school students are of great importance as the give a good shape to their behavioral Outlook and their overall development the personality and character of the students are developed through social values. values like empathy respecthonesty and responsibility develop strong morals in children. The social values play and important role in building a positive and healthy relationship with pears family members teachers and the community we are all the social values of secondary school students are important because the shape their character guide their action and contribute to their overall development as responsible and empathetic individuals.

1. Introduction

Due to the development of social values in secondary school students are good attitude ofthe child within the society and school a good behaviour and a good shape in the style of conversation is seen teachers and parents should focus on inculcating social values in children to promote positive social development and create and inclusive learning environment social values are also believe and principles that enable a person to leave in society right or wrong in the society identify is good and bad social values lead to a good attitude and the good behaviour toward on self and others during Secondary School adolescence form their social identity and values which are reflected in their behaviour.

2. Operational Definition

Social :- "Social" refers to anything related to society, human interaction, or the relationships and activities among individuals within a community or group. It encompassesvarious aspects of human life that involve behaviours , social interaction, norms, , and structures.
Social Values :-
Social values guide the behavior of the child. Makes him identify right wrong good and bad. Values give a good shape to the character and personality of a person.

3. Research Review

Mondal Bhim Chandra (2020) reviewed on "Inculcating Human Values among School Students through Effective Teaching". When children develop values, they lead a life that gives them satisfaction. Such children become role models for the society. Due to these values, he easily solves the problems that come in his life. The character building and personality development of such children is very high. Different types of values are found in these like compassion, kindness, appreciation, patience, discipline, punctuality etc.
Yashoda and Kumar k. Prem (2018) studied on Role of the teacher in Inculcating of moral values among high school pupils. Education is a great tool for inculcating values in children. When values are developed in children then only a good character will be formed inthem and character is such a precious jewel. Character is only precious jewel that one can cherish to wear".
Mittal Archana (2016) studied on A Study of Values of Secondary School Students in Relation to their Socio-Economic Status and Modernization the success of any nation depends on the child, the more the child develops, the more the nation will develop. The character and personality of the child gets a good shape due to social values. Value individuals play a high role in building society and nation. The child's behavior and conductcan be seen through values. Values give a good shape to the character and personality of aperson.
Sekiwu Denis and Botha M. M (2014) studied on "Values for Social Development in the Context of Globalisation Strong social development, value integration and formation of a good character in children through school. Due to these values a good personality is designed in the children. Compassion, kindness, appreciation, patience, discipline, punctuality and different types of values are found in such children Due to the developmentof social values, a peaceful environment is created.
Ferreira, C, Schulze, S (2014) studied onTeachers experience of the Implementation ofvalues in education in schools It is the teacher who facilitates values in education. The curriculum should be

designed in such away as to inculcate the values of the child. Thecurriculum should be designed in such a way that the personality of the child is developed. Human behavior gets a right guidance through values.

Aelenei, C. , Jury, M. , Darnon, C. , Sicard, A. , Maggio, S. , & Martinot, D. (2023). Self-enhancement values and academic achievement: An interaction with students' parental level of education and gender. In this study we found that endorsing self-enhancement values was associated with lower grades for all students. When their parents had a lower education level, there was no such effect for male students whose parents had a highereducation level and no effect was found for female students.

Paul Greenbank (2003) The role of values in educational research**:**A person's abilities and his values influence his actions. That means values influence a person's research methodology. Educational research is related to social values. Finally the issue of research ethics is considered. At the same time he is telling that the research process is affected dueto social values.

Agnes, M. M. J. (1997). A study of the personality characteristics of B. Ed. students in collegeof Education in Tamil Nadu**.** Individual characteristics like achievement, respect system, performance, autonomy protection, helpfulness, love, dominance, humiliation, nurturing, change, tolerance etc. All these characteristics contribute a lot in the development of valuesof the students.

Dılmaç, B. , Kulaksizoğlu, A. , & Ekşlı, H. (2007). An Examination of the Humane Values Education Program on a Group of Science High School Students. This study showsus that after testing the control and experimental group, there is a significant difference in favor of the experimental group in the measures of responsibility, friendliness, respect, honesty and tolerance according to those results. These represent the sub-dimensions of human values education programme.

Ishii, M. (2010). Implementing character education at public schools, focusing on sathya sai education in human values: A case study of sathya sai school, Leicester,UK and India. This study tells us that it has been a long time since the paramount importance of character education has been advocated in America as well as in Japan. But there are still schools that are struggling to implement and integrate education even after implementing programs. Among the educational organizations imparting character education, Satya Sai Education has proven to be very effective in achieving both academic and character excellence in students.

Agboola, A., & Tsai, K. C. (2012). Bring character education into classroom. From thisstudy we come to know that morality and discipline are inculcated in students through character education. Therefore, parents, teachers and administrators should develop values in children so that they can develop a good character and become a good citizen.

Pala, A. (2011). The need for character education Character education is a national movement. It builds the school. Building a good character in children by emphasizing on all the values can develop moral, responsible and caring etc. Valuesin the building

4. Conclusion

Overall, the social values of secondary school students important because they shape theircharacter, guide their actions, and contribute to their overall development as responsible and empathetic individuals. The school, family and community play an important role in instilling these values, ensuring a positive and inclusive environment for students to growand thrive

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Academic anxiety and mental health among students: A review study

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Abstract
When students feel anxious about their schoolwork and exams, it can really affect their mental health. It can make them feel stressed, worried, and even overwhelmed. This study shows that this is a common issue, and it's important for schools and colleges to help students manage this anxiety. Providing support and strategies to deal with academic stress can make a big difference in students' overall well-being and success in their studies.

1. Introduction

The study of academic anxiety and the mental health among students explores how the worries and stress related to school work can affect their overall well-being.When we talk about academic anxiety we means the feelings of fear, worry or nervousness that student may experience in relation to their school performance. This anxiety can arise from various factors, such as pressure to do well, fear of failure or excessive workload. Mental health refers to a person's emotional and psychological well-being. it includes how they feel, think, and cope with the challenges of life. mental health can be influenced by various factors, including stress, anxiety and other emotional experiences.

2. Operational definitions

Academic anxiety: Academic anxiety is defined as the state of feeling extremely stressed, worried or fearful about school related task and situations, which can lead to difficulties in concentration and performance.
Mental health: Mental health can be defined as a person's overall well-being and how they think, feel and act. it includes our emotional psychological state, which affects our ability to cope with daily life challenges form relationship, and make decisions.

3. Review of Related Literature

Benjamin, L. (1987) He worked on the topic "counseling students and faculty for stress management. " He noticed that nervousness can connect with consideration, learning and testing.
Deb, S., Strodl, E., Sun, H. (2015) They worked on the topic Academic stress, parental pressure anxiety and mental health among Indian high school students. "This work investigates the It could be stress and mental health of Indian high school students and the association between various psychological factors and academic stress. The degree of parental pressure experienced differed significantly across the educational level of the parent's mother occupation number of private tutors and academic performance.
Grandi, S., Tossani, E. (2020) The researcher worked on the topic "Health anxiety and mental health outcome during COVID -19 lockdown ". This study Examined the mediating and moderating roles of psychological flexibility in the link between trait health anxiety and three mental health outcomes COVID-19, peritraumatic distress, anxiety and depression.
Gupta, V. (2014) He worked on the topic "study of anxiety and mental health as function of personality sex and academic achievement. " The purpose of this study to understand the mental health between male and female of success and failures of academic achievement.
Hood, M. (2017) He worked on the topic "academic anxiety: An overview". They investigated the academic anxiety can negatively impact the students academic performance. Teachers and parents can learn to recognize symptoms of anxiety in school students. if teachers and parent help students learn to control anxiety early, more serious academic problem related to anxiety can be avoided.
Kumar, A. (2013) He worked on the topic "relationship of academic anxiety among adolescents in relation to their home environment ". The purpose of this study is to find out that anxiety is very common and natural in teenage boys and girls.
Kumar, K., Tiwary, S. (2014) He worked on the topic " Academic anxiety among students and the management through yoga. "The objective of this study reveals that the current review intends to notice the impact of yogic mediation over scholarly tension level among school going under studies and the result is found that your yogic intervention was found to reduce the academic anxiety level of the subjects.
Mahato, B., Jangir, S (2012) He worked on the topic " A study on academic anxiety among adolescents of minicoy island. " he found that academic anxiety common issue among student it is difficult to ignore if they want to success in school. His study was to measure the academic anxiety among students between 14 to 16 years of age and he found to evaluate and compare the academic anxiety among boys and girls to find the relationship.
Saini, A. (2017) He worked on the topic "academic anxiety" the aim was to found that if academic anxiety is recognized timely it helps in improving the performance of students hence it is important to know more about academic anxiety.

Sharma, R. (2017) He worked on the topic relationship between academic anxiety and mental health among adolescents." He study and tries to explain the relationship between academic anxiety and mental health among adolescents. descriptive survey method was used for this study. tools were used for data collection of academic anxiety scale for children and mental health battery.

Sivakumar, KS (2010) The researcher worked on the topic "social handicap and its relation to mental health anxiety and academic achievement". The result of this study show the mental health, anxiety and academic achievement of socially handicapped students.

Usha, M. (2020) She worked on the topic "Effect of academic anxiety, mental health and deprivation on teaching self effecacy among secondary school students. " the purpose of this study is to find out whether secondary school is students differing with high moderate and low level of academic anxiety differ from one another on teaching self efficiency.

4. Conclusion

when students feel anxious about their schoolwork and exams, it can really affect their mental health. It can make them feel stressed, worried, and even overwhelmed. This study shows that this is a common issue, and it's important for schools and colleges to help students manage this anxiety. Providing support and strategies to deal with academic stress can make a big difference in students' overall well-being and success in their studies.

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Conspiracy of Silence against Women: A Study of *Behind the Veil*

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Abstract

This paper seeks to examine how bodies of women have been colonized with reference to Rasheed Jahan's play *Behind the Veil (Parde ke Peeche)*. Jahan is concerned with the 'conspiracy of silence' against women and her writings on issues of female sexuality, abortion, women's health and diseases etc. made her an iconic figure. The emergence of women writers like Rasheed Jahan and others on the Indo-Anglian literary horizon is of tremendous significance since she highlights the unexplored sexuality in *Angare* which was earlier a taboo & explores the case of marginalization and exclusion due to which she was labeled 'angareywali'. She raises a voice against sexism to express victim-victimizer clash since the documentation of creative capacities of women can free them from the status of the victim. The predicament of Muhammadi Begum is depicted in her one act play wherein she uses pen as the palisade to subvert the all-pervasive patriarchy.

Keywords: Silence, sorority, body-colonization, docile bodies

1. Introduction

Dr. Rashid Jahan is one of the pioneers of radical writings on women's issues. In 1922 Rashid Jahan entered Isabella Thoburn College, Lucknow, as a science student. Here she first devoted time to writing, and her first published effort was a short story in English, "Salma," which appeared in the college journal Chand Bagh Chronicle in 1923 or 1924. Graduating in 1924, she entered Lady Hardinge Medical College, Delhi, during which time she continued to write, but mostly in Urdu. While in medical school she also continued her interest in the theater by staging her adaptation of the famous love story of Princess Lala Rukh. She received her M.B.B.S. degree, with specializations in Gynecology and Obstetrics, in 1929 and immediately entered the Provincial Medical Service of United Provinces. Her first medical position was in Kanpur. In 1931 she was posted to Lady Dufferin Hospital, Lucknow, and it was here that she became involved with the coterie of young writers who would eventually become famous, or infamous, in Urdu literature as the Angare Group: Ahmed Ali, Sajjad Zaheer, Mahmuduzzafar and, of course, Rashid Jahan herself. She emerged as a prominent feminist writer of 20th century as she made a pioneering inroad into the literary public sphere. She highlights the unexplored sexuality which was earlier a taboo in *Angare* & explores the case of marginalization and exclusion.

2. Predicament of Women in *Behind the Veil*

Rashid Jahan's play deals with the predicament of all those women who are the victims of brutality. They are constrained to live in 'attics' of emotional desolation, allowed to venture out only upto the 'courtyards' of domesticity. Jahan in her write-up displays a desire to find access to the horizon of self definition/realization, warding off the veils and shadows of repression. Her pen worked as an instrument to shear the purdah. The play is a deeply moving account of women who carry their sufferings on their shoulders.

We all know that men and women have different kinds of experiences and their expression of writing is even more different. In traditional societies women have been constrained by social constructs and have been divided into family units, relating to outside world through their men, being governed by their positions. How have they coped with these subordinated positions, or lack of communication or the failure of their dreams? And how have they defined themselves, honed their languages, related to society?

The answer is women have turned to writing and found both sanity and self-expression through it. When men and women narrate the same thing, the perspectives, the images, comparisons are different since they are two different kinds of articulations and voices. This is all because of the male gaze so women need to shake off this hold. She must find the voice which is free from this gaze or she must find a space outside this frame. It is believed that men can become aggressive and revengeful in writing but women have to be preservers of sanctity even in writing. When Rasheed Jahan breaks from those constraints and throws light on the ruthlessness of men, people labeled her as 'angareywali' who has no right to live because she as a 'woman' writes of the harsh reality. Men regard women as the mere 'body' without emotions or feelings and they act mercilessly when it comes to acting as consumers of the feminine bodies.

Jahan's uninhibited frankness in writing led people to call her 'witch' since it highlights the nature of men that they are free to have as many women as they want. Marriage is the ultimate destiny reserved for girls and after marriage, the goal is to prove oneself as a productive wife, caring mother, and capable gratifier of

husband's sex drives which robs her of the self-esteem and essential dignity. She echoes Cixous' appeal to women, "I write this as a woman, toward women. . . . [we] must bring women to their senses" (Cohen 875). She bares the attitude of lustful men and their never ending carnal desires of having a female body available all time no matter what the woman is going through and she believes "Women should break out of the snare of silence. They shouldn't be conned into accepting a domain which is the margin . . . " (881).

Parde ke Peeche Behind the Veil published in 1932 is a one-act play which exposes the evils of feudal patriarchy wherein the sickness and health of a wife doesn't matter for a husband. The wife is confined within the four walls, "Their bodies, which they haven't dared enjoy, have been colonized'" (Blyth and Sellers 26). The play picturises the age-old tradition of early marriage, poor health of women, infidelity of men, divorce threat, fear of unwanted pregnancies and anxiety about losing looks of a woman.

As Jahan was herself a doctor, she relates her own life experiences as a doctor in her analysis. Her conversations with her female patients made easy to diagnose the problem and she wanted to eradicate the disease by not only going behind the veil but through education. Her pen becomes the palisade, "Writing, when looked at, from the point of view Cixous is promoting, is a space of liberation" (33). She talks of the effects of excessive child bearing on the bodies and psyche of women. But this uninhibited frankness was unbearable by orthodox people, "big bosses don't like the true texts of women–female-sexed texts. That kind scares them" (Cohen 877). Orthodox people attacked her verbally, satirized her and even threatened with death.

In the play Jahan depicts sorority between female characters through their conversation. The daily activities, the family, the individual, the struggle and the survival are all brought into light. She has raised issues about a woman's identity, her freedom, colonization of body. The woman character Muhammadi Begum plays a completely passive role in a situation who has no choice. Women are tutored into a submissive role accorded by the social pattern. Jahan presents the subordinate positioning of the female sex in a society governed by patriarchal laws. She depicts how Indian women are trapped in overlapping circles of household responsibility, social expectations and femininity. She portrays the society in which women are denied freedom to act independently. Jahan raises question of special significance about female identity and solidarity. Muhammadi Begum bears the pangs of birth and sufferings because of the treatment of woman as body. She had to tolerate the discomforts of pregnancy, bearing dozen of children, nurturing them within her and giving birth, coping with the pain and anxiety felt each time. Commenting upon the situation the writer ironically remarks, "But it's his own pleasure he's thinking about. If the baby was with me he'd be inconvenienced. Doesn't matter whether it's day or night, he wants his wife. And not only his wife. He goes the rounds to other women too" (De Souza 465).

Jahan depicts how the line of threshold is not supposed to be crossed by women in Indian-set up. Muhammadi is sick of the burden of constant child bearing and Aftaab is disappointed with her son who is in a relationship with a Christian woman but these women can't speak because tradition tells not to do so. It is depicted how the husband's interest in wife is largely sexual. It is believed that women's way to men's heart is through their bodies which are required to be kept in good trim, serviceable and seductive at all times. Her identity is reduced to a feminized 'body/object' which is echoed in the lines:

> I'm ill all the time… and I know that he'll marry again. No doubt about it. And I live in fear all the time. God take me away before I have to see the face of a co-wife. I've had myself operated on twice...My womb and all my lower parts had fallen. I got it put right so that he could get the same pleasure again as he'd got from a newly-married wife. But when a woman has a baby every year how can she stay in good shape? (De Souza 471)

She is always in perpetual fear of having a co-wife or a straying husband. She willingly accepts this identity because of her internalization. Eventually the result is a feminized woman who accepts her inferiorization and chooses to 'act' as a dumb and naïve creature.

The writer stresses the need for preserving the femininity of the body. She follows Mary Wollstonecraft and believes what the former asserts, "I do not wish them to have power over men; but over themselves' . . . ' it is not empire, - but equality, that [women] should contend for'. . . . education for women as for men must be 'the first step to form a being advancing gradually towards perfection'"(qtd. in Reiss 45-46). In *Discipline and Punish*, Michel Foucault gives an account of forms of subjection that engender 'feminine bodies' or 'docile bodies of women' meant to service the sexual, emotional and material needs of males or women as compliant companions of men. The sole aim of creating the 'feminine bodies' is to enhance functional resources of male and keep the male in good humour through sexual activity or relaxing, or erotic companionship. Males have a hold over female bodies which operate as the males wish with their own techniques. Thus, produced subjected and 'docile bodies'. This politics of the body is linked to the feminist question of female identity.

The essentials of an ideal feminine body is depicted through the tension of gaining weight at the time of childbirths, a woman's emotional and intellectual needs are ignored and she is not even expected to have any.

Simone de Beauvoir commented that to be feminine is to appear weak, futile and docile. The girl is supposed to make herself ready and any assertion will diminish her femininity and her attractiveness. The male world recognizes only two types of women: the angel and the witch. As long as women follow the stereotypical patterns they are hailed as angels but if they try to break free from the patriarchal constraints they are labeled as witches.

Jahan is agitated to see the conditioning of a girl when the young brother catches his sister reading and says: ""Shall I tell mummy you were reading trashy books? The Loving Friend, or The Lively Lad. I didn't see properly what it was" to which the girl responds "I swear by God I was reading Maulvi Ashraf Ali Thanavi's *Bahishti Zewar*" (De Souza 467). On the other hand, the lady doctor in the play is the symbol of social freedom. The plight of a woman is reinforced when the lady doctor says: ""How can your children be strong and healthy when, for one thing, you're so weak, and then you have children so quickly – one after another" (466)." Here, Jahan portrays the notion of BBW i.e. women as beasts, bats and worms which irritates her. Women are the prisoners of 'House' and 'Body' which directly relates to Millet's argument, "Millett devotes a great deal of space to man's 'house institutions'. Man's house is a fortress of patriarchal associations and emotions" (Bhagwat 191). This condition is portrayed through Muhammadi Begum. In order to liberate women Jahan follows what Cixous points out, "Write! Writing is for you, you are for you; your body is yours, take it" (qtd. in Srivastava 129).

Jahan herself wore no purdah but that doesn't mean that she is against purdah. In fact it is the purdah of the mind which she opposes. She opposes the 'male gaze' which holds the woman captive; and to break through this captivity, a woman needs to establish control over her body. Language becomes the weapon for Jahan and she writes about the responses of women, of the shadows which women alone can see and the anguish they alone can feel. Ellen Moers gives the concept of "heroinism" which expresses literary feminism wherein female protagonists are shown as intellectual heroines who create a heroic structure for the voice of female. Thus, Jahan becomes a heroic figure for women through her bold articulation of the female narrative.

3. Conclusion

Rashid Jahan enables the reader to decipher Begum's agony and trauma as she is subjected to. She writes with a view of a woman with feminist ideals who prophesies and believes that life will some day be very different for women. She raises consciousness among women to take care of their bodies since it is of utmost importance. Sexual politics is explored within the oppressive male power structure. She is both a 'new woman' and 'newly born woman'. She deals with aspects of gender consciousness, she attempts to present facets of female sensibility, wherein she questions the cultural conditioning and psycho-sexual determinants which govern their destinies. She has reconstructed female identity through the idea of sorority in the play. Jahan talks about the power inside a woman to face a difficult situation when the two women open their hearts with each other. The sorority becomes the power to communicate and zenana becomes their free space.

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Up-skilling and Re-skilling of teachers: A Review Study

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Abstract

In the 21st century teaching learning process has reached new heights. The teaching learning process is no longer confined to the classroom's traditional teaching methods where the students were asked to recite and memorise the content of the study.

1. Introduction

The education system has been reformed introducing new methods of teaching and learning. The teachers need to improve their skills i.e. they should undergo a reskilling and upskiling programme to keep up with the new teaching methods.

Various problems faced by teachers may include:

- Improving learning outcomes
- Differentiating and personalizing teaching
- Finding the time to keep up with administrative tasks
- Understanding changing technology
- Problems faced in pedagogic advancements
- Parental involvement

All these problems have to be faced by teachers head-on. Whether adapting to new technology or staying up-to-date on best practices, teachers must be prepared and willing to take their teaching in a whole new direction. Continuous professional development is crucial for teacher's professionalism, and affects teaching practices in the classroom. Education systems could also build on effective forms of professional development, such as active learning and collaborative approaches, to improve the overall quality of professional development offered to the teaching workforce. These efforts can help teachers become lifelong learners and grow in their profession.

2. Up-skilling and Re-skilling of teachers

Upskilling refers to the process of allowing teachers to acquire new skills to help them do their current jobs more effectively—creating a state of continuous learning. Upskilling concentrates on developing teachers new skills and minimize skill gaps. With the growing technological advancements it has become necessary for teachers to develop relevant and specialized skills through continuous training and learning.

 Reskilling refers to helping teachers with their current career path, and allowing them to shift focus toward a new job role. It is a drive to train teachers with the new skills needed to perform a different type of role – not directly about progressing in what they already do.

In upskilling, the teacher learns additional skills and new technologies to be more qualified to teach the students in a better way, on the other hand reskilling is when the teacher learns a completely different and new skillset which are outside his existing skillset to take in a new role.

Educators or teachers who receive high-quality training throughout the course of their career are able to significantly improve student learning outcomes. Teachers who have received some sort of resklling and upskilling are often more enthusiastic in imparting knowledge in more motivated and positive ways. The development of teacher's morale also results in happier teachers which in return results in healthy teaching and learning environment.

Upskilling and reskilling benefits in teaching new soft skills and technical skills can bridge in gaps in the knowledge of teachers. Upskilling and reskilling further boosts teachers morale. Teachers exhibit a positive attitude towards using technology that supports collaboration, learning, and productivity, consequently developing their digital competence. As a result, this will also lead to the development of the students' digital competencies, where they will be able to overcome challenges they might face in this changing world, especially after the pandemic of Covid-19, where there is reliance on the use of technology.

According to the recent **Programme for International Student Assessment**, over a quarter (28%) of 15 year olds in Britain attended schools where leaders reported teacher shortages being a problem in 2019. This means high-quality teaching professionals and educational leaders are needed now, and upskilling is a fantastic way to

improve our skills. In today's era, teacher training, upskilling and reskilling is necessary and essential for the future development of the children and of the nation as well.

Some major benefits of up-skilling and re-skilling of teachers:

1. **Professional growth:** when teachers are given an opportunity to reskill and upskill themselves they develop confidence and motivation after learning new skills, tools, methods and ways.
2. **Better student management:** with the changing times the technological advancements have made students more tech savvy. It has become the need of the hour for the teachers to become tech savvy as well to keep up with their growing students.
3. **Equips them with modern pedagogy strategies:** Through reskilling and upskilling of teachers, especially those who have been teaching for many years are not likely to be aware of updated practices and methodologies, learn new methods and techniques which they can implement in the classroom to better educate their students.
4. **Reduced skill gaps:** Upskilling and reskilling training can bridge skill gaps leading to more competent teachers.
5. **Better preparation for future children:** upskilled teachers can equip students with relevant and updated knowledge and skills, preparing them for the demands of the modern workforce.

In the context of Upskilling and Reskilling of teachers, main focus is shifted towards teachers or educators. Continuous development of teachers helps them develop new skills and techniques which in turn helps them improve their ability as educators and understand students better. Besides teacher also develop more confidence in teaching abilities as they are up-to-date with the latest educational developments. Through reskilling and upskilling teachers can learn new ways to engage with students so they don't feel like they are just lecturing in front of the room. Through these mechanisms and more teachers can reshape the quality of teaching and Reskilling and upskilling will allow for survival in this ever-evolving technological space for the future teachers.

3.   Review on Up-skilling and Re-skilling of teachers

Pattanshetti (2012) did a research titled A Study of In Service Teacher Education Among the Secondary School Teachers of Karnataka submitted to School of Education, Karnataka State Women's University. In this study he concluded that In-Service Teacher Education is essential and caters to the genuine needs and interests of the teachers in today's time, as it develops the positive attitude in teaching profession. The In-Service Teacher Education has to develop more with the changing needs of the new generation

Sreeja (2017) researched on the topic Efficacy of a teacher training module in enhancing teaching skills of primary school teachers in an inclusive setting. Submitted to School of Behavioural Sciences, Mahatama Gandhi University. In this study it was found that there was an amelioration of primary school teachers' overall efficacity for inclusive practices. There was also improvement in the skills of primary school teachers in the three major fields namely: efficacy in using inclusive instructions, efficacy in collaboration and efficacy in dealing with disruptive behaviors.

Bala (2018) conducted a research on Inservice teacher training programmes for senior secondary school teachers conducted by scert in himachal pradesh an evaluative study submitted at Department Of Education, Himachal Pradesh University Summerhill. This study was conducted for improvement in the vision of a teacher regarding teacher's role in developing the quality of teaching. Through this study it was concluded that inservice teachers should poses the competency in academic field, teaching methodology and classroom interaction.

Srivastava (2019) conducted research on Digital Competence and Life Skills: A Study of Higher Education Teachers submitted to Department of education, Lucknow university wherein she found that most of the central university teachers have intermediate level of digital competence whereas state university teachers have beginner level of digital competence and private university teachers have almost similar level of beginner as well as intermediate level of digital competence.

Kumar (2022) conducted a research on Digital Competence And Techno-Pedagogical Skills As Criterion For Teacher Effectiveness Of Prospective Teachers submitted to Department of education, university of madras. In this research he found that the digital competence, techno- pedagogical skills of the teachers as well as the teacher's effectiveness are all moderate in nature. .

Oye, Iahad and Rabin (2011) researched on A Model of ICT Acceptance and Use for Teachers in Higher Education Institutions in the International Journal of Computer Science & Communication Networks. The Studies have shown that digital technologies (ICTs) have the ability to reshape the quality of teaching and learning if used

and implemented properly by the teachers. It was also recommended that all the in service teachers of federal, state or private universities should undergo compulsorily some reskilling and upskilling on ICT programmes. This provides the teachers with more real-life practical knowledge of computer, internet and other areas of ICT.

Liston and Cromie (2011) conducted a research on Using Research based Teaching To Help The Unemployed In Ireland Upskill and Reskill For Sustainable Work Trinity College, University of Dublin (IRELAND). The objective of this study was to help unemployed people to remain as close as possible to the labour market by accessing part-time flexible higher education and training opportunities to upskill or reskill in areas where sustainable employment opportunities may arise as the economy recovers.

Nel (2012) conducted a study on Transformation of teacher identity through a Mathematical Literacy re-skilling programme submitted to Academic Development Centre, University of Johannesburg, South Africa. In this study she concluded that teachers began to see themselves as facilitators in the learner centred classroom, they became more competent in introducing new concepts, could use a broader variety of resources in the classroom and they started to enjoy teaching the subject after going through the reskilling prgramme.

Hussin, Sufean, Abri and Saleh (2015) researched on the topic Professional Development Needs of School Principals in the Context of Educational Reform in the International Journal of Educational Administration and Policy Studies. The results of this study have shown that the school principals in the Muscat city district, Oman, actually do indeed needed fifteen areas of professional development to improve their instructional and transformational leadership capacity, especially after the enforcement of basic education reform policy of 1998. In addition, this study has shown that there is a wide gap between the theory and process of policy implementation which is needed to be build.

Jiang, Soon and Li (2021) researched on Enhancing Teachers' Intercultural Competence with Online Technology as Cognitive Tools: A Literature submitted to Department of Human Resources, Xuzhou Medical University, Jiangsu, China wherein they found that Teachers are encouraged to construct active collaborative learning, share knowledge and experience, negotiate contradictory views, apply and transfer knowledge, think critically, and solve problems. Reflecting on their learning and teaching practice also supports teachers' metacognitive development in building and employing knowledge and skills.

Jin, Tigelaar, Want and Admiraal (2021) did a study on The effects of a teacher development programme (TDP) in chinese vocational education on the efficacy and professional engagement of novice teachers submitted to the Journal Of Education For Teaching. Concerning self-efficacy, teachers who participated in the TDP significantly improved their efficacity in student engagement and classroom management. This study also showed an effect on professional engagement of Chinese teachers. This means the TDP in the current study improved amateur teachers' retention in Chinese VET schools, although it didn't increase teachers' willingness of working harder.

Hafeez (2021) did a research on The Impact of Teacher's Training on Interest and Academic Achievements of Students by Multiple Teaching in Allama Iqbal Open University, Islamabad, PAKISTAN. The statistical results of the study showed that academic achievements and interest of students towards computer course were better after the training of teachers and demonstration method was ranked at first and lecture method was ranked at last.

Medina (2022) did a research on A Comparative Analysis of the Successes and Challenges in Online Teaching at Different Grade Levels During the New Normal Education in La Consolacion University Philippines wherein he found that Science teachers serving at different levels also encounter challenges in online teaching. And it was suggested in this study to continue the upskilling and reskilling of teachers on digital learning and handling different learning modules.

Sawant, Thomas and Kadlag (2022) conducted a research on Reskilling and Upskilling : To Stay Relevant in Today's Industry. According to their study they suggested Old notions of teaching with current circumstances and demands may be too slow and unsuitable to keep up with the rapidly growing demands of the future generations. Reskilling and upskilling will concede future teachers to survive in this ever-transforming educational technology

Bacus and Rivika (2022) conducted a study on Senior High School Teaching : A Phenomenological Inquiry submitted to Alda Faculty, College of Teacher Education, Cebu Normal University. In this study he found that Teachers need to develop a sense of initiative and self-directedness to fulfill their roles as frontliners in curriculum implementation. Administrators of academic institutions should continuously support teachers' continuing

professional development by charting relevant trainings, conducting regular onsite monitoring, and providing resources for teachers' upskilling and re-skilling.

Torrato (2022) conducted a research on the Influence of the Pandemic in the Upskilling of Teachers' Digital Competence in Remote Teaching in Basic Education in the Philippines. It was found through this study that the Covid-19 compelled the teachers' to upgrade and expand their digital competence and apply them to their teaching and learning. Further studies on the effect of these digital competence was also recommended.

Cabardo's (2022) studied about the Challenges and mechanisms of teachers in the implementation of modular distance learning in the Philippines: a phenomenological study. Teachers overcame the challenges of learners submitting incomplete and unanswered modules, inadequate parental support etc. by effectively managing their time, having regular communication to parents and students, undergoing reskilling and upskilling to enhance their knowledge and skills in modular learning, and utilize blended learning.

Penalva (2023) researched about Innovation and Leadership in Teaching Profession from the Perspective of the Design: Towards a Real-world Teaching Approach. A reskilling revolution. in the Journal of the Knowledge Economy. This paper suggests a required fundamental revolution for teacher profession to properly meet the requirements of the Fourth Industrial Revolution. This study suggests that the teacher profession should be neither school-based nor university-based but, essentially and fundamentally, real-world-based..

Lim (2023) studied about Training needs analysis (TNA): the impact of the quality of teaching on student learning, staff satisfaction, and institute business performance. The Training needs analysis findings revealed that it was critical to ensure the motivation and attitude of the academic staff and teachers towards reskilling and upskilling in areas that would improve their work performance. Accordingly, four training recommendations with respective learning outcomes and overviews, and two non-training recommendations were proposed to heighten academic staff's and teacher's global awareness and motivation at work.

A Study of Achievement Motivation among Secondary School of Lucknow

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Abstract

Achievement motivation is a social psychology term that describe when individuals are driven inspired or stimulated by success or accomplishment force behind everyone action based on emotion and achievement goals. Achievement motivation leads some people to be high performs who desire success they can succeed complete while avoiding responsibility or task where they might fail achievement motivation also drive them to persist putting in long hour and hard work. Secondary education refers to the stages of formal education that follows primary education and precedes higher education. It is typically offered to students between the ages of 14 to 18, although the specific age range may vary depending on the educational system.

1. Introduction

To purpose of this study research today's rapidly changing and competitive world achievement motivation academic and personal success of secondary school students. Understanding the factors influencing achievement motivation among these students is of paramount importance for educators this study aims to explore and analysis the key to determine the education of achievement motivation among secondary school students. This research lies in the potential to inform educational strategies and intervention tailored to the specific needs of Lucknow. This study of factors shaping achievement motivation but also offer practical insight for educators and parents to support students on their educational journey.

2. Review

Nidhi (2023)all need of fulfilled of there secondary school students in relation the self the reach the peak of progress he can fulfill his responsibilities enjoy the relationship of among secondary school students describe the habits abilities outlook of a person.

Jyoti, (2022) academic achievement is the extent to which a students, teachers or institution has attain their short or long term educational goals. Academic achievement is commonly measured through examine or continuous assessment a number of factor have an impact on academic achievement.

Deepu (2021) he worked of the today information easily available to achievement motivation to the secondary school students pursuing to higher studies are using technology extensively attain their academic needs. The department of pedagogical science faculty education experience or aversion it may provide greater satisfaction of them.

Sushil (2021) they worked motivation is the internet psychological process that activate the person to fulfill his need by achieving the objective the objectives.

Reshma, (2019)she worked it refers to academic achievement the extent to which a student or a school or teacher has success in achieving the goal either it may be short term or long term academic goals. Its commonly measured through of examine for academic achievement motivation.

Anjali,(2019) several research studies as a great concentrate with the study of achievement motivation of adolescent adjustment and there academic achievement. There fore various adjustment problem forced by adolescent in various situation.

Baliram,(2018) academic achievement can be define as a excellent in all academic discipline in class as well as extracurricular activities in include excellence inspiring behaviour confidence skill.

Sumit Kumar (2018) knowledge of achievement motivation pronounciation of academic English words is very complicated as well as the English language awareness of the pronounce is adequate. To identify the remedies for improvement..

Aarti (2018) achievement motivation is effective more is effective more specially education is one recently developed areas motivation is term synonymous to general knowledge. In today's world that child about is successful who is special of field.

Manisha (2016) the present shift is education from emphasize to achievement motivation .How the focus is as the learner needs interest you inspiration it self management complete on professional inspiration learning of prospective teacher secondary school students.

Ramani,(2013) it is academic goals orientation is based contemporary goals as motive theory where it is posited that all success action are given meaning direction and purpose by the goal that individual seek out and that the quality and intencity of behavior.

Nasrullakhan (2012) achievement motivation to be the basis of a good life people who are oriented towards achievement goal general enjoy life and feel and control. Being them motivated keep people of dynamic and give them self respect..

Nutan (2012) they study academic achievement of senior secondary school students to their scientific method creativity emotional achievement and certain available educational is consider as an important of present developed as are students of achievement motivation.

N (2012) he worked psychological perception of life skill achievement students based one different standard components of secondary school students to success the level of guidance seed of adolescent students based on difficult standard components of guidance.

Kamil (2012) achievement motivation can be defined as the athlete's predisposition to approach situation in border sense it in achievement goal theory.

3. Conclusion

It was concluded that achievement motivation had no significant effect on vocational interest of secondary school students . The relationship between achievement motivation and vocational interest of students need of achievement theory explain why high achievers choose difficult or challenging task and why low achievement choose easier task at which they are like.

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Jain(2015) achievement motivation ,self Effeiciency, Academic Performance, Subjective well., being and among Dalit girl students grants commission final report, minor research, project

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Rajkumar(2016)gender differentiate in achievement motivation; self-efficiency academic achievement motivation of secondary school; 92016)

A Study of High School Students to Teach History Subject with the help of Multimedia

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ABSTRACT
Multimedia has emerged as a significant tool for improving teaching and learning experiences in the field of education. This paper investigates the tremendous impact of visual and verbal learning in multimedia teaching and learning environments, with a particular emphasis on the incorporation of images, films, and videos. Multimedia learning provide opportunities to the learners and those learners must take more responsibility for, and are more active in their learning. The adoption of a multimedia approach to learning can help to address the difficulty of making content/information more appealing, particularly for young students.

1. INTRODUCTION

Learning is a continuous process that occurs from birth to death. Learning practically coexists with living; learning is not only a trait of childhood and adolescent activities. Age is not a barrier to learning because learning new forms and values is a process that continues into adulthood and old age. Education is very vital in the lives of a human being. An individual's entire life is a process of earning and gaining new experiences. School, as an institution, imparts knowledge and educates pupils a variety of fundamental abilities. It provides students with a foundation in a variety of areas. Reading habits instilled in children at an early age enable them to pursue reading throughout their lives. Reading, writing, and elementary arithmetic (3Rs) are essential abilities for anybody in today's world.

The social sciences bear normative responsibility for developing and broadening the popular ground for human values. It is important to recognised that the social sciences, like the natural and physical sciences, lend themselves to scientific investigation. This becomes necessary to show how the methodologies used by the social sciences differ (but are not inferior) to those used by the scientific and physical sciences. Social Studies/Sciences will include curriculum from History, Geography, Sociology, Political Science, and Economics. The higher secondary level is essential because it provides students with a variety of things to study including multimedia. They have the option of taking either specialised academic courses or job-related vocational training. The foundation at this level should provide students with the fundamental information and abilities needed to make a meaningful contribution in the sector of their choice. Aspects of multimedia include characters, images, sound, and visual data. When a student chooses History as a topic in Higher Secondary, he or she is initiated into a methodical study of the subject and introduced to the rigours of the discipline. When designing courses in Indian history, make an effort to allow students to comprehend changes in all parts of the country, not only those that were crucial as centres of huge kingdoms and empires.

Multimedia refers to the presentation of numerous media formats in a synchronised manner, such that it appears to be a single media. It is the presentation of the same content to the user in more than one medium.

Key-Words   Social science, learning, Multimedia.

2. OPERATIONAL DEFINITION OF VARIABLES

History History is the study of life in society in all of its aspects in connection to current developments and goals for the future.
Multimedia   Multimedia is the use of variety of imaginative and communicative medium.

3. REVIEW OF RELATED LITERATURE

Prathusha Laxmi B (2019) research on Sleep scheduling in hash based geographic secured two phase routing for wireless multimedia sensor networks. In this paper researcher research on "to develop security methods for providing secure communication in the WMSN via node and message authentication with low computation power and to improve the network performance". And what was the fundamental security problem in WMSNs "providing security to the basic function of the routing (i.e.,) transmitting data packets in WMSN from the source to the destination using Hash-Based Geographic Secured Routing".

Solanki Anjali (2020) research on Development and Effectiveness of Computerized Multimedia Package for teaching English to Standard XI student. The author saw about the effect of computerized multimedia package on the achievement of students in English subject, context of group and level.

Karpagam R(2017) work on Effect of multimedia on awareness of consumer rights at higher secondary level. In this paper author identify education needs of the community. To achieve the aims of education, to develop a suitable curriculum, to determine appropriate strategies, to suggest remedies to overcome the above traced out obstacles, to manage the whole system of education, to identify the resources-human and non-human and to locate the major obstacles in the way of proper development of learners.

Babu Suresh (2016) Development of multimedia learning programme linked with website learning facility at school level for history subject. In this paper author find out the effectiveness of material in terms of development of competencies for using CAL web by learners; the opinion of teacher, students and teacher educators toward MMLP software in terms of user friendliness, flexibility and acceptance.

Anshumati (2016) Impact of multimedia package in music on the achievement of senior secondary school student of music of Punjab. In this paper writer finding out the impact of multimedia instructional material on the achievements of students of music.
Taking the feedback of students, learning Music concepts and Highlighting the use and utility of multimedia packages in Music Education.

Kamble Sadashiv Annappa (2009) Development and tryout of computer assisted learning package on organic chemistry content for first year science undergraduates. In this paper researcher research to identify the difficulties of B.Sc. Part-1 students in learning the organic chemistry concepts and analyze and select the organic chemistry contents to develop the computer assisted learning package. Author compare the effectiveness of computer aided teaching strategy with traditional teaching method and motivate the chemistry teachers and science undergraduates towards computer-aided teaching-learning.

Vora Mital (2015) Modeling and prototyping multimedia data warehouse. The research is to address the issue of modeling and prototyping multimedia data warehouse which addresses the provision of efficient data storage and access mechanism. Multimedia data warehouse needs optimization in the storage structure and needs the provision of design for improvement in access latency occurring in the query processing.

Rana Chanchal (2018) Impact of multimedia and e education on the academic per formance of school going children. In this paper the researcher explore the use of multimedia method and e-education in schools. He asses the impact of multimedia methods, the attitude of teachers & students towards e-education & e-education provided by the schools on the academic performance of the students.

Rai Pardeep (2010) Use of multimedia resources bythe library and information science distance learners of IGNOU a case study of delhi region. The author find out the Multi-media resources provided by IGNOU to its LIS learners, popular among LIS learners under study and know the suggestions of LIS learners regarding development, improvement of Multi-media resources of IGNOU.

4. CONCLUSION

This paper gives an idea about the initiatives taken by various sectors to employ computers in Indian school education. The conceptual framework provides the pic ture of the utilization of computer technology in Indian schools and by means it gives an idea about the feasibility of conducting present research. This will help the researcher to decide the requirements and features of multimedia packages being developed.

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Need of the hour: Involving Brain Breaks in classroom teaching.

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1. Introduction

Using brain breaks in everyday classroom teaching is essential in today's fast-paced educational environment because they address the increasing demands on students' cognitive abilities. These breaks provide students with opportunities to refresh their minds, manage stress, and improve attention spans, ultimately fostering a conducive learning atmosphere that enhances both academic performance and overall mental well-being.

Brain breaks can be viewed as a way to energize students, break up long periods of instruction and provide opportunities for movement and relaxation.

Brain breaks does not help students only in class but it makes student understand that such type of mental breaks can even be used to solve difficult problems of life.

If a teacher uses brain break in classroom teaching to change the set of mind of a child from boredom to excitement which increases the focus and interest of student, at the same time these experiences make student learn about how to bring life on track if at any point it is going on wrong track or I can say that having brain break experience in class, student understand how to bring back happiness in life by taking mental breaks or short breaks sometimes when the life is going towards unwanted situations.

Today educators want to use brain breaks in classroom teaching to make their class interesting but if we see its long-term lesson it teachers students to turn the sad part of life into interesting by taking some short mental breaks sometimes.

2. Operational Definition of Variables

Need of the hour : It is an idiom which means need or demand at a particular time or something that is necessary or important in the present moment.

Brain Breaks : Brain Breaks are quick structured breaks using physical movement, mindfulness exercises or sensory activities. They are small mental breaks designed to help students focus and attention.

Classroom Teaching : Classroom Teaching is a process that allows teachers to control the learning and direction of their classrooms. Classroom teaching means instructing students in an instructional educational setting.

3. Review study

Mobina Javed Mutab, Fatemeh Rezaei worked on "The Effect of Brain Breaks on Academic progress, Self-Efficacy and Interest in Physical activity of Primary School Students" (2023). Authors highlighted the need for planners and education officials to pay attention to the importance of the role of Brain breaks activities in improving Academic progress, Self-Efficacy and its effect on the level of interest in Physical Activity of Primary School Girls.

Ting Len Lim, G. Kuan, N.S. Chin, Mohd. R C Jusoh and Y C Kueh studied "The Effect of Brain Break on Health-Related Fitness among indigenous Primary School children." (2023). Their study recommended that school based Physical Activities to be followed regularly in the school for the children in order to improve their fitness & health.

Jesse Singh examined on the topic of "The Effect of Brain Break on student Academic Performance and Behaviours in the K-12 School Setting : A Meta Analysis" (2023). The purpose of this study was to assess the Effect of Brain Break in school based educational settings to improve skill related outcomes and to determine if Brain Breaks were more effective for specific (School and Student) population characteristics. Studies suggest that movement breaks may be effective but require further study of methods and types of Brain Breaks that may produce improvements in academic outcomes. Some teachers have +ve perception & some have -ve perception regarding Brain Breaks.

Gwendolyn A. Martin worked on the topic of "Brain Breaks : Strategies to help kids Destress and manage Emotions."(2023). Author explained that most children struggle with managing their emotions from time to time. However, children with mental health issues who learn and think differently may struggle more often- multiple times daily. Teaching children to take short Brain Breaks throughout the day can have real benefits of making them an integral part of kids' daily routines. Strategies including physical, sensory, mental Brain Breaks will be provided to help manage emotions and improve productivity at school & home.

Hannah Jaeger worked on "Impact of Brain Breaks on student Engagement in an Upper Elementary class." (2023) . The purpose of this study is to explore each type of Brain breaks such as Breathing or Relaxation, movement breaks or mental breaks that are related to academic instruction and to see which breaks are most effective. Researcher took 53 student of 4th grade classes in study. He concluded that student enjoy Physical Activity Breaks more but most effective for student focus was the combination breaks. They are most ideal break type to remain engaging for students, yet still create a calm & focused classroom environment.

Jeremy Dirks researched on "The Academic and Socioemotional effects of Brain Breaks in a Title 1 Elementary classroom" (2023). This research included 32 students of 6th grade from diverse back grounds with the majority of parcipants being Hispanic and Socioeconomically disadvantaged. They find that teachers should have an organized plan to outline when the Brain Breaks will be administered as well as the type of break. Ultimately teachers aim is to encourage students' academic and socioemotional progress including providing students with mental breaks to rest and recharge.

Sara Suarez Manzano, Alberto Ruiz Ariza , Alberto Mezcau Hidalgo, Emilio J. Martinez- Lopez worked on "Effect of an 8-week programme of active breaks between classes on Cognitive Variables in Secondary School" (2022). He concluded that this programme increased Attention, Concentration and Mathematical Calculations. Authors suggested to include 4 minutes of Active Breaks (Brain Breaks) to improve important School Variables.

Lauren A. J. Kirby, Paul T. Kurnman IV, Jennifer L. Robinson explained "Outcomes of Brain Breaks : Short consistent meditation and silent sessions in the college classroom are associated with subtitle benefits" (2021), they tested the Mindfulness Meditation (MM) or Control (C) on undergraduate students in psychology courses. Students who were involved in MM and C observed increase in patience, greater reduction in heart rates (HR) and greater mindfulness compared to non-participated classmates.

Biljana Popeska suggested "Implementation of Brain Breaks in the classroom and its effect on Attitudes towards Physical Activity in the Chinese School Setting" (2021), author examined brain breaks physical activity on primary school children and concluded to support positive effect of brain breaks on children's attitude. They enjoy and try to do best in physical activities. At the same time, they revealed that the teacher's role is very important in brain break activities.

Simantha Mc Farland explained "Brain Breaks in relation to modality of learning" (2021), studied the correlation between participation in brain breaks and their performance on academic assessments for the students having fully distance learning and then shifted to hybrid learning.

Alexander Anthony research on "Exploring classroom breaks in high school chemistry class"(2021), tried to understand the influence of various types of breaks on high school chemistry class, two major observations 1) all type of breaks show positive influence on students' feelings and emotions. 2) different types of breaks have different influence on students focus and emotions. Author suggested better to use guided breaks rather than free breaks.

Meghan M Barkar gave us an idea of " Brain Breaks Improve Student Behaviour and Focus" (2021), he studied the impact of brain breaks or physical activity breaks when implemented in the preschool classroom. They suggested that brain breaks should become a normal part or routine for the students and they are more engaged in on - task behaviour and less engaged in off - task behaviour.

Taylor Quiring worked on " Classroom Physical Activity Breaks" (2021), studied the impact of physical activity breaks (as Brain Breaks) focusing on off task behaviour students to engage them in class. The study concludes that physical activity break shows a positive effect on decreasing students off task behaviours.

Ayatullah Mohammad Resza worked on "Impact of Brain Breaks to supporting the physical activity during the Covid-19 Pandemic in elementary school" (2021), did survey on Students' perceptions on the use of Brain Breaks programs, where student did a Brain Breaks for a week and then filled the questionnaire to measure their opinions and attitudes towards Brain Break programs. The result shows that the Brain Break programs were excellent and beneficial from the aspects of physical activity especially during Covid19. He suggested that more research should be done on Brain Break programs, especially in Indonesia to improve the quality of education.

Taylor Ashley Autrey worked on "Minds in Movement: A study of the benefits of Brain Breaks for students with Sensory Processing Disorder" (2020), explained about Sensory Processing Disorder (SPD) --> A neurological disorder in which children with SPD are either over responsive or under responsive. Teachers were asked to identify these children in class and examine the impact of brain breaks on behaviour of students with SPD. Teacher concluded that " Brain Breaks is so effective that it gives opportunity to energize and restart." A Handbook was created to help teachers to understand SPD, identifying those children and engaging them with brain breaks.

Joe'l Vandor Waal worked on "Brain Breaks and engagement" (2020), describe the positive perception of students towards brain break which was of 3 minutes in which 2 minutes was given for physical activity and one minute for breathing and relaxation and this led to a good decision of teacher to continue using Brain Breaks in class.

Maddox, Kristine worked on "The Effects of Brain Breaks in classroom" (2019) studied that whether students test scores will improve by using brain breaks or not. Article concludes that teacher should understand that what type of brain breaks should be used in classroom to improve students test scores.

Garry Kuan, Hussein Rizal, Mawar Siti Hajar, Ayu suzailiana Muhamad, Yee Cheng Kueh all worked on the "Effect of Brain Breaks on Physical Activity Behaviour among Primary School children: A Transtheoretical Perspective" (2019), authors purpose of study was to measure the effect of BBPAS (BRAIN

BREAKS -PHYSICAL ACTIVITY SOLUTIONS) on the stages of change, decisional balance, process of change, self -efficacy and leisure time exercise among primary school children in Malaysia. They concluded that BBPAS was almost successful and thus recommended to be used in schools throughout Malaysia.

Neall Kelly studied the " Brain Breaks impacting student achievement"(2019), he examined the impact of brain breaks on students' achievement and collected data for first grade class for 6 weeks and got an conclusion that brain breaks had a positive effect on the achievements of students.

Isabel Celeste Valdez presented thesis on the topic of "Breaking the Brain barrier: The effect of Brain Breaks on Fidgeting Behaviours in a Lecture based College classroom" (2018) observed that it is difficult to concentrate for longer class, lecture style, crowded classrooms in colleges. So author suggested to increase learning environment, Professors or teachers should incorporate brain break activities into the College classroom. Incorporation of engaging, non-obstructive breaks into lecturer style of teaching.

Kimberly E. Fieler worked on "Brain Breaks go to College"(2018), they suggested to add physical activities as brain breaks in American students who are considered to be sedentary for long time in higher education. By adding brain brakes (2-5 minute) movement-based activities will change students' habit of sitting and just listening the lectures of teachers.

Michelle E. Ferrer and David D. Laughlin worked on " Increasing College Students' Engagement and Physical Activity with Classroom Brain Breaks" (2017), provided practical advice for implementing brain breaks within the College classroom. The article highlights student reactions to the use of brain brakes and provides recommendations for implementing them in the university setting.

Alyssa Weslake and Braverly Christian examined "Brain Breaks: Help or Hindrance?" (2015), they observed and mapped three different types of brain breaks like 1) Relaxation and Breathing, 2) Physical Activities, 3) Related to mathematics in class 3 for subject mathematics against student enjoyment/ engagement and then the time taken by students to re-focus on subject matters or lesson. They provided some future research directions and recommendations for practice and concluded that subject content related brain brakes are the best option for both student engagement and time taken to re-focus the class.

Jill turner cocking worked on " Building Movement and Brain Breaks into the primary classroom to maximize learning" (2015), he advised to apply the use of brain breaks and movements in classrooms which help students to learn and recall information because of increase in blood flow and the connections of neutral transmitters. He advised teachers handbook which includes brain breaks strategies.

Jacqueline stone examined "Effectiveness of Brain Breaks on Concentration and Ability to Answer Higher order questions in a 7th grade language Art class" (2015), he studied effects of brain breaks on students' concentration and higher order thinking skills in a 7th grade language art class of 50 minute duration for alternate days with and without brain breaks to compare the results and gave the conclusion that Brain Breaks support students concentration as well as their cognitive abilities.

Lori Desautels presented work on " Energy and Calm: Brain Breaks and Focused Attention Practices" (2015), it shows the positive impact of Brain Breaks and Focused Attention Practices in emotional states and learning. , Concludes that it refocus our neutral circuitry which increases activity in the prefrontal cortex were problem solving and emotional regulation occurs.

Ellie Donner researched on "Determining effectiveness of Brain Breaks on student performance"(2013), studied the effect of using brain breaks like short breaks on students of 16 to 18 years age of high school chemistry students but their study does not support an increase in assessment scores even after using brain breaks, though the research support to take short breaks to increase test scores of students.

4. Conclusion

Incorporating Brain Breaks into daily classroom routines is a pivotal strategy for promoting student focus, well-being, and overall academic success. By recognizing the significance of short mental breaks, educators can create a dynamic learning environment that not only enhances cognitive abilities but also nurtures a positive and supportive atmosphere for both students and teachers alike. Embracing the practice of brain breaks is not just an option; it's an essential investment in the holistic development of our education system.

In conclusion, integrating brain breaks into everyday classroom teaching is not just a luxury but a necessity.

In today's fast-paced and demanding educational landscape, the incorporation of Brain Breaks emerges as the need of the hour.

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Inner Technology: Need of the Hour for Secondary School Students: A Review Study

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Abstract
If you look at it, in today's time a person is losing himself in the glare of this world. Losing oneself means that one has to do with one's own internal powers. Today's busy life has some impact on the mental, physical and social development of the people. The progress that has emerged by living in the human society is continuously progressing and disturbing their mental state. The study in relation to these mental activities which added to the inner awareness somewhere within the person, self-improvement and mental development of the person.

1. Introduction

Inner Technology is a term which is mainly presented in the context of spiritual and personal development. Inner technology is very important to keep moving forward, nowadays progress, growth, development and continuous improvement means that if the society has to move uniformly, from one layer to a senior layer, then it is very important to use inner technology. Man tries to make life happy. He wants to make it new and new by bringing changes in his work and thinking. There are two aspects of human life which keep changing all the time. In a world that is increasingly connected and driven by external technological advancements, there exists a lesser-known realm of exploration known as "inner technology." Inner technology refers to a diverse set of practices, techniques, and philosophies aimed at unlocking the potential of the human mind and spirit. It focuses on understanding and harnessing the power within ourselves, rather than the external tools and gadgets that dominate our daily lives. This essay delves into the concept of inner technology, its significance, and its role in personal growth and self-discovery. Inner technology, often associated with spirituality and personal development, encompasses a wide range of practices and approaches. These include meditation, mindfulness, breathwork, yoga, visualization, journaling, self-hypnosis, biofeedback, and more. The core idea behind inner technology is to explore the inner dimensions of our consciousness and use this exploration to foster self-awareness, well-being, and personal growth.

Meditation techniques, such as mindfulness meditation, guide individuals to focus their attention on the present moment. They cultivate awareness, reduce stress, and promote mental clarity. Yoga combines physical postures, controlled breathing, and meditation to enhance physical and mental health. It harmonizes the body and mind, promoting inner balance. Breathwork practices emphasize the importance of breath control in influencing emotions and relaxation. They teach individuals to use their breath as a tool for inner transformation. Keeping a journal is a form of self-reflection that allows individuals to explore their thoughts, emotions, and experiences. It aids in gaining insights into one's inner world.

Visualization techniques involve creating mental images of desired outcomes. This practice is used to reduce anxiety, enhance performance, and manifest goals. Self-hypnosis helps individuals access their subconscious minds, enabling them to work on personal goals, habits, and self-improvement. These technologies provide real-time feedback on physiological processes like heart rate and brain activity, helping individuals gain control over these functions.

Spirituality refers to the emotional and spiritual state of an individual connected to their beliefs, values, and inner experiences. It goes beyond religion and can be a part of a person's quest for a deeper and more meaningful life. Spirituality can encompass various practices and processes, including yoga, meditation, mindfulness, and communication with a higher power, among others, to aid in personal development and the pursuit of inner fulfillment.

2. Operational Definition of Variables

"Inner technology refers to the tools, practices, and techniques that individuals use to enhance their inner well-being, personal growth, and mental and emotional health".
This concept encompasses various methods such as meditation, mindfulness, yoga, breathing exercises, and even mental frameworks like cognitive-behavioral therapy. Inner technology is often used to improve self-awareness, reduce stress, increase resilience, and foster a sense of inner peace and balance. It can be a valuable resource for individuals seeking to cultivate a deeper understanding of themselves and achieve personal development goals.

3. Review's on Inner Technology

Kinkhabwala (2020) "Spirituality as a Part of Education Curriculum-Dire Need of The Hour." Now, the time has come that education should be seen not only as a source of livelihood but also as a path for the development of mankind. Spirituality should always be a part of the education curriculum towards a holistic and comprehensive way of nurturing a student who becomes an asset to the society towards a sustainable life. Certainly many B-schools have started offering spirituality as a curriculum, but, the focus continues to be more on nurturing an ideology to prove itself as the most senior competent entity and protector of this planet earth. Education requires additional efforts.

Sampasa, Kanyinga and at all. (2022) "Problem Technology Use, Academic Performance, and School Connectedness among Adolescents school of Epidemiology and Public health," The researcher presented on the topic, that Little is known about the association between problem technology use in adolescents and school-related outcomes. The purpose of this study was to determine the prevalence of problem technology use and examine its association with academic performance and school connectedness in a sample of students across Ontario, Canada. Excessive use and problem technology use are highly prevalent among secondary school students, and they are associated with lower academic performance and lower levels of school connectedness.

Shivapuri, and Kumar (2015) "Internal academic audit: Needs of The Hour in hospitality Institute NCHMCT, India." mentioned in the article that Academy Audit is an important and essential part of any educational institution. It provides an opportunity for regular observation of the learning and teaching activities of any institution in its entirety. National Counselling for Hotel Management and Ministry of Catering Technology Tourist It is a private body under the Government of India. The researchers used questionnaire method to collect the data which was sent through email to all the institutions (n-51) under NCHMCT. The study revealed that 92% recommend a well-defined internal educational audit in hospitality under NCHMT.

Mahmood and at all. (2013) "Technology integration and upgradation of higher secondary education: need of the hour Pakistan" The above mentioned article was presented, that today, in view of the increasing influence of science and technology, especially information and communication technology, on every dimension of human life, many aspects of the world are rapidly responding to change for their betterment. Be wise to know that education is the center of development in all areas. Therefore this nation is now focusing on upgrading all teacher groups to free its youth from all the necessary examinations not just to survive but to lead their nation in the 21st century. Unfortunately, Pakistan is one of those countries which is lagging behind. A lot needs to be said for the betterment of education in schools and colleges. Higher secondary education requires special attention because this stage marks the transition from adolescence to early adulthood at the age of 16 – 18 years and hence children undergo significant changes in their overall personality.

Soma Banerjee (2021) "Inclusive educational technology for Diverse learners – need of hour." presented an article on the topic. The researcher pointed out that the expanded interest in considering students with learning disabilities in holistic education presents a complex test for current teachers to achieve the objectives of the comprehensive school education strategy in the progress of innovation. Made Easy This article describes specific assistive mechanical devices to improve instructional independence for students with learning disabilities. The article concludes by recommending some processes for increasing the availability of widespread instructional innovation.

Al-Ahdal & Mohammad (2013) "Integration of information and communication technology (ICT) into the education system of Yemen the need of hour." Presented article on That can help in increasing the use of ICT in the education system. This paper will help the policy maker to prepare some valuable education plans for schools, colleges and universities not only to integrate ICT into the curriculum but also to improve communication and other skills. Teacher learning experience with ICT will certainly go a long way in equipping high school children with the knowledge and human experience needed to compete and thrive in this competitive world.

Kulik (2003) "effects of using Instructional Technology in elementary and secondary schools What controlled Evaluation studies say sri International?" presented article on this report reviews the findings of controlled evaluations of technology applications in primary and secondary school. This report focuses on studies published since 1990 and reviews of studies published before 1990.

Tahir and Arif (2016) "Technology in Primary Schools Teachers' Perspective Towards the Use of Mobile Technology in Children Education" researcher presented article on the topic. that Today technology is progressively being recognized as a significant learning tool for helping young children in developing their cognitive, social and learning skills.This paper is an attempt to investigate the use of technology in primary schools for children and teachers. The paper also explores the attitude of teachers towards the use of mobile technology

for primary school age children and specifically in the context of education by using educational or learning applications (apps) for children both in homes and in school environment. This paper also sheds light on the use of technology in primary schools and also aspires to provide the guidance in order to overcome the concerns of teachers regarding technology usage in schools and to increase the accessibility of mobile technology in education for young children.

Islam (2021) "Impact of technological advancement on the educational sector of Bangladesh-An Empirical study on teacher of high Education" researcher presented article on the topic, This study focuses on the current development of technology in higher education from the educators' point of view. Every sector is adapting new technology to make things more efficient. Education sector is one of it, which started using technology not only just for administration purposes but also for changing the way of teaching methods. Technology getting involved in education has mixed influence on the educators. This paper discusses the impact of technology in the higher educational sector of Bangladesh.

Biswari (2020) "Technology:T he hour's need" researcher presented article on the topic, This case study includes the topic "TECHNOLOGY: THE HOUR'S NEED" which also covers the survey taken by me to various students. How technology is important in current scenario and how it is affecting our lives is the major discussion of this Research work.

Satapathy (2022) "Digital Pedagogy in teacher education: A need of the hour," Bhubaneswar, Odisha, India, researcher presented article on the topic. The researcher said that Digital pedagogy can be defined as a use of electronic elements to enhance or to change experience of teacher education. This paper tries to define digital pedagogy in a broad way.

Singh (2013) has researched on "Technology Integration in Teacher Education: An infusion or a delusion" Researcher presented article on the topic. the present study attempts to find out the state of technology integration in those teacher education institutions and schools of Patna in the State of Bihar, India that have the state-of-the-art technology status. The researcher studied the availability and accessibility of technology in the selected schools and teacher education institutions; the relationship between technology proficiency of pre-service and in-service teachers and their attitude towards integrating technology in education; and the relationship between frequency of faculty usage of technology in classroom instruction and attitude of pre-service teachers towards technology integration. Research outcomes showed that teacher education institutions are making efforts to use technology in teaching-learning while schools still follow the traditional method.

Saglam (2019) has researched on "The Integration of Educational Technology for classroom-Based Formative Assessment to Empower Teaching and Learning" Researcher presented on this topic as educational technology continues to change the face of educational contexts in the digital age, the way in which teachers can incorporate various existing online resources and applications within their everyday classroom activities deserves closer attention. This way, the efficacy of online tools and their ability to both facilitate teacher assessment practices and empower student learning can be adequately assessed. This chapter aims to explore, can be integrated into teachers' classroom-based language assessment to get information that can be used diagnostically to adjust teaching and learning with reference to current literature, explore challenges and focus on suggestions and avenues for further research.

Chirundu and Tapesana (2017) "Use of technology to Improve Healthcare Outcomes is the need of the hour"Use of technology to improve health care outcomes The need of the hour is how humans have become dependent on technology. At present humans are using excessive technology. This hinders the physical and mental development of individuals, which hinders their growth.

Satghare (2022)"Role of smart city mission in the development of smart tourism destinations in India: A need of the hour after the Covid-19 Role of Smart City Mission in Development of Smart Tourist Destinations in India Researcher Presents Article in 1 Hour Essential Post Covid-19 Epidemic Rigorous research studies highlight the need for a sea change in the industry in the application and innovation of tourist technology The research literature that has poured in is indicating that technology needs to manifest itself in innovation to go beyond this situation.

Kumari (2020) ICT in teaching, learning & assessment: Need of The Hour The researcher presented an article on the topic that ICT generally has a positive impact on teaching and learning. But the impact of ICT on teaching and learning should still be considered limited compared to the ideal model. Therefore, the need of the hour is to encourage technology driven education system. Achieving excellence in teaching, learning and assessment by teachers will ultimately achieve Digital India – one of the goals of our country.

Bhatt (2020) Blended and online Mode of teaching and Learning: Need of The Hour.The researcher presented a case on the above topic The year 2020 has been badly affected by the COVID-19 pandemic, due to which the entire world has faced socio-economic devastation and is harming humans on all fronts. The most serious blow is that the global education system is being seriously affected due to the implementation of lockdown and closure of schools and institutions. During this pandemic situation, blended and online learning played an important role in providing education to various students. This study explores the additional dimensions and different importance of blended and online learning in this pandemic situation. The researcher followed a conceptual, qualitative research methodology for this study. Finally, the study concluded that blended e-learning is using various e-learning technologies in classroom instruction to improve the teaching and learning experiences of students and teachers by allowing them to engage more actively.

4. Conclusion

In a world increasingly dominated by external distractions, internal technology serves as a means of exploring the depths of one's consciousness. It reminds us that our greatest "technology" is inside us, sitting there to discover and experiment with for our own growth and self-discovery. In a world that is often said to need a constant pursuit of external technological advancements, internal technology suggests we look inward. It is a powerful tool for personal growth, self-discovery, and overall well-being. Through practices like meditation, mindfulness, yoga, and more, individuals have the opportunity to tap into the immense potential within themselves. In this journey of self-discovery, they discover the beauty and complexity of their' inner world, becoming another support for us to move towards the surprising and fulfilling life within us. Internal technologies, therefore, serve as guides on the path to mastering and understanding them. It is worth noting that the efficacy of Inner Technology may vary from person to person, and what works for one person may not work that way for another. People commonly explore and experiment with different approaches to identifying and achieving their own personal development and well-being goals.

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Adaptive Learning: How Technology is Shaping the Future of education

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Abstract

Learning is mostly associated with activities involving computers and interactive networks simultaneously and users require that learning material/activities should be provided to them in suitable manner. This is origin of adaptive learning domain. For this reason, the adaptive learning system (ALS) must have ability to change its action to provide learning content and pedagogic environment/method for every student in accordance with her/his individual characteristics. Adaptive systems are researched and developed for a long time; there are many kinds of them. So it is very difficult for researchers to analyze them. In this study report, I collect scientific resources to bring out an overview of adaptive learning systems along with their features.

1. Introduction:

What is Adaptive Learning?

The primary concept behind adaptive learning, as the name suggests, is adaptability – the learning program gets aligned with the individual requirements of each learner using interactive, technology-enabled teaching techniques.

It uses computing algorithms, artificial intelligence, and machine learning to collect information about learners' knowledge, skills, and proficiency levels and analyzes it to suggest content, tasks, and courses that support their needs.

Here are the key criteria:

Collaboration between educators and learners for the proposition

Focus on learners and use technology only to add value to the solution.

Responsiveness to the individual journey of learners

Continuous feedback loop for adjustment and modifications

2. How Does Adaptive Learning Work?

Adaptive learning in education works in an incremental, step-by-step process. It leverages technology to continuously assess a learner's performance and accordingly adapt the content and pace of teaching. Here's how it works in a nutshell:

o Assessment of the Learner: This method starts with assessing the essential information of the learner, including their skills, knowledge gaps, strengths, and weaknesses, on a particular topic.

o Data Collection: As the learning process begins, the system monitors and collects data on the performance of the learner.

o Algorithms and Analytics: With advanced algorithms and tools, the adaptive digital learning platform now analyzes data to identify patterns, learning styles, competency levels, etc.

o Tailored Content: Based on the analysis, the system now delivers personalized content that supports each.

o Real-Time Feedback: These platforms offer real-time feedback based on the learner's performance, progress, and response. This results in self-managed learning.

o Engagement and Motivation: Adaptive educational systems often incorporate elements of gamification and interactivity to make the whole process fun and delightful.

3. Benefits of Adaptive Learning

• Diverse Content Sources: These systems allow you to integrate various content sources, including teacher-curated materials, publisher resources, user-generated content, and more. Exploring the available content sources and accessibility should be an important part of the planning process.

• One-on-One Interaction: Learners are the top priority of the adaptive learning management system. With its modular structure, the platform curates concise, relevant, and bite-sized content, including listicles, videos, audio, animations, podcasts, and infographics, that emulate one-on-one teaching and better learning experiences.

• Collaboration and Engagement: Adaptive learning technology helps you create efficient communication channels where learners can communicate and share information in real time. This, in turn, keeps engaged and motivated in their individual goals and careers.

• Growth Scopes: Learners can also explore a wide range of materials, including advanced courses, to challenge themselves further. Instead of getting stalled once they've mastered the assigned topic,

adaptive learning empowers individuals to engage in enrichment activities and take their learning to the next level.

- Time Efficiency: Since learners go through a personalized learning strategy, it enables them to prevent unnecessary redundancies or repetitions. Everyone can focus on the content that makes them more proficient, leading to saving time and resource utilization.
- Skill Development: Personalized adaptive learning helps in skill enhancement by pinpointing improvement areas and offering tailored guidance. As it addresses individual learning requirements, learners can acquire new skills or hone existing ones with greater efficiency.
- Data-Driven Insights: With valuable data and insights on learners' performance, progress, and behaviors, organizations can fine-tune their learning and development strategies and create training programs, keeping their business objectives in mind.

4.   The Future of Adaptive Learning

As technology continues to advance, so does the scope of adaptive learning and the need to understand individual learning. Adaptive learning already holds immense power and influence over the educational industry and is set to be more transformative in the upcoming years.

More and more organizations are now appreciating the remarkable potential of learning when they combine data, technology, and content to empower our learners in innovative ways. Personalization has become a common aspect of our daily lives, and it will continue to be a decisive factor in the educational and corporate workplace as well.

5.   Conclusion

Despite these challenges, adaptive learning is a promising approach to education that has the potential to make a significant impact on student learning. As technology continues to evolve, adaptive learning platforms are likely to become more sophisticated and affordable, and they will play an increasingly important role in the future of education.

Overall, adaptive learning is a valuable tool that can help educators personalize the learning experience for each student. While there are some challenges to overcome, the benefits of adaptive learning suggest that it is a worthwhile investment in the future of education.

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A parallel CNN approach to detect brain tumors in fMRI images

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Abstract:
It takes a lot of time to detect brain tumors manually. In the past years, different computer-aided diagnosis tools have been applied to deliver a precise and fast classification of brain tumors using medical images. Most of the machine learning algorithms are principled by the structure of preprocessing, segmentation, feature extraction, and classification. It is remarkable, that deep learning neural networks stood out to provide suit- able solutions to the brain tumor detection problem. Especially Convolutional Neural Networks yielded accurate results, due to their main purpose of classifying images. In this paper, a combination of two parallel CNNs followed by a fully connected network is proposed to classify brain tumors of fMRI images. Additionally, an autoencoder transforms the input before passing it to one of the two CNNs. The proposed model is compared to other proposed algorithms and other deep learning approaches. The accuracy measure and false negative rate should be utilized to evaluate the performance of the model. The research yielded results of an accuracy of 96.51 Showing the significance of further research on enhancements of this model.

Keywords: Neural network, Cascade CNN, fMRI, Brain tumor

1.   Introduction

Detecting brain tumors is a very difficult task. An additional challenge is the classification of the tumors. Not only the detection of cancerous tissue, but also the classification of the tumor type. There are various tumor types, divided into two main categories. The first one, the Benign tumor is noncancerous. It is slow-growing and does not spread to nearby tissues. Nevertheless, they have severe symptoms and can cause death. The cancerous tumor type, Malignant, is fast-growing and aggressive. Unlike the Benign tumor it invalids surrounding brain tissue and is likely to recur after treatment. The exact type of the tumor is defined by its location [1].

To get an insight to the brain tumor tissue, different methods allow to generate medical images of the human body. Functional Magnetic Resonance Imaging (MRI) is a non-invasive method to create 3D medical images of the human anatomy. Unlike X-ray or CT scan, it uses a magnetic field instead of radiation. It is mainly used to detect diseases or to monitor the medical dosage and response treatment regulation. fMRI is especially used for brain analysis where it can distinguish between grey and white matter [3]. It provides a clearer anatomical structure than other imaging techniques [4]. Functional MRI (fMRI) is a specialization of MRI that can measure and map brain activity by detecting changes in blood flow and oxygenation levels in response to neural activity.

As CNN's main purpose is image recognition it can be used for analyzing MRI images. The (convolutional) layers of these networks are specifically de- signed to discern hierarchies of features within images, thus rendering them remarkably efficient in unraveling the nuanced details present in MRI scans. This inherent capability simplifies the detection of anomalies, such as brain tumors, which may manifest as subtle variations in tissue composition and structure. CNN focuses on image classification over the locality. This ensures that the patches of the images are evaluated independently. It simplifies the detection of anomalies, such as brain tumors, which may manifest as subtle variations in tissue composition and structure [5].

To improve the results of the simple CNN. Connections of different models and algorithms have been proposed to enhance the classification performance.

The paper's remaining sections are arranged in the following manner. Section 2 describes various literatures, while Section 3 describes the proposed methodology. Conclusion and discussion of Section 4 on performance metrics are presented in Section 5.

2.   Related work

The problem of brain tumor detection has been tackled by various algorithms that have been proposed. Asma Naseer et al [7] (2021) proposed a 12-layer deep Con- volutional Neural Network (CNN) with data augmentation. The preprocessing steps were greyscale conversion and the data augmentation which included scal- ing, flipping (horizontally and vertically) as well as rotating the image at 45 and 90 degrees. The proposed CNN has been trained in six different datasets.

The proposed deep network model was trained on only 28% of the data, and tested on the remaining 72% of data that was completely unseen, derived from various brain tumor MRI datasets. Their approach revealed accuracies between 98.6 and 100% for the datasets.

Javaria Amin et al. (2021) [4] made a comparative analysis on different methods. The results show that deep neural networks can achieve accuracies up to 100%, but require high computational power and large memory

capacity. P Gokila Brindha et al [8] (2021) compared the performance of an ANN and a CNN. The ANN has seven layers while the proposed CNN consists of 18 layers. The CNN predicts the images by reducing their size. However, there is no loss of information. The test accuracies of the two models were as follows: 65.21% for the ANN 65.21% while for the CNN it was 89%". According to the results, the CNN is the superior model for detecting brain tumors using MRI [3]. According to the study, using more data for training can increase the accuracy of the ANN model.

In response to the challenges of classical CNNs, advanced CNN architectures like ResNet and DenseNet, and techniques such as bottleneck structures have been developed. These innovations address the intricacies of building deep networks, ensuring better performance in noisy data environments. In addition, Hybrid Convolutional Neural Network (HYBRID-CNN) has been disclosed. Their data input is divided into two channels, with a Deep neural network (DNN) memorizing global features (1D data) and a CNN generalizing local features (2D data). Feature extraction, feature merge (self-attention) to fuse/merge key features, and a fully connected neural network for detection are the three phases. They have a lower false alarm rate and a higher detection accuracy [9].

Hashemzehi, R., Seyyed Mahdavi, S. J., Kheirabadi, M., & Kamel, S. R. (2020) [10] proposed a Hybrid CNN-NADE model. It was made of two CNNs, each consisting of five layers, followed by a fully-connected network of three layers. Additionally, a neural autoregressive distribution estimation (NADE) model was added in front of one of the CNNs. The NADE not only estimates the distribution of brain cell placement but also performed data aug- mentation on denoised images. Overall, an accuracy of 95% has been achieved. The proposed work dealt with the limited availability of data and unbalanced samples by applying the NADE.

Another work proposed by Swarup, C., Singh, K. U., Kumar, A., Pandey, S. K., Varshney, N., & Singh, T. (2023) [11] compared existing CNNs: AlexNet and GoogLeNet on preprocessed and augmented data. The GoogLeNet accuracy was 99.45% compared to the 98.95% accuracy of the AlexNet. The precision of nearly 95% was higher compared to VGG-16, ResNet-50, and Inception-v3. Due to the preparation of the data at the beginning, the computational costs of the model could be reduced.

Aleid, A., Alhussaini, K., Alanazi, R., Altwaimi, M., Altwijri, O., & Saad, A. S. (2023) [12] used multilevel threshold based on harmonic search optimization (HSO). The results show, that it outperforms unsupervised clustering methods and needs less computational power than other models like RescueNet. The average accuracy of the proposed model was 99.5% on the BratS 2017 dataset. Jemimma, T. A., & Vetha Raj, Y. J. (2018) [13] proposed a method using probabilistic fuzzy C-means algorithm and DBN for image segmentation and classification. For training, the steepest descent algorithm was used. The performance was measured using accuracy, sensitivity, and specificity in which they achieved 95.78%, 96.8%, and 93.75% on the BraTS database.

Apostolopoulos, I. D., Aznaouridis, S., & Tzani, M. (2023) [14] presented a work with an Attention Feature Fusion VGG19 (AFF-VGG19) network to grade, classify different disorders and brain abnormalities. Three feature-fusion blocks, each consisting of batch normalization, dropout, and global average pooling layers were applied. One of these five-layered attention modules was added behind the second, third, and fourth set of convolution layers, resulting in a robust multi-path network. The accuracies for the different datasets were between 0.9353 and 0.9565%.

Golda Tomasila and Andi Wahju Rahardjo Emanuel [9] (2020) reviewed different machine learning techniques. Additionally, they presented/they pointed out the importance of using the following preprocessing steps: brightness adjustment, thresholding, filtering and skull masking. They compared different combinations of algorithms used for segmentation, feature extraction and classification. The range of accuracies stretched from 83% to 98.86%. The highest accuracy was achieved by a combination of Fuzzy C-Means for segmentation, GLCM for feature extraction and SVM as the classifier. According to their comparative analysis, SVM supported by radial basis function (RBNFF) is the best classifier.

3. Proposed Methodology

In this section, the applied methodologies like preprocessing and augmentation, as well as the used model are explained. Further, the performance measure and the results are being named.

3.1 Dataset

A dataset containing fMRI images of human brains has been used to train and test the model. 3064 T1-weighted contrast-enhanced images from 233 brain tumor patients are included in the data. Three different types of brain tumors are depicted in the image: meningioma (708 slices), glioma (1426 slices), and pituitary tumor (930 slices). More than 30% of all brain tumors are caused by meningioma, which is the most common primary brain tumor. The meninges, which are the protective lining of the brain, are the site of meningiomas. The majority of benign tumors are detected by women and are usually benign tumors. The glial cells are where gliomas originate. About 33% of all brain tumors are gliomas. The pituitary gland is the site of abnormal growth known as pituitary tumors. The majority of them are benign and do not spread to other parts of the body. Most pituitary tumors don't cause symptoms. Their influence on the pituitary gland can lead to malfunctioning hormone production. However, they

can result in the pituitary producing too little or too much hormones. By pressing against the nearby optic nerves, it can cause problems in the body or vision problems. [2].

Matlab data format is used to organize the data (.mat file). Each file stores a struct containing the following fields for an image: label, patient ID, image data, a vector storing the coordinates of discrete points on the tumor border, and a mask, a binary image with 1s indicating tumor region.

3.2   Preprocessing and data augmentation

Preprocessing plays a vital role in enhancing image quality and reducing un- wanted noise. This phase encompasses a wide range of techniques, including adjustments to brightness and contrast, as well as operations like normalization, rescaling, and quality enhancement, all tailored to the specific needs of subsequent processing methods.

Image preprocessing involves various tasks, such as fine-tuning brightness, contrast, normalization, and more, to optimize MR image quality. Furthermore, it aims to enhance specific aspects of MR images, such as boosting the signal- to-noise ratio, refining visual clarity, eliminating extraneous noise and undesired background elements, smoothing the internal region, and preserving its edges [6].

Data augmentation is a critical process that introduces artificial variations into the data, encompassing adjustments to contrast, rotation, and other parameters. Through this technique, the model learns to recognize and adapt to diverse scenarios.

3.3   The model

The proposed model is a combination of a Cascade CNN and an autoencoder. In the following subsections it is going to be described more in detail.

3.4   Autoencoder

Autoencoders are composed of two fundamental parts:

Firstly, the Encoder takes an input and projects it onto a lower-dimensional vector called the embedding. In this context, the encoder is implemented using Convolutional Neural Networks (CNNs). The encoder's role is to grasp the mapping function that transforms a sample into an embedding. Secondly, the Decoder comes into play. It accepts the embedding vector generated by the Encoder as its input and endeavors to reconstruct the original sample. Similar to the encoder, the decoder of the proposed model is also structured as a CNN. It takes the embedding vector and generates an output that mirrors the shape and value range of the input sample.

Transposed convolution, is a mathematical operation commonly used in neural networks, especially in the context of convolutional neural networks (CNNs) and image processing. It is used in the decoder to up sample an input feature map. The two components, the Encoder, and the Decoder, are then integrated to form a unified model known as an Autoencoder. Consequently, the network's main objective is to learn the identity function, essentially training itself to recreate the input from the input data. More precise, the decoder consists of (autoencoder architecture).

3.5   Cascade Convolutional Neural Network

A CNN's primary purpose is to perform image recognition. It is able to detect the most relevant key information in time series or image data, wherefore can be used for medical image analysis. The neurons of a CNN are organized in three dimensions, the spatial dimensionality of the input, described by height and width, and depth. This allows the CNN to preserve spatial information.

The principle of Convolutional allows to down sample the input. A filter slides over the input feature map, and for each position, it computes a weighted sum of the values within its receptive field to produce a single output value. This process reduces the spatial dimensions of the input.

The proposed work is to develop a Cascade CNN to enhance the performance of a simple CNN. It consists of three partial models: two parallel CNNs and a fully connected network. There are 5 layers in the initial CNN, which include a convolutional layer, a Max Pooling layer, a convolutional layer, a global average pooling layer, and a dense-output layer. It receives the normal input data. The second CNN consists of 7 layers. It has a similar architecture to the first CNN but an additional convolutional layer is added after each of the convolutional layers of CNN1. CNN2 does not receive the raw input. At first, the input is passed to and transformed by the autoencoder. Thirdly, a fully connected network is added behind. It consists of 3 dense layers and takes the concatenated input of CNN1 as well as CNN2.

The fig 1 below depicts the complete model's architecture. The four partitions that make up the model's design include two CNs, an estimate of distribution estimator, and a fully connected network. In the phase of density estimation, the MADE model is created to choose the proper joint allocation. The fundamental goal of MADE (Fig 2) is to modify the autoencoder's interconnects using masked weights in order to bring them into compliance with the autoregressive condition.
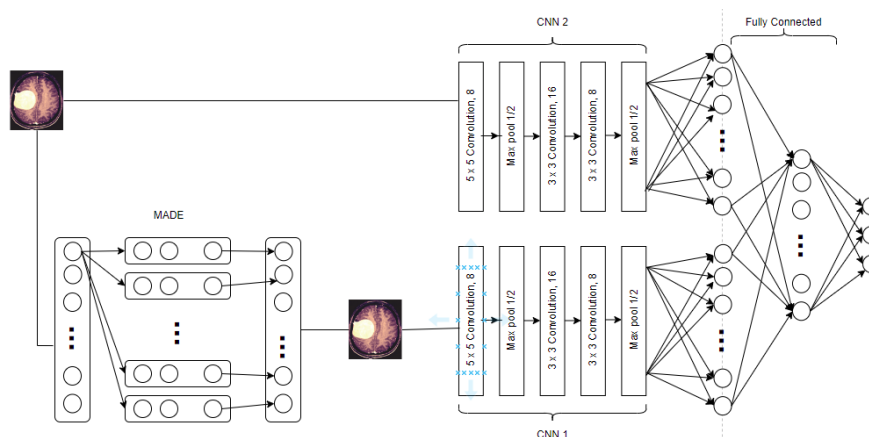
Fig 1. The parallel-CNN architecture that has been proposed
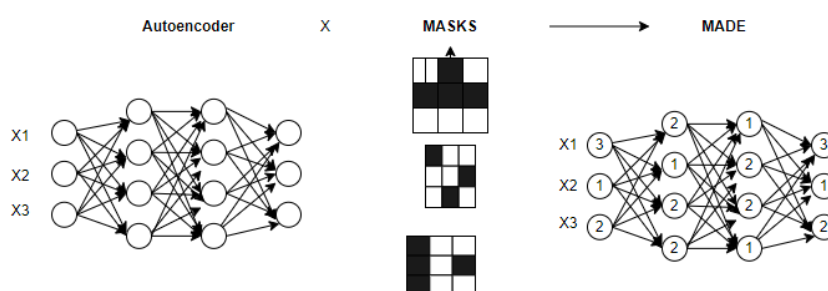
Fig 2: Architecture of MADE

4.   Results

The models train and test performance on the dataset has been evaluated using the accuracy measure. Table 1 compares the hybrid characterization system (HCS) described in. It combines discrete wavelets that are (DWT) and PCA for the extraction of features with feedback and nearby k-nearest network classifiers. The proposed method also differs from the CNNs employed, SVM [2], AlexNet [41], and DWT [42]. The method advocated in this article makes an effort to create a quick parallel network with low calculation costs while preserving precision.

	Parallel CNN	SVM [6]	AlexNet[15]	DWT[16]
Accuracy	96.51	96.03	95.77	95.90
Sensitivity	94.64	94.14	94.10	93.84
Specificity	97.42	96.53	96.33	96.75
Precision	94.49	93.26	93.33	94.26
F1-score	94.56	94.45	93.79	94.48

Table 1: Comparing this work with different patterns.

5.   Conclusion and Discussion

A combined structure of neural autonomous distribution forecasts and a structure of CNN were used in the present research to create a technology for categorization for brain tumor magnetic resonance images. This structure not only removes unfavorable characteristics and reduces the boundary of malignancies in the brain, but also extracts characteristics that are helpful in identifying images. This algorithm displays outstanding results at an accuracy rate of 96.51% in presenting just a handful of imbalanced brain tumor classification datasets after it has been trained utilizing a 6-fold validation cross-validation approach and the Adam optimizer. The combined design is also compared to three well-known intelligence strategies that are stated in the literature. As an outcome of this investigation, a hybrid framework is a practical tool that might be used in health care imaging scenarios. The suggested method improves some parameters, including sensitivity, accuracy, specificity, and dice coefficient, according to many performance indicators, to produce better results. The proposed method facilitates the precise location of a brain tumor and the rapid and accurate detection of such tumors based on the experimental results. The suggested technique is crucial for finding brain cancers in MR images. The proposed technique's ability to distinguish between healthy and sick tissues using MR images was demonstrated by the results of the tests, which

showed 94.49% precision. The proposed strategy has been found to be suitable for integrating medical decision-support technology into radiologist screening and initial assessment, based on our investigation. For further improvements of categorization in ongoing work, we plan to explore the schematics chosen by the classifier in other work by combining multiple classifiers with characteristic selection techniques.

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Developing a Personal Philosophy of Education

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1.   Introduction

Philosophy of Education encapsulates essentially the principles, the ways of thinking and the beliefs that provide the foundation and the framework on which teachers define, delineate, and justify their teaching agendas, their curriculum preferences, their pedagogical styles, their classroom organizational structures. Creating a personal philosophy of education can help us articulate our approach to teaching in a clear, concise way. It can also help us express why we think being a teacher is so important.

A philosophy of education is a set of beliefs and guiding principles for teachers. It helps us make decisions about how we teach our students.

It's also a useful tool when it comes time to communicate our beliefs to other people, including:

Parents

Your teaching team

School administrators

Potential employers in a job interview

Creating a philosophy of education is a great way to set teaching goals for ourselves, and can even help us identify areas for further professional development. Every teacher has different teaching strategies hence they have their personal philosophy of teaching as well.

Every human being has some sort of philosophy based on what we express in our interactions with the world and carry with us the unseen into the various spectrum of life: politics, relationships,

education and so on.

2.   Key features to develop a Personal Philosophy of Education

Structure and repetition is key. Teachers should work from well-organized plans and schedules in a consistent manner so students have a supportive learning environment.

Teachers must hold students to high expectations. Every student has the ability to succeed, given the right teaching methods, resources and support. It's the teacher's job to encourage students to be diligent and strive for growth in their learning.

Students need effective tools and resources. Teachers should have access to a wide variety of excellent learning and educational resources in order to fully support student learning.

Teachers should be great examples. A person in leadership has a responsibility to lead by example. This will cover many aspects, but teachers should model respect, discipline and problem-solving for their students.

Teachers offer the gift of learning. An educator's job is to guide students through the principles of learning and fulfill their need for education. A teacher's gift to their students should be motivating them to continue to learn, and helping them succeed in the process through good classroom management, solid educational theory and consistent teaching practices.

Learning goes beyond the classroom. Everyone, from parents to teachers to members of the community, has a role to play in developing a well-rounded education. Involving stakeholders in the education process in a meaningful way helps students understand multiple perspectives and build critical thinking skills.

Feedback, in both directions, is a key part of the learning process. While teachers generally give feedback to students in the form of assignments, regular communication and feedback can help improve teaching. Short feedback forms and creating a culture where students feel safe to speak out can improve the quality of learning for teachers and students.

3.   Steps of developing personal philosophy of education

Developing a personal philosophy of education is a reflective process that involves clarifying your beliefs, values, and goals related to teaching and learning. Here are some steps to help you develop your own philosophy of education:

1. **Self-reflection**: Begin by reflecting on your own educational experiences, both as a student and as a potential educator. Consider the teachers, mentors, and educational environments that have had a significant impact on you. Think about what you believe makes a great teacher and a great learner.

2. **Identify your values and beliefs**: Take some time to identify your core values and beliefs about education. What do you think the purpose of education is? What do you believe about the nature of knowledge, learning, and teaching? What are your views on student diversity, equity, and inclusion? Write down your thoughts and i

3. **Read educational philosophy**: Familiarize yourself with the works of prominent educational philosophers and theorists, such as John Dewey, Jean Piaget, Maria Montessori, Paulo Freire, and others. Reading their writings can help you understand different perspectives on education and stimulate your own thinking.

4. **Consider your teaching goals**: Think about your teaching goals and objectives. What do you want to accomplish as an educator? What outcomes do you hope to see in your students? Your philosophy of education should align with your teaching goals.

5. **Examine educational theories**: Explore various educational theories and approaches, such as behaviorism, constructivism, and progressivism. Consider how these theories align with or challenge your own beliefs about teaching and learning.

6. **Reflect on your teaching practices**: Evaluate your current teaching practices and methods. What strategies do you use in the classroom, and why? Are there aspects of your teaching that you would like to change or improve? Your philosophy of education should guide your teaching decisions.

7. **Engage in discussions**: Engage in discussions with colleagues, mentors, and educators who have different perspectives on education. Listening to others' viewpoints can help you refine your own philosophy and gain new insights.

8. **Write your philosophy statement**: Start drafting your philosophy of education statement. This statement should succinctly express your beliefs and values about education. Use clear and concise language, and be sure to explain how your philosophy informs your teaching practices.

9. **Revise and refine**: Review your philosophy statement and seek feedback from trusted colleagues or mentors. Revise and refine your statement based on their input. It's essential that your philosophy of education accurately reflects your beliefs and intentions.

10. **Implement and reflect**: Put your philosophy of education into practice in your teaching. As you gain more experience, continue to reflect on your beliefs and adapt your philosophy as needed. Education is an evolving field, and your philosophy may evolve with it.

Remember that developing personal philosophy of education is a personal and ongoing journey. It may change and evolve over time as you gain more experience and encounter new ideas and challenges in the field of education.

4. Review literature

- **"Developing a Teaching Philosophy Statement" by Nancy Van Note Chism**
  This article, published in The Ohio State University's Center for the Advancement of Teaching, offers a step-by-step guide to developing a teaching philosophy statement. It provides practical tips and examples.
- **"Constructing Your Teaching Philosophy: A Step-by-Step Guide for Graduate Students" by Jennifer Hancock and Mary-Ann Winkelmes**
  Published in the Journal of College and Character, this article outlines a systematic approach to constructing a teaching philosophy statement, with a focus on graduate students in higher education.
- **"How to Develop a Personal Philosophy of Education" by Josh Kaufman**
  In this article on The Personal MBA blog, Josh Kaufman discusses the importance of having a personal philosophy of education and provides a concise guide on how to develop one.
- **"Defining Your Own Teaching Goals" by Maryellen Weimer, PhD**
  This article on Faculty Focus explores the process of defining your teaching goals, which is an essential step in developing your philosophy of education.

- **"Crafting Your Teaching Philosophy" by Chris Clarke**
  Published in Faculty Focus, this article explores the concept of a teaching philosophy statement and offers advice on crafting one that reflects your beliefs and values.
- **"Developing a Personal Philosophy of Teaching" by Andrew J. Cavanagh**
  This article, published in The Teaching Professor, discusses the benefits of having a personal philosophy of teaching and provides a framework for its development.
- **"A Practical Guide to Developing a Teaching Philosophy" by Peter J. Schwartz**
  Published in American Journal of Pharmaceutical Education, this article provides a practical guide for educators in the field of pharmacy on developing their teaching philosophy.
- **"Reflecting on Teaching: A Developmental Approach to Developing a Teaching Philosophy" by Claudia J. Stanny**
  This article, published in The Journal of Faculty Development, explores the development of a teaching philosophy through reflection and offers insights into the evolution of teaching philosophies over time.
- **"The Development of a Personal Philosophy of Education" by David J. Nowak and David C. Wheeler**
  This article, published in the Journal of Classroom Interaction, provides insights into the process of developing a personal philosophy of education and discusses how it can impact teaching practices.
- **"Constructing a Philosophy of Teaching" by Stephanie P. Jirard** –
  This article, featured in The Clearing House: A Journal of Educational Strategies, Issues and Ideas, explores the importance of constructing a personal philosophy of teaching and offers a step-by-step guide to help educators develop their own.
- **"Teachers' Personal Philosophy and Goals" by Edward M. Royzma**n
  In this article published in the Journal of Educational Psychology, the author discusses how a teacher's personal philosophy and goals can influence their teaching style and the outcomes of their students.
- **"Developing Your Own Educational Philosophy" by Greg Anderson**
  This article, available on the website of the American Montessori Society, guides educators through the process of developing their personal philosophy of education, drawing on principles from the Montessori approach.
- **"Teacher Philosophy: Development and Impact" by Michael S. Johnstone**
  This article, published in The Clearing House: A Journal of Educational Strategies, Issues and Ideas, examines the development of teacher philosophy and its impact on classroom practices.
- **"A Personal Philosophy of Education: Pre-Service Teachers' Beliefs and Practices" by M. Leigh Smith and Anne Rowell**
  This article, found in the Journal of Education for Teaching, explores the relationship between pre-service teachers' personal philosophies of education and their teaching practices.
- **"The Role of Educational Philosophy in Teacher Education" by Julie Allan and Peter Cowan**
  This article, published in the Journal of Philosophy of Education, delves into the importance of educational philosophy in teacher education programs and offers insights into how to foster the development of a personal philosophy of education.

You can access these articles through academic databases like JSTOR, Google Scholar, or your institution's library resources. Reading these articles will provide you with a deeper understanding of the process of developing a personal philosophy of education and its significance in the field of teaching and learning.

5. Conclusion

A personal philosophy of education is not static; it is a living document that evolves with our experiences and reflections. Developing this philosophy is an ongoing journey, marked by self-discovery, exploration of educational theories, and the practical application of our beliefs in the classroom. Personal philosophy of education will serve as a compass, guiding our decisions, actions, and interactions as an educator, and contributing to the positive transformation of both our students and the broader educational landscape.

Comparative Study of Scientific Logic and Religious Logic among Adolescents

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Abstract

This study investigates the interplay between scientific and religious reasoning in adolescent. Through this study we know that how adolescents perceive and reconcile their belief in science and religion. Our findings suggests that adolescent often navigate a complex relationship between these two domains, with factor such as family influence, education and personal experiences shaping their perspectives. We discuss implications for understanding the development of belief systems during adolescence and the potential for fostering dialogue between science and religion in educational settings.

1. Introduction

When we talk about scientific and religious logic, there is the contradiction between two ways, where one side talks about the scientific (functional) side and other spiritual side, both are complementary to each- other. while both the logical process is to be considered from the adolescent's perspective, at some places they conflict with each other and at other times they appear to be supportive of each other.

After knowing the entire review study, we can say that where science presents a logical and solid aspect of anything, spiritual logic provides its basis. and in modern times, while one side seems to be more influenced among the teenagers, the other side seems to be lagging behind somewhere, that is the more every adolescence gives to be believed anything on scientific basis the more they move towards spirituality. The viewpoint is same how lagging behind the scientific side but not a single aspect can be denied because both the parties are talking about everything from universe to death. Therefore, both sides come to a centre somewhere in their argument I.e. at a conclusion which is the almost the same example- spirituality also believes that the universe was created from the molecular elements. due to the glamour of modernity. indifference towards spirituality is being seen among the teenagers. he is seen arguing on scientific basis in everything. therefore, it can be said that this study is a very important and modern basis based on the arguments of teenagers from both sides, which is important from both present and future perspective.

2. Operational Definition

Scientific logic: Scientific logic involves using Systematic and rational reasoning to formulate hypothesis gather evidence, analyse data and draw valid conclusion in a way that is transparent and based on empirical observation.
Religious logic: Religious logic is a mode of reasoning based on faith, beliefs and teachings of a particular religion, often guided by religious text and doctrine rather than empirical evidence or scientific principles.

3. Review Literature

Yasri & Rebecca (2012), Understanding student approaches to learning evaluation in the context of their perceptions of the relationship between science and religion, in this topic author has talked about relationship between science and religious examines several positions on wine relationships and also examines the ability of these positions to explain student's perspectives when learning about evaluation.
Hanley at al. (2014), The interrelationship of science and religion: A typology of engagement, in this topic author has taken 200 students who was 14 to 16 years old. after study they have founded some positive and negative aspects and opinions about science and religious.
Dagher Z.R & Bou Jaoude(1997),Scientific views and religious belief of college students: The case of biological evaluation, the purpose of this study was to explore how some university biology majors in Bairut, Lebanon. accommodate the theory of biological evolution with their existing religious beliefs.
Rolston,H.(2006), Science and religion :A critical survey, Both scientific and religious arguments have been emphasised in his writings the main objective of his writings is that any questions cannot be solved only with the help of science,it has to go through religions also.
Barnes,M.H.(2009),Stages of thought: The co-evaluation of religious thought and science, In this topic, borns talked about the pattern of cognitive development that emerged between science and religions. Also, the successive stages of Co-development of religions and scientific ideas in the West from earlier cultures to the present time have been described.
Phetres & Nguyen (2018),Using findings from the cognitive science of religion to understand current conflicts between religions and scientific ideologies, In this topic with the help of cognitive science, the contradictory idea between religion and science has been revealed also, how this topic can guide future studies has been considered .

Roth,W.M.(1997),The interaction of students scientific and religions discourses: Two case studies, This is a case study in which the objective of the answer was to make the school students think from both scientific and religious perspective through the school educational setting, in which both agreeable and contradictory views should come out openly.

Abdullah, M.A.(2014) Religion, science and culture: An integrated, interconnected paradigm of science, This topic objective is it has been said to integrate the relation between Islamic, religions, natural and social subjects as well as cultural sciences as well as reconstruct religion, science and culture on the basis of methods of scientific study.

Kng,H.(2008),The beginning of all things: Science and religion, In this topic writer point out the importance of science and religion correlation, both complement each- other and one is incomplete without the other and we study anything on the basis of these two.

Polkinghorne, J.C.(2005),Exploring reality: The interwinnng of science and religion, in this, various dimensions of reality have been shown from the perspective of science and religion. All religions Are considered equal.at the same time, it has been said that all human beings should be seen equally in their insight and faith also, all the ideological, similar and opposing dimensions meet at a centre somewhere hence everything is equal.

Ferngren,G.B.(2022), Science and religion,Through this article both negative and positive aspects of religion in the 18th century have been shown. but Gary in his article described both the subjects as complementary to each other. Also, the department went to Darwin's theory of evaluation which was influencing both the aspect that time.

Davoodi,& Lambroz(2022), Explaining the existential: Scientific and religious explanations play different functional roles, Through this article an attempt has been made to study science and religion from a philosophical perspective. In conclusion, theories of the relationships between religion and science have been informed and they have provided insight into accounts of the coexistence of scientific and religions expedience.

Stenmark, M.(2004),How to relate science and religion: A multidimensional model, In this review we found that author tried to make adjustment between both subject (science and religions) Stenmark shows the ongoing though shifting value of both subject played out as a dynamic relationship.

Leech, & visala (2011), The cognitive science of religion: A modified theist response, in this topic writer propose a modified defense of a compatibility of the CSR account with theism which supplements extant theistic arguments by drawing out the implications of certain points about the nature of CSR explanation which have so far been left relatively unexploited.

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4. Conclusion

Adolescents often navigate a complex interplay between scientific and religious logic. While some may prioritize empirical evidence and logical reasoning found in science, others rely on faith and spirituality. It's essential to foster open-mindedness, respect diverse perspectives, and encourage critical thinking to help adolescents find their own balance between these two realms.

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Relevance of Teaching Social Science at School Level

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1. Introduction

Social science education is a multifaceted and interdisciplinary field of study that seeks to provide students with a comprehensive understanding of human society and the involved web of factors that shape it. This educational discipline encompasses a wide range of subjects, including history, geography, civics, economics, sociology, political science, anthropology, psychology, and cultural studies. The primary objective of social science education is to equip students with not only factual knowledge but also critical thinking skills, analytical abilities, and a deep appreciation for the complexities of human behaviour and societal structures. Through the study of social sciences, students gain insights into historical events, economic systems, political ideologies, cultural diversity, and human interactions at local, national, and global levels. It encourages students to explore the dynamics of societies, past and present, fostering a global perspective, civic engagement, and a sense of social responsibility. Ultimately, social science education empowers individuals to navigate and contribute meaningfully to the ever-evolving world in which they live.

The importance of education in shaping individuals and societies is universally acknowledged. Within the vast realm of education, the role of social science instruction at the school level stands out as a critical contributor to holistic learning. As we delve into the topic of the "Relevance of Teaching Social Science at the School Level," it's essential to understand the background and context in which this discussion unfolds.

In today's fast-paced, interconnected world, students face a multitude of challenges and opportunities. They are growing up in a society characterized by rapid technological advancements, globalization, and diverse cultural interactions. Understanding and navigating this complex environment require more than just academic knowledge. It necessitates a deep comprehension of the intricate web of social, political, economic, and cultural forces that shape our world.

Social science education is like a guide that helps us navigate our complex world. It teaches us about our past, present, and future. It empowers us to be informed, responsible, and active members of society. It shows us the big picture of how our world works and encourages us to make it a better place for everyone.

2. Defining Social Science Education

2.1 What is Social Science Education?

Social science education is a branch of learning that focuses on the systematic study of human society, behaviour, and interactions. It encompasses a wide range of disciplines, including sociology, anthropology, psychology, economics, political science, history, geography, and more. The primary goal of social science education is to equip students with the knowledge, critical thinking skills, and understanding necessary to comprehend the complexities of human societies and their dynamics. It encourages students to question, analyze, and evaluate information, fostering a sense of inquiry and the ability to think critically about societal issues. Moreover, social science education promotes civic education, preparing students to be informed and engaged citizens by teaching them about democratic principles, government systems, and their rights and responsibilities. Ultimately, social science education plays a crucial role in shaping individuals who are not only knowledgeable but also socially aware, ethically conscious, and well-prepared to contribute to the betterment of society.

2.2. Components of Social Science

Social science encompasses a diverse range of components or branches, each offering unique insights into different facets of human society and behaviour. Anthropology delve into the study of cultures, societies, and human diversity, exploring the details of customs, languages, and historical developments. Sociology investigates the structures and dynamics of human societies, analyzing social institutions and interactions within them. Psychology, while often considered a natural science, has a significant overlap with social science through social psychology, which examines how social factors influence individual behaviour and cognition. Economics explores resource allocation, markets, and economic policies, shedding light on issues like poverty and economic growth. Political science delves into governance, politics, and international relations, while history unravels the tapestry of past events, societies, and human experiences. Geography examines the Earth's physical and human features, with human geography focusing on population distribution and cultural landscapes. Criminology delves into the study of crime and criminal justice systems, analyzing criminal behaviour and its causes. Educational research investigates learning processes and educational systems, while communication studies explore various modes of human communication. Social work addresses social and psychological challenges faced by individuals

and communities, providing support and advocating for social justice. Gender studies critically examine the construction of gender roles and identities, highlighting issues of feminism, masculinity, and gender inequalities. These components collectively form the tapestry of social science, offering valuable perspectives on the complexities of human societies and their interactions.

3. Historical Significance

3.1. The Historical Significance of Social Science

The historical importance of social science education is deeply intertwined with the development of informed, engaged, and responsible citizens throughout the ages. Dating back to the origins of organized societies, the study of social sciences has been instrumental in understanding human behaviour, societal structures, and the forces that shape our world. In ancient civilizations such as Greece and Rome, early forms of social science education were prevalent, emphasizing the study of politics, ethics, and human relationships. This foundational knowledge has continued to evolve over time, contributing significantly to the emergence of democratic principles and the establishment of modern governance. Throughout history, social science education has played a pivotal role in shaping political ideologies, promoting social justice, and addressing pressing societal issues. It has empowered individuals to become active participants in their communities and societies, fostering a sense of civic duty and a commitment to making informed decisions for the collective welfare. From the Enlightenment era to the present day, social science education has been a cornerstone of enlightenment, progress, and social transformation, leaving an indelible mark on the historical development of human societies.

3.2. Contribution to Society

Social science has made profound and far-reaching contributions to society by shedding light on the intricate workings of human behaviour, societies, and the world at large. Through extensive research and analysis, social scientists have informed policy and governance, leading to more effective decision-making and better public administration. The discipline has been a driving force behind the pursuit of social justice and equality, challenging discrimination and advocating for fairness. In the realm of economics, social science has unravelled the complexities of economic systems and market dynamics, contributing to economic growth and stability. It has enhanced our comprehension of global issues, fostering diplomacy and cooperation among nations. Furthermore, social science research has positively impacted public health, education, environmental sustainability, and the preservation of cultural heritage. It plays a pivotal role in conflict resolution, peace building, and the promotion of human rights. Overall, social science continues to be a cornerstone of societal progress, offering valuable insights and solutions to address the myriad challenges facing our world.

4. Fostering Critical Thinking and Analytical Skills

4.1. Role of Critical Thinking

Social science plays a pivotal role in nurturing critical thinking skills among individuals. Through the systematic study of human behaviour, societies, and the intricate interplay of various factors, social science encourages individuals to think critically about the world around them. It prompts questions, challenges assumptions, and fosters an analytical mindset. Social science equips individuals with the tools to assess information, evaluate evidence, and consider multiple perspectives when tackling complex societal issues. By examining historical events, societal structures, and cultural influences, social science education encourages individuals to delve deeper into the causes and consequences of human actions, promoting a more nuanced understanding of the world. In an era marked by information overload and diverse viewpoints, the critical thinking skills instilled by social science are essential for making informed decisions, participating in constructive dialogues, and addressing the multifaceted challenges of our society. Thus, social science not only imparts knowledge but also empowers individuals to become discerning, thoughtful, and analytical thinkers.

4.2. Analytical Skills Development

Social science education serves as a powerful means for the development of analytical skills in individuals. By delving into the study of human behaviour, societies, and complex societal issues, social science encourages students to think critically and analytically. It provides them with the tools and methodologies to analyze data, evaluate evidence, and draw reasoned conclusions. Whether examining historical events through a historical lens, dissecting economic trends, or scrutinizing the impact of policies on society, social science education fosters the capacity for systematic and structured analysis. This skill set extends beyond the classroom, empowering individuals to approach real-world problems with a methodical and critical mindset. Analytical skills honed through social science education are invaluable in diverse fields, from research and policymaking to business and everyday decision-making, ensuring that individuals are well-equipped to navigate the complexities of our ever-changing world.

5. Developing Global Awareness and Cultural Competence

5.1. The Importance of Global Perspective

A global perspective is of essential importance within the realm of social science education. In an increasingly interconnected world, understanding global dynamics, cultures, and challenges is essential. Social science equips individuals with the knowledge and tools to analyze not only their local communities but also the broader international context. It fosters an appreciation for cultural diversity, cross-cultural communication, and empathy for different worldviews. Moreover, social science enables individuals to comprehend the global implications of various societal issues, such as climate change, poverty, and conflict. By embracing a global perspective, social science education encourages individuals to think beyond national boundaries, fostering a sense of global citizenship. This perspective is vital for addressing pressing global challenges collaboratively and responsibly, as well as for preparing individuals to thrive in an interconnected world where global awareness and cultural sensitivity are invaluable skills.

5.2. Cultural Competence and Tolerance

Social science education plays a pivotal role in fostering cultural competence and tolerance. By exploring diverse cultures, histories, and societies, it broadens students' horizons and deepens their understanding of the rich tapestry of human experiences. Social science encourages students to appreciate the cultural nuances that shape individuals' beliefs, values, and behaviours. This exposure instills cultural empathy and an acceptance of different worldviews, promoting tolerance and respect for diversity. Moreover, social science education equips students with the tools to critically examine stereotypes, biases, and prejudices, encouraging them to challenge and take apart these barriers to understanding. Ultimately, it nurtures a culturally competent and tolerant generation, ready to engage positively in a globalized world, navigate intercultural interactions, and contribute to the promotion of harmony and social structure in increasingly diverse societies.

6. Economic Literacy and Financial Education

6.1. Real-world Economic Applications

Social science education goes beyond theoretical knowledge, providing students with the tools to apply economic concepts to real-world situations. This includes understanding how economic factors influence consumer choices, business strategies, and government policies. It involves analyzing economic data to make informed decisions, whether in personal finance, entrepreneurship, or public policy. Real-world economic applications enable individuals to grasp the consequences of economic decisions on a societal level, from addressing issues like income inequality to making informed choices about investments and savings. By connecting economic theory to practical applications, social science education empowers individuals to navigate the complex economic landscape and make choices that contribute to their financial well-being and the broader economic health of society.

6.2. Economic Decision-Making

"Economic Decision-Making" is a fundamental aspect of social science education, equipping individuals with the skills and knowledge needed to make informed choices in an economic context. Social science education delves into the principles of economics, helping students understand concepts like opportunity cost, supply and demand, incentives, and market behaviour. These principles form the foundation for economic decision-making.

Students learn how to assess costs and benefits, evaluate risks, and consider trade-offs when making choices, whether at the individual, business, or societal level. They gain insights into personal financial management, budgeting, investment strategies, and the impact of economic policies. Moreover, social science education encourages critical thinking, allowing individuals to analyze economic issues, weigh competing factors, and arrive at rational decisions.

7. Appreciating Historical Context

7.1. Learning from History

"Learning from History" is a central theme in social science education, emphasizing the invaluable lessons that can be gleaned from the study of the past. Social science recognizes that history serves as a repository of human experiences, offering a wealth of knowledge about the consequences of actions and decisions made by individuals, societies, and nations.

One of the primary objectives of social science education is to encourage students to analyze historical events critically. By examining both successes and failures, students gain insights into the factors that have driven societal change, conflict, progress, and stagnation.

Moreover, learning from history fosters a sense of collective memory and cultural identity. It allows societies to acknowledge and confront past injustices, atrocities, and social inequalities, with the goal of preventing their recurrence. Social science education instills an appreciation for the importance of preserving historical records, artifacts, and narratives to ensure that future generations have access to the lessons of history.

7.2. Relevance in Contemporary Society

Social science education goes beyond teaching historical or theoretical concepts; it equips individuals with the tools to understand and engage with the complex challenges facing contemporary society.

One of the notable ways in which social science maintains its relevance is by providing a framework for comprehending current societal issues. It enables individuals to analyze the root causes of problems such as poverty, inequality, environmental degradation, and social injustice. Moreover, social science education encourages individuals to critically evaluate the impact of policies, technologies, and social trends on society. It promotes an awareness of ethical considerations, human rights, and the consequences of decision-making, ensuring that individuals are well-informed and responsible citizens.

In the contemporary world, social science also plays a pivotal role in addressing global challenges. Whether it's climate change, migration, political conflicts, or public health crises, social scientists contribute valuable research and analysis to inform policy and decision-makers.

8. Career Opportunities and Life Skills

8.1. Professional Applications of Social Science Education

"Professional Applications of Social Science Education" include a wide collection of career opportunities that control the knowledge and skills acquired through social science studies. Graduates often find themselves well-prepared for roles in public policy and administration, where they contribute to shaping government policies and programs that address pressing societal issues. Additionally, social science education equips individuals with the analytical and research skills needed in market research and analysis, aiding businesses in making informed decisions and staying competitive. In the realm of human resources, graduates excel in fostering positive workplace environments, managing employee relations, and promoting organizational growth. Moreover, the critical thinking, problem-solving, and communication skills developed in social science education are highly valuable in fields like education, social work, international relations, and even entrepreneurship.

8.2. Preparing Students for Future Success

Social science education imparts knowledge, fosters critical thinking, and essential skills such as problem-solving, effective communication, and data analysis. These skills are highly transferable, enabling students to adapt to diverse career paths and navigate a rapidly changing job market. Moreover, social science education nurtures cultural awareness, global perspectives, and an understanding of societal complexities, which are increasingly essential in a interconnected world. By fostering a sense of civic responsibility and ethical decision-making, it prepares students not only to excel in their careers but also to contribute meaningfully to their communities and society as informed and engaged citizens. In essence, social science education equips students with the intellectual, interpersonal, and ethical tools they need to thrive, lead, and make a positive impact in a dynamic and ever-evolving world.

9. Future Trends and Innovations

9.1. Adapting to Technological Advances

Technology is reshaping the way we interact, work, and understand the world, and social science education must keep pace with these changes. Social scientists increasingly harness technology for data collection, analysis, and communication, which expands the possibilities for research and insights into human behaviour and societies. Additionally, technology-enabled learning tools enhance the effectiveness of social science education, offering interactive experiences and access to a wealth of digital resources. Moreover, social science education must address the ethical and societal implications of emerging technologies, including artificial intelligence, data privacy, and the impact of automation on the job market. By adapting to technological advances, social science education remains relevant and equips students with the skills and knowledge needed to navigate the digital age, make informed decisions, and contribute to the responsible use of technology in shaping the future of society.

9.2. Emerging Trends in Social Science Education

Social science education is witnessing several transformative trends that are shaping how students learn and engage with the discipline. One prominent trend is the increasing emphasis on interdisciplinary approaches, where social science is integrated with STEM (Science, Technology, Engineering, and Mathematics) fields to address complex global challenges comprehensively.

Furthermore, there's a growing emphasis on experiential learning, where students engage in real-world projects, internships, and community service to apply their social science knowledge in practical settings. This trend fosters a deeper understanding of societal issues and equips students with valuable skills for future careers.

Additionally, social science education is increasingly focusing on global perspectives, promoting cultural diversity, and addressing pressing global challenges such as climate change, migration, and social inequality.

These trends reflect the evolving role of social science in preparing students to be informed, adaptable, and socially responsible citizens in a rapidly changing world.

10. Conclusion

In conclusion, the exploration of the "Relevance of Teaching Social Science at the School Level" has shed light on the multifaceted and vital role that social science education plays in shaping individuals and societies. Social science education, delving into its historical significance, and understanding how it fosters critical thinking, analytical skills, and a global perspective. Social science explored its contributions to society, economic literacy, and real-world applications, as well as its role in nurturing cultural competence and tolerance. Moreover, social science education is important in preparing students for diverse career opportunities, equipping them with essential life skills and preparing them for future success.

As we look to the future, it's clear that social science education is evolving to adapt to technological advances, embracing interdisciplinary approaches, and emphasizing experiential learning and global perspectives. These trends ensure that social science education remains relevant and equips students to navigate the complexities of an interconnected world.

In essence, social science education is not merely an academic pursuit but a transformative force that empowers individuals to become informed, critical thinkers, responsible global citizens, and contributors to the betterment of society. It's a call to action for educational stakeholders to recognize its vital role and invest in its advancement, ensuring that future generations are well-prepared to address the challenges and opportunities of our ever-evolving world. By prioritizing social science education, we pave the way for a brighter and more informed future for individuals and societies alike.

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Deciphering Connections: Exploring the Role of Advanced Glycation End Products in the Pathogenesis of Diabetes

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Abstract:

Diabetes mellitus poses a formidable global health challenge, demanding focused attention in public health initiatives. This article delves into the escalating significance of Advanced Glycation End Products (AGEs) in the intricate tapestry of diabetes. With a molecular lens, the exploration navigates from the genesis of AGEs to their profound impact on cellular functionality and the origin of insulin resistance. AGEs emerge as pivotal actors intricately interwoven into the complex narrative of diabetes pathogenesis. This article aspires to unravel the molecular connections, offering a concise yet comprehensive insight into the multifaceted role played by AGEs in the initiation and advancement of diabetes. The dissection of these intricate connections contributes to a refined understanding, shedding light on the molecular dynamics that underlie the disease's onset and progression. As we peer into the intricate landscape of diabetes, the recognition of AGEs as central players marks a crucial step in advancing our comprehension of this pervasive metabolic disorder, potentially paving the way for targeted interventions and novel therapeutic strategies.

Keyword(s): Glycation, antiglycation, diabetes mellitus, advanced glycation end products

1. Introduction

Diabetes mellitus, a pervasive metabolic disorder characterized by persistent hyperglycemia, poses a significant global health challenge, affecting millions of individuals worldwide. The intricate interplay of genetic, environmental, and lifestyle factors underlies the multifaceted etiology of diabetes, creating a complex landscape that researchers tirelessly strive to unravel. In navigating this intricate terrain, an emerging protagonist has captured the limelight—the family of molecules known as Advanced Glycation End Products (AGEs)[1][2][3–5]. As diabetes unfolds as a global health concern, the spotlight increasingly turns to AGEs, compounds formed through non-enzymatic glycation and oxidation of proteins, lipids, and nucleic acids[6,7]. These molecules stand at the intersection of diabetes pathogenesis, where their intricate involvement raises questions and presents opportunities for a deeper understanding of the disease [1,8][3]. This article aims to embark on a comprehensive review, delving into the pivotal role played by AGEs in the context of diabetes. By unravelling the nuances of their formation, elucidating the intricacies of their mechanisms of action, and exploring potential therapeutic interventions, we strive to contribute to the evolving narrative of diabetes research. As AGEs take center stage in this exploration, the intention is to not only shed light on their role in diabetes but also to pave the way for novel insights and strategies that may eventually transform our approach to managing and mitigating the impact of this pervasive metabolic disorder.

2. Formation of AGEs

Advanced Glycation End Products (AGEs) stand as consequential players in the intricate narrative of diabetes pathogenesis, with their formation serving as a pivotal chapter. This intricate process unfolds through a series of complex reactions known as the Maillard reaction[2]. Here, reducing sugars engage in a molecular dance with amino groups of proteins, creating a cascade of transformations. This formation of AGEs is not confined to a singular route; rather, it manifests through both endogenous and exogenous pathways[9].

Endogenous formation takes center stage within the body, a consequence of prolonged exposure to elevated glucose levels. This internal glycation process, occurring over time, lays the foundation for the accrual of AGEs in various tissues[10]. The prolonged impact of heightened glucose levels provides a fertile ground for the intricate dance between reducing sugars and amino groups, ultimately contributing significantly to the pathogenesis of diabetes.

In parallel, exogenous sources contribute to the AGEs tapestry, introducing external elements into the body's metabolic narrative. The consumption of foods processed at high temperatures introduces exogenous AGEs, amplifying the overall burden. The amalgamation of endogenous and exogenous AGEs intricately weaves together a complex storyline that unfolds over time, with accumulating consequences for various tissues. This dynamic formation process becomes a crucial element in the diabetes puzzle, signifying not just a consequence but a contributing factor to the progression of the disease.

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3. Mechanisms of Action:
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Delving into the mechanisms through which AGEs exert their influence unveils a multifaceted interplay that intricately links them to the hallmarks of diabetes.

I. **Receptor-Mediated Effects:** At the forefront of AGEs' biological impact is their interaction with cell surface receptors, notably the Receptor for Advanced Glycation End Products (RAGE). This binding initiates a cascade of events, activating intracellular signaling pathways that trigger inflammatory responses and oxidative stress[11][12,13]. The sustained activation of these pathways creates a conducive environment for the development of insulin resistance, a hallmark feature of type 2 diabetes. As AGEs and RAGE engage in this intricate molecular dialogue, their combined effects contribute significantly to the disruption of cellular homeostasis.

II. **Oxidative Stress:** AGEs, acting as provocateurs in cellular dynamics, induce oxidative stress by promoting the generation of reactive oxygen species (ROS). This oxidative milieu goes beyond mere cellular damage, extending its reach to exacerbate insulin resistance. The intricate interplay between AGEs and oxidative stress establishes a feedback loop, creating an environment that not only perpetuates the formation of AGEs but also amplifies the overall burden on cellular functionality. This oxidative stress becomes a driving force, fueling the diabetic cascade and emphasizing the intricate connections within the disease pathology[2][14].

III. **Inflammation:** The interaction of AGEs with RAGE serves as a catalyst for pro-inflammatory signaling cascades, involving cytokines and adhesion molecules. Chronic inflammation, a characteristic feature of diabetes, becomes intensified in the presence of AGEs. This heightened inflammatory response significantly contributes to the progression of insulin resistance and dysfunction of pancreatic β-cells[15]. The intricate interplay between AGEs and inflammation serves as a perpetuating force, further entwining these molecules with the complexities of diabetes pathology[16,17][18].

IV. **Extracellular Matrix Alterations:** AGEs extend their impact beyond cellular interactions, venturing into the modification of the extracellular matrix. This alteration in the matrix's structure and function reverberates through vascular tissues, impacting vascular integrity. The consequences of these extracellular matrix alterations contribute substantially to the vascular complications associated with diabetes, encompassing both micro and macrovascular diseases. This highlights the broader systemic implications of AGEs, as they intricately influence not only cellular dynamics but also the structural integrity of vital vascular components[7][19].

Understanding the complex mechanisms through which AGEs operate provides a nuanced perspective on their role in the intricate tapestry of diabetes. The interplay of receptor-mediated effects, oxidative stress, inflammation, and extracellular matrix alterations underscores the dynamic nature of AGEs and their far-reaching consequences.

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4. Role in Insulin Resistance
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Insulin resistance, a pivotal factor in the pathogenesis of type 2 diabetes, intricately intertwines with the actions of Advanced Glycation End Products (AGEs). The deleterious impact of AGEs on insulin signalling pathways is a central nexus in the manifestation of insulin resistance [10,16]. The interference of AGEs disrupts the finely tuned orchestration of insulin action, diminishing its effectiveness and impairing glucose uptake by cells. The Receptor for Advanced Glycation End Products (RAGE) assumes a prominent role in this molecular drama, mediating signalling pathways that accentuate insulin resistance[20]. RAGE-mediated signalling triggers serine phosphorylation of insulin receptor substrate-1 (IRS-1), a critical mediator in the insulin signalling cascade[15]. This phosphorylation event disrupts the harmonious flow of insulin signalling, introducing discord into the intricate molecular dance that governs glucose homeostasis.

Moreover, AGEs extend their influence to adipocytes, the cells responsible for storing and regulating lipids[21] [6]. This additional dimension of impact further exacerbates insulin resistance, contributing to the overall dysregulation of metabolic processes. The intricate relationship between AGEs and insulin resistance underscores the multifaceted nature of diabetes pathogenesis, emphasizing the need for targeted interventions that address the complex interplay between these molecular players.

Impact on Pancreatic β-Cell Function: Advanced Glycation End Products (AGEs) emerge as critical contributors to the intricate saga of diabetes, playing a pivotal role in pancreatic β-cell dysfunction—an integral facet of the disease's pathogenesis. The delicate equilibrium of pancreatic β-cell function is disrupted by chronic exposure to elevated glucose levels and the presence of AGEs, initiating a cascade of detrimental effects.[22,23]The impaired insulin secretion from β-cells serves as a poignant outcome of this disruption. AGE-induced oxidative stress intensifies within the microenvironment of pancreatic islets, creating a milieu that is unfavorable for normal β-cell function. The confluence of oxidative stress and inflammation further compounds the predicament, culminating in β-cell apoptosis. This orchestrated cell death diminishes the functional mass of

insulin-secreting cells, unraveling a critical thread in the intricate tapestry of diabetes development. This cascade of events not only contributes to the onset of diabetes but also significantly complicates its management. The compromised functional capacity of pancreatic β-cells places an added burden on the body's ability to regulate blood glucose levels effectively. Understanding the pivotal role played by AGEs in this context unveils potential avenues for targeted interventions that may not only ameliorate β-cell dysfunction but also offer new strategies for managing and mitigating the complexities of diabetes.

Therapeutic Implications: A profound understanding of the pivotal role played by Advanced Glycation End Products (AGEs) in diabetes not only unravels the intricacies of the disease but also paves the way for innovative therapeutic interventions[24]. Researchers and clinicians are actively exploring diverse strategies to intervene in the AGEs-mediated cascade, seeking solutions that transcend conventional treatments. Pharmacological interventions targeting AGE formation and Receptor for Advanced Glycation End Products (RAGE) signaling are at the forefront of this therapeutic exploration. Inhibitors designed to impede the formation of AGEs or interrupt their interaction with cellular receptors hold promise in disrupting the intricate molecular dialogue orchestrated by AGEs [25]. By intervening at the molecular level, these pharmacological agents aim to mitigate the downstream effects of AGEs on insulin resistance, inflammation, and extracellular matrix alterations. Beyond pharmaceutical avenues, lifestyle modifications offer a holistic approach to mitigating the impact of AGEs. Dietary changes, emphasizing a reduction in the intake of AGE-rich foods processed at high temperatures, represent a proactive and preventive measure. This nutritional strategy aligns with the broader paradigm of embracing a diet rich in fresh, unprocessed foods, providing a foundation for managing the external AGE burden. Furthermore, antioxidant therapy has emerged as a promising avenue in the therapeutic arsenal against AGE-induced oxidative stress [2][26,27]. Antioxidants, by neutralizing reactive oxygen species, aim to mitigate the cellular damage inflicted by AGEs. This approach not only addresses the immediate consequences of oxidative stress but also disrupts the feedback loop sustaining the AGE-induced vicious cycle [28][19]. In the evolving landscape of diabetes therapeutics, a comprehensive approach that combines pharmaceutical innovations, lifestyle modifications, and antioxidant strategies holds the potential to reshape the management and prevention of this global health challenge[29–31]. The integration of these therapeutic modalities reflects a nuanced understanding of the multifaceted role played by AGEs, paving the way for a more targeted and effective paradigm in diabetes care.

5. Conclusion

In conclusion, Advanced Glycation End Products (AGEs) stand as protagonists in the intricate narrative of diabetes pathogenesis, influencing the disease's trajectory from its inception. The journey from the inception of AGEs through the intricate mechanisms contributing to insulin resistance and pancreatic dysfunction underscores their multifaceted role, captivating the attention of researchers and clinicians alike. AGEs are not passive bystanders; they are active contributors, weaving a complex web that impacts diverse facets of diabetes progression. As architects of disruption, AGEs provide a focal point for researchers and clinicians to decipher the complexities of diabetes. Their involvement extends beyond the biochemical realm, infiltrating cellular processes and influencing the systemic dynamics of the disease. This recognition of AGEs as key orchestrators not only deepens our comprehension of diabetes intricacies but also opens a gateway to precision medicine in diabetes care. Understanding the pivotal role of AGEs serves as a cornerstone for developing targeted therapeutic strategies. From pharmacological inhibitors addressing AGE formation to lifestyle modifications mitigating external AGE burdens, the evolving therapeutic landscape is grounded in this comprehensive understanding. The multifaceted nature of AGEs' impact on diabetes pathogenesis prompts a holistic approach that recognizes the interconnectedness of various molecular players. As the global burden of diabetes escalates, the quest to unravel the mysteries of AGEs becomes a beacon of hope. It represents a collective stride toward effective interventions that go beyond symptom management, aiming to address the root causes of this pervasive metabolic disorder. The evolving narrative of AGEs in diabetes not only enhances our scientific understanding but also propels us toward a future where targeted interventions and preventive measures transform the landscape of diabetes care. In the relentless pursuit of unravelling AGE mysteries, we move one step closer to devising interventions that can alleviate the suffering inflicted by diabetes on millions worldwide.

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Analysing the Trade Direction and Commodity Composition of IBSA Nations

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Abstract:
International trade is widely recognized as a key driver of economic growth, prompting countries worldwide to engage in various trade agreements such as multilateral, regional, or bilateral trade. One such forum is IBSA, consisting of India, Brazil, and South Africa - all emerging economies that could potentially serve as catalysts for economic growth, especially in developing nations. It is essential to assess their trade direction and composition, which researchers have evaluated using basic statistical tools such as correlation, growth rate, and Revealed Comparative Advantage. The study revealed that Intra-IBSA exports are more integrated than Intra-IBSA imports. While these three countries are aligned with their respective production lines, India's commodities' comparative advantages are poor. Therefore, there is an urgent need to enhance the quality of Indian products.

Key Word: Trade, Intra Import, Intra Export IBSA, RCA

1. Introduction

International trade plays a crucial role in the economic development of countries. All around the world, countries are striving to integrate themselves to enhance international trade. There are several forms of Trade Agreement such as Multilateral, Regional and Bilateral Trade Agreement that countries adopt to reduce or eliminate barriers to trade and investment among them through establishing common rules and regulations for international trade. In 2003, India, Brazil and South Africa formed Dialogue Forum (IBSA), with the primary objective of promoting cooperation and dialogue among these nations on various global issues and challenges.

The IBSA forum has formulated to promote cooperation among developing countries in Africa, Asia, and Latin America by facilitating the sharing of experiences, knowledge, and best practices. It provides a platform for member countries to discuss regional and global issues of mutual interest, share perspectives, and coordinate their positions on international forums and organizations. IBSA prioritizes economic cooperation among its member countries, including trade, investment, and economic partnerships, thereby creating opportunities for businesses and entrepreneurs from India, Brazil, and South Africa to collaborate. The objective of IBSA also emphasizes social development, poverty alleviation, and inclusive growth. As such, member states work together on initiatives related to education, healthcare, and social welfare, with a focus on sharing successful models and experiences. Additionally, IBSA seeks to promote cultural exchange among member countries by taking initiatives to showcase the rich cultural heritage of India, Brazil, and South Africa. The forum is committed to addressing environmental and sustainability challenges, including climate change, renewable energy, and sustainable development, seeking innovative solutions to global problems. Furthermore, IBSA promotes peace, stability, and security in the regions where its member states are located. The forum supports conflict resolution efforts and works towards maintaining peace and security at the global level. IBSA advocates for reform in global governance structures, including the United Nations and international financial institutions, to ensure that the voices and interests of developing countries are adequately represented in these institutions. Finally, IBSA members cooperate on human rights issues and promote a human rights-based approach to development.

There are several economic factors which are contributed to the formation of IBSA such as these three countries of IBSA are emerging economies of the world and members of IBSA are complementary economies to each other like India's information technology sector, Brazil's agricultural expertise and South Africa's mineral resources can provide mutual benefits through collaboration.

Purpose of Research: Conducting research to analyse the trade direction and commodity composition of IBSA nations is crucial for making informed decisions, promoting economic growth, and fostering international cooperation among these emerging economies. This research is a valuable tool for comprehending their positions in the global trade landscape and influencing their economic destinies.

Research Gap: Numerous studies have been conducted on research policies, in-depth sectoral analysis, and the effects of external factors such as financial crises, pandemics, and trade disputes on the trade patterns of IBSA nations. While some of these studies have concentrated on the achievement of IBSA's objectives, the analysis of the trade direction and commodity composition of IBSA nations remains unexplored. Therefore, I have chosen to focus my research on "Analyzing the Trade Direction and Commodity Composition of IBSA Nations."

2.   Objectives

1.   Evaluate the current trade relationships between India, Brazil, and South Africa, including the volume and composition of trade.
2.   Identify the competitiveness of exportable product of India, Brazil and South Africa.
3.   Identify any existing trade barriers such as tariffs, non-tariff barriers, and trade restrictions that hinder the flow of goods among these countries.

3. Research Methodology

This study relies solely on secondary data and is descriptive in nature. The data has been gathered from various sources such as the World Bank's WITS, United Nations' UN Comtrade and WTO. Statistical tools have been used for analysis, including basic statistics such as correlation, growth rates and percentage shares of India, Brazil, and South Africa to determine current trade trends. Additionally, Balassa's revealed Comparative Advantage index has been employed to identify competitiveness.

4.   Analysis

The study is divided into three sections. The first section analyses the current trade trends and composition of trade for India, Brazil, and South Africa (IBSA). Section 2 comprises for assessment of Revealed Comparative Advantage for these three Countries of IBSA. Section 3 comprises for the study of obstacle factors in Intra- IBSA trade. The time horizon has been taken from 2013 to 2021 to analyse Direction of trade while the data of 2022 has been taken to evaluate trade composition. Data are given in annexure.

Table No.1(Annexure 1) shows that the share of intra-IBSA import with total IBSA imports were 3.10%, which slightly decreased to 2.65% in 2018, but then increased back up to 3.44% in 2021. Therefore, there has been an increasing trend in the share of IBSA imports during the analysis period. On the other hand, the share of intra-IBSA export in total IBSA export has decreasing, from 2.87% in 2021 from 3.08% in 2013. In terms of growth rate of Intra- IBSA import, Total- IBSA import, Intra- IBSA export and Total-IBSA export show that the Intra-IBSA import growth rate was 9.36% and Total- IBSA import was 21.18%. It reveals that growth rate of Total-IBSA import is much higher than Intra-IBSA imports. On the other hand, growth rate of Intra-IBSA export is greater than Total-IBSA exports. Thus, findings show that Intra- IBSA import has increasing trends whereas Intra-IBSA exports has decreasing trends and growth rate of Intra- IBSA import is lesser than Intra- IBSA exports and Total-IBSA exports is greater than Total-IBSA export. Thus, the country of IBSA is comparatively more integrated in terms of exports.   Correlation analysis between Intra- IBSA and total IBSA imports show that the relationship between Intra-IBSA import and Total- IBSA import are moderate and positive because degree of correlation is 0.247 but no significant relation between these variables. Correlation analysis of Intra-IBSA export and Total IBSA export shows that there is strong negative and significant relationship. Intra- IBSA import and Intra-IBSA export shows that there is strong positive relationship between two but not significant relation. Thus, analysis shows that IBSA countries are more integrated than trade relations to others.

Table No. 2 (Annexure 2) exhibits that Brazil's exports to India are on the rise, while its exports to South Africa are declining. Brazil's imports from both India and South Africa have increased steadily from 2013 to 2021. Brazil has an unfavorable balance of trade with India, but a favourable one with South Africa. The trade growth rate between Brazil and India was 23.83%, while it was -15% with South Africa. This indicates that Brazil's trade growth rate with India is significantly higher than with South Africa, possibly due to a significant decrease in Brazil's volume of trade with South Africa.

Trade Composition: In this section, researcher analysed the trade commodity composition of India, Brazil, and South Africa to evaluate the Intra IBSA commodities share and find the Revealed Comparative Advantage. Top ten export commodities have been taken of IBSA countries of year 2022 to analyse it. **Table No. 3(Annexure 3)** shows that the Parts and Accessories of the Motor Vehicles of Headings 87.01 to 87.05 had the highest value of 4.87%, followed by Petroleum Oils other than Crude with 4.50%, and Medicaments (excluding goods of Heading 30.02, 30.05, or 30.06) with 1.93% in India's commodity exports with Brazil. Thus, it shows India mainly exports of industrial goods and petroleum products to Brazil that would be beneficial for India. India' commodity export to South Africa shows that Motor Car and other Motor vehicle has the highest share with SA as 18%, followed by Petroleum oils other than crude (4%) and Medicaments (excluding goods of heading 30.02, 30.05 or 30.06) with 3%.Thus, it shows that India mainly exports of industrial and petroleum products. Findings reveal that India's commodity exports to Brazil and South Africa are dominated by the same product. It is a positive sign for India because India's commodity exports are fitted with these two countries as per expectation.

Table number 4, (Annexure 4) displays Brazil's commodity export to India and South Africa. In terms of export to India, Brazil's highest-ranking commodity is Petroleum and Oils obtained from bituminous minerals at

4.33%, followed by Cane Sugar, Beet Sugar and Chemically pure sucrose in solid form at 2.08%. In terms of export to South Africa, Brazil's highest-ranking commodity is Meat and edible offal of the poultry of heading 01.05 at 2.44%, followed by petroleum oils other than crude at 2.07%. Thus, Brazil mainly exports agricultural products to both India and SA. It is a positive sign for Brazil in terms of commodity exports to India and Brazil. Because the strength of Brazil in production of agricultural product. Thus, findings show that Brazil is also fitted in her line of production.

Table number 5 (Annexure 5) analyses South Africa's commodity exports to India and Brazil. Export composition of SA with India reveals that Coal, briquettes, ovoids, and similar solid fuels manufactured from coal are having highest rank with 23.36%.Manganese ore and concentrates is occupying second rank with 15.80%. In terms of South Africa's commodity export to Brazil shows that Centrifuges, including centrifugal dryers, take the lead with a share of 3.5%, followed by Manganese ores and concentrates with a share of 2.1%. Thus, it shows that South Africa exports of natural resource's product. This findings advocate that South Africa is also fitted on her line of production because SA is rich natural resource's products.

From the above analysis, study concludes that all these three members of IBSA are exporting of those products in which they have their strength.

5.   Analysis of RCA of IBSA Countries:

Top ten exportable commodities of year 2022 have been taken of India, Brazil and South Africa to analyses the competitiveness of commodity.

Table No.6 (Annexure 6) has analysed the Revealed Comparative Advantage to find out the competitiveness of India's commodity exports. It shows that the index value of RCA's India has below than one. It means India has no comparative advantages in these goods. Therefore, there is urgent need to improve the quality of products that makes competitiveness in the world market. The reasons may be high cost of production due using of outdated capital.

Table No.7 (Annexure 7) shows that all 10 commodities of Brazil's export to world have competitiveness in the world market. The index value of Soya beans, whether or not broken has highest value with 23.42 followed by Cane or beet sugar and chemically pure sucrose, in solid form with 17.84 and Petroleum oils, other than crude has the lowest value with 0.94. It means India and Brazil has competitiveness in agricultural products in the world.

Table No.8 (Annexure 8) shows that South Africa has competitiveness in many products like Platinum unwrought or in semi-manufactured forms, or in powder form…(10.54), Coal; briquettes, ovoids and similar solid fuels manufactured from coal...(5.41), Iron ores and concentrates, including roasted iron pyrites....(2.72), Ferro-alloys(6.41), Manganese ores and concentrates (6.40) and Motor vehicles for the transport of goods (1.53)

Thus findings exhibit that in terms of competitiveness of the commodities in world market, Brazil has high level, SA has moderate level and India has poor level of competitiveness

Trade Barriers: When it comes to trading goods between countries, there are several common barriers that can make the process difficult, these may be-

1. Complex Customs Procedures that involve lots of paperwork and long wait times. Simplifying these processes and reducing bureaucratic hurdles can help trade flow more smoothly.
2. Currency fluctuations can also affect the competitiveness of exports and imports. If one country's currency significantly appreciates or depreciates against another's, it can impact trade flows. Measures to ensure currency stability can help mitigate this barrier.
3. Inadequate transportation infrastructure, including ports, roads, and railways, can also impede the efficient movement of goods. Investments in infrastructure and improvements in logistics can reduce trade barriers.
4. Differences in Intellectual Property Rights (IPR) regulations among countries can create trade barriers, especially in industries where intellectual property is critical. Harmonizing IPR laws can facilitate trade in these sectors.
5. Political tensions and disputes between countries can also result in trade barriers. Diplomatic efforts and negotiations are essential to address these issues. Countries can also work on bilateral or regional trade agreements to reduce trade barriers. Such agreements can address tariffs, NTBs, and other trade-related issues.

6.   Conclusion:

Based on the analysis, the study found that the IBSA forum has a positive impact. This is evident from the fact that the import between the IBSA countries is higher than the total import. In addition, the growth rate of intra-IBSA import is greater than the intra-IBSA export, due to a significant decline in the latter.

Regarding the balance of trade, India has an unfavorable balance of trade with both Brazil and South Africa. On the other hand, South Africa has a favorable balance of trade with both countries, while Brazil has a positive

balance of trade with South Africa but a negative one with India. This indicates that South Africa and Brazil are more integrated, as both countries complement each other.

All three countries are well-suited to their respective lines of production, which could be beneficial for all. Brazil has advantages in all goods, while South Africa has a mixed experience and India is poor in terms of comparative advantages. Therefore, India needs to put in more effort to improve its economy.

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Annexure: 1

Table No. 1: Analysis of Intra IBSA Trade during 2013 to 2021 (Value US $ Million)

Year	2013	2018	2021	Growth Rate
Imports				
Total IBSA Imports	821636.38	903422.68	898532.01	9.36%
Intra IBSA Imports	25508.88	23902.67	30910.79	21.18%
Share of Intra IBSA imports in total IBSA imports	3.10%	2.65%	3.44%	
Exports				
Total IBSA Exports	664217.9435	647858.526	796949.5297	19.98%
Intra IBSA Exports	20480.19602	17829.6298	22866.41909	11.65%
Share of Intra IBSA exports in total IBSA Exports	3.08%	2.75%	2.87%	

Sources: Various issues of WITS, World Bank and values are calculated by author itself.

Annexure: 2
Table No. 2: Trade Analysis of IBSA (Value US $ in Thousand)

Reporter	Trade With	India			Brazil			South Africa		
	Year	2013	2018	2021	2013	2018	2021	2013	2018	2021
Brazil	Export	3129783	3908942	4799018				1835424	1362466	1186757
	Import	6587396	4033285	7233948				759073	686121	1029969
	Total Trade	9717179	7942226	12032966				2594498	2048588	2216726
	Balance of Trade	-3457614	-124343	-2434929				1076350	676344.5	156788.9
	% change in trade			23.83%						-15%
India	Export				6111836	3576960	6262205	5742467	4016933	5989463
	Import				3831841	5616203	4928497	7351755	8242791	11070726
	Total Trade				9943676	9193163	11190702	13094222	12259724	17060190
	Balance of Trade				2279995	-2039244	1333709	-1609288	-4225859	-5081263
	% change in trade						12.54%			30.29%
South Africa	Export	3003081	4501800	4155534	657606.4	462529.4	473440.9			
	Import	5371906	3842924	5347778	1606911	1481346	1299872			
	Total Trade	8374986	8344725	9503311	2264517	1943875	1773313			
	Balance of Trade	-2368825	-658876	-1192244	-949305	-1018816	-826431			
	% change in trade			13.47%			-21.69%			

Source: WITS, World Bank and data manipulated by author

Annexure: 3
Table No. 3 India's Commodity Export to Brazil and South Africa (Value in US $ Million)

SICT Code	Top 10 export Commodity of India	India's Export to World	India's export to Brazil	India's Export share with Brazil	Indi's export to South Africa	India's Share with SA
334	Petroleum oils, other than crude	94398.7	4251.91	4.50%	3531.3	4%
667	Diamonds, whether or not worked, but not mounted or set...	23919.7	1.16	0.00%	173.1	1%
542	Medicaments (excluding goods of heading 30.02, 30.05 or 30.06)...	17451.4	337.12	1.93%	559.3	3%
897	Articles of jewellery and parts thereof, of precious metal....	12306.3	1.08	0.01%	5.9	0%
042	Rice	10766.6	0.04	0.00%	77.6	1%
764	Electrical apparatus for line telephony or line telegraphy	10952.3	4.38	0.04%	219.9	2%
684	Unwrought aluminium	7079.7	69.03	0.98%	39.0	1%
784	Parts and accessories of the motor vehicles of headings 87.01 to 87.05....	6664.9	324.63	4.87%	84.1	1%
781	Motor cars and other motor vehicles principally designed for the transport...	6585.9	0.29	0.00%	1198.0	18%

| 36 | Crustaceans, whether in shell or not.... | 4907.5 | NA | #VALUE! | 19.6 | 0% |
| | **All commodities** | **452684.2** | | | | |

Source: UN Comtrade and data calculated by author

Annexure: 4

Table No. 4: Brazil Export Composition with India and South Africa (Value in US $ Million)

SICT Code	Commodity	Brazil Export to World	Brazil Export to India	Brazil share with India	Brazil Export to SA	Share with SA
222	Soya beans, whether or not broken	46664.3	13.709055	0.03%	9.404877	0.02%
281	Iron ores and concentrates, including roasted iron pyrites....	28888.7	0.000175	0.00%	86.404845	0.30%
333	Petroleum oils and oils obtained from bituminous minerals; crude.	42688.1	1847.666724	4.33%		0.00%
61	Cane or beet sugar and chemically pure sucrose, in solid form	11003.8	228.385477	2.08%	35.73827	0.32%
334	Petroleum oils, other than crude	13036.3	5.024477	0.04%	269.84656	2.07%
11	Meat of bovine animals, frozen	10938.2	0.22439	0.00%	1.015938	0.01%
81	Oil-cake and other solid residues	10339.5	13.723215	0.13%	9.25923	0.09%
44	Maize (corn)	12264.1	0.237434	0.00%	0.020665	0.00%
12	Meat and edible offal, of the poultry of heading 01.05.	8888.1	0.241494	0.00%	216.815854	2.44%
251	Chemical wood pulp, soda or sulphate, other than dissolving grades.	7906.4	3.502772	0.04%	3.502772	0.04%
	Total	334463.1				

Source: UN Comtrade and data calculated by author

Annexure: 5

Table No. 5: South Africa Export Commodity to India and Brazil (Value in US $ Million)

SICT Code	Commodity	South Africa Export to world	South Africa Export to India	Share of Brazil with India	South Africa Export to Brazil	Share of Brazil with SA
681	Platinum unwrought or in semi-manufactured forms, or in powder form…	16690.4	59.737225	0.36%	NA	0.0%
321	Coal; briquettes, ovoids and similar solid fuels manufactured from coal...	13383	3126.300346	23.36%	74.51042	0.6%
281	Iron ores and concentrates, including roasted iron pyrites....	6500.1	5.342564	0.08%	NA	

971	Gold (including gold plated with platinum)	5264.9	NA	#VALUE!	NA	
781	Motor cars and other motor vehicles principally designed for the transport...	5765.4	0.044314	0.00%	27.556969	0.5%
671	Ferro-alloys	4252	41.789086	0.98%	10.267595	0.2%
782	Motor vehicles for the transport of goods	3974.4	0.02	0.00%	0.141531	0.0%
287	Manganese ores and concentrates......	2885.8	456.02382	15.80%	59.468339	2.1%
743	Centrifuges, including centrifugal dryers....	2274.7	15.701983	0.69%	79.083775	3.5%
334	Petroleum oils, other than crude....	2814.4	26.12557	0.93%	0.274486	0.0%
	All Commodities	**334463.1**				

Source: UN Comtrade and data calculated by author

Annexure: 6

Table No.6: Revealed Comparative Advantage of India's Commodity Export

SICT Code	Commodity	India's Total Export	World Total Export	Revealed Comparative Advantage
334	Petroleum oils, other than crude	94398.7	844159.8	0.03
667	Diamonds, whether or not worked, but not mounted or set...	23919.7	139517.6	0.05
542	Medicaments (excluding goods of heading 30.02, 30.05 or 30.06)...	17451.4	448064.7	0.01
897	Articles of jewellery and parts thereof, of precious metal....	12306.3	130514.4	0.03
42	Rice	10766.6	19670.4	0.16
764	Electrical apparatus for line telephony or line telegraphy	10952.3	885616.6	0.00
684	Unwrought aluminium	7079.7	165045.3	0.01
784	Parts and accessories of the motor vehicles of headings 87.01 to 87.05....	6664.9	410696.4	0.00
781	Motor cars and other motor vehicles principally designed for the transport...	6585.9	758576.1	0.00
36	Crustaceans, whether in shell or not....	4907.5	29350.9	0.05
	All commodities	**452684.2**	**130514.4**	

Source: UN Comtrade and data has manipulated by author itself.

Annexure: 7

Table No.7: Revealed Comparative Advantage of Brazil's Commodity Export (Values in US $ Million)

SICT Code	Commodity	Brazil's Total Export	World's Total Exports	RCA
222	Soya beans, whether or not broken	46664.3	122041.6	23.42
281	Iron ores and concentrates, including roasted iron pyrites....	28888.7	146465.8	12.10

333	Petroleum oils and oils obtained from bituminous minerals; crude.	42688.1	616015.0	4.24
61	Cane or beet sugar and chemically pure sucrose, in solid form	11003.8	37759.5	17.84
334	Petroleum oils, other than crude...	13036.3	844159.8	0.94
11	Meat of bovine animals, frozen	10938.2	66686.5	10.04
81	Oil-cake and other solid residues	10339.5	101192.1	6.26
44	Maize (corn)	12264.1	61794.3	12.15
12	7 Meat and edible offal, of the poultry of heading 01.05...........	8888.1	86303.6	6.31
251	Chemical wood pulp, soda or sulphate, other than dissolving grades......	7906.4	50465.1	9.60
	Total	334463.1	20482368.8	

Source: UN Comtrade and data has manipulated by author itself.

Annexure: 8
Table No.8: Revealed Comparative Advantage of SA's Commodity Export (Values in US $ Million)

SICT Code	Commodity	South Africa's Total Export	World Total Export	RCA
681	Platinum unwrought or in semi-manufactured forms, or in powder form…	16690.4	97010.7	10.54
321	Coal; briquettes, ovoid's and similar solid fuels manufactured from coal...	13383	151404.3	5.41
281	Iron ores and concentrates, including roasted iron pyrites....	6500.1	146465.8	2.72
971	Gold (including gold plated with platinum)	5264.9	406720.8	0.79
781	Motor cars and other motor vehicles principally designed for the transport...	5765.4	758576.1	0.47
671	Ferro-alloys	4252	40633.93	6.41
782	Motor vehicles for the transport of goods	3974.4	158572.4	1.53
287	Manganese ores and concentrates......	2885.8	27639.73	6.40
743	Centrifuges, including centrifugal dryers....	2274.7	169044.8	0.82
334	Petroleum oils, other than crude....	2814.4	844159.8	0.20
	All Commodities	**334463.1**	**20482369**	

Analysis on Parental Involvement on their Children Academic Performance

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ABSTRACT
Parents play a key role in their children's education and their attitudes, beliefs, and expectations significantly impact their child's learning experience. The Purpose of this study aimed to investigate on parental involvement on their children academic performance and the investigation is done by survey in Kanchipuram districts through interviews and review of schools documents. The finding of the study indicates that the overwhelming majority of the respondents were directly involved in their children's learning activities.
Keywords: Parental Involvement, Investigation, Performance

1. Introduction:

Parents are most crucial factors in a child's development. Bandura A. Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review.* 1977;84:191–215. This is because they have the authority and capacity to mound and shape their children into inspired, driven, and tolerant individuals through their direct involvement in educational activities. Birch SH, Ladd GW. The teacher-child relationship and children's early school adjustment. *Journal of School Psychology.* 1997;35:61–79 Specifically, children whose parents are involved to a lesser degree. Chapman M, Skinner EA, Baltes PB. *Developmental Psychology.* 1990;26:246–253. onto border educational policy initiatives. Christian K, Morrison FJ, Bryant FB. *Early Childhood Research Quarterly.* 1998;13:501–521. Researches have reported that parent- child interactions, specifically stimulating and responsiveness parenting are important influences on child academic development. DuPaul GJ, Rapport MD. Teacher ratings of academic skills: The development of the academic performance rating scale. *School Psychology Review.* 1991;20:284–300.

Entwisle DR, Hayduk LA. Lasting effects of elementary school. *Sociology of Education.* 1988;61:147–159 By examining specific parenting practices that are amenable to change, such as parent involvement, and the mechanisms by which these practices influence academic performance, programs may be developed to increase a child's academic performance. Epstein JL. Perspectives and previews on research and policy for school, family, and community partnerships. In: Booth A, Dunn JF, editors. *Family-school links: How do they affect educational outcomes?* Erlbaum; Mahwah, NJ: 1996. pp. 209–246.

2. Research Gap:

Numerous studies have looked at the connection between parental involvement and kids academic success, emphasizing the advantages of engaged parents. To get a thorough grasp of the subject, there are still significant research gaps that need to be filled despite the area's substantial research. The purpose of this article is to identify and examine the gaps in the literature concerning parental participation and how it affects kids academic achievement. The role of cultural and environmental factors on parental participation and its consequent has effect on children's academic success.

3. Statement of the Problem

This study investigated parental involvement in on their children's education and those same parents perceived impact on their children's achievement. Many studies have examined parental involvement and student achievement; however, very few studies are found that have examined what those parents perceive is their impact on their children's achievement. This research study, therefore, has combined both parental involvement and those parents perceptions of their impact on their children's achievement.

4. Objectives of the Study

To analyze the parental involvement with peer group of children's
To analyze the parental involvement with their academic performance.
To find out the parental involvement and its dimensions of primary school students

5. Method selected for the present study

The Investigator adopted survey method of research to find out the parental involvement and academic achievement of 40 family's children were selected for participation in survey.

Population: The population for the present study consisted of all the 40 family's children's studying in schools in Kanchipuram districts. **Sample**: 40 Family's

Statistical Techniques used: For the present study the investigator used ANOVA, CHI-SQUARE.

6. Analysis And Discussion

TABLE-01-ANOVA FOR ANALYSIS BETWEEN PARENTS ROLE IN VISITING SCHOOL

ANOVA

H0: There is no significant between visiting child school and school work.

Ha: There is significant between visiting child school and school work

		Sum of squares	Df	Mean Squares	F	Sig.
Visiting child school	Between groups	6.427	4	1.607	2.877	.037
	Within groups	19.548	35	.559		
	Total	25.975	39			
School work	Between Groups	10.630	4	2.657	2.789	.041
	Within groups	33.345	35	.953		
	Total	43.975	39			

Source : Primary Data, Significant at 5% Level

Analysis:

ANOVA P value (.037) is less than the 0.05, Hence alternate hypothesis is accepted.

TABLE 02- CHI-SQUARE TO ANALYSE THE SIGNIFICANT RELATIONSHIP BETWEEN PARENTS EDUCATION AND STUDENTS OUTPUT IN SCHOOL WORK

H0: There is no significant relationship between parents education and students output in school work

Ha: There is significant relationship between parents education and students output in school work

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-square	11.859	9	.221
Likelihood Ratio	13.221	9	.221
Linear-by-Linear Association	2.738	1	.098
No of valid cases	40		

Source: Primary Data, Sigificant at 5% Level

Analysis:

CHI-SQUARE P Value (11.859) is greater than 0.05 or P>.005, Hence null hypothesis is accepted.

7. Findings of the Study

There is significant inter-relationship between academic achievement and parental involvement in total and its dimensions – reading material, study habits, homework, and socio- economic status and family affiliation of school's students living with both the parents. This may be due to fact that parents encourage the children to study well since they know the fate of people who are not educated.

8. Recommendations

In the light of the findings of the present study the investigator offers the following recommendations,

The parents should become more conscious of the responsibilities towards their children in moulding and shaping their academic performance.

Parental Involvement plays a great role in high achievement of a student, so the parents should encourage their children to achieve better.

The parents should keep positive attitude and motivate their child to show better performance

9. Conclusion

The study shows parental participation influences kids' motivation and attitude towards learning in a good way. Students typically grow a greater sense of self- efficiency and intrinsic drive when parents take an active interest in and participate in their children's education.

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An Approach to Detect the Land Cover Change Using Histogram Based Thresholding for Landsat-8 OLI Images

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Abstract

Satellite images have become an invaluable resource for tracking and evaluating large-scale changes in land use and cover. Accurate and efficient segmentation of satellite images is a critical step in the process of change detection, enabling the extraction of meaningful information for various applications, including urban planning, environmental monitoring, and disaster management. Traditional image segmentation methods often involve complex algorithms and extensive computational resources, making them less suitable for real-time applications and large-scale image datasets. To address these limitations, this study investigates the integration of histogram-based thresholding techniques, such as density slicing and Decision Tree classification methods for mango crop acreage change detection. This research paper presents a comprehensive exploration of different approaches to enhance the speed and simplicity of satellite image segmentation techniques using histogram-based thresholding techniques for detecting changes in land use and cover.

Keywords: Histogram, Thresholding, Change detection, Fast and simple methods

1. INTRODUCTION

The mango is a significant fruit crop in India, which is the second-largest fruit producer in the world. Fruit crops are essential for raising land productivity and the financial well-being of farmers by boosting income, creating jobs, and ensuring dietary security. Information on the current situation of crop area change must be understood to better manage crops and bring more land under fruit crops (Verma et al., 2019). Change detection is the process of spotting differences in an object's or phenomenon's condition through repeated observation (Singh, 1989). Monitoring and assessing large-scale changes in land cover and land use now requires the use of satellite images. These changes have significant implications for environmental sustainability, urban development, and disaster response. Image segmentation, which divides an image into meaningful regions, is a crucial step in the process of change detection. Traditional segmentation methods often involve intricate algorithms and are computationally intensive, limiting their utility for real-time applications and large-scale datasets. This paper presents innovative approaches to satellite image segmentation that prioritize speed and simplicity without compromising accuracy. These thresholding methods rely on the statistical distribution of pixel intensities in satellite images to automatically determine optimal thresholds, simplifying the change detection process. This study focuses on, histogram-based thresholding techniques. The research assesses the performance of these histogram-based thresholding methods. Experimental results demonstrate that histogram-based thresholding methods not only offer computational efficiency but also maintain high segmentation accuracy, making them suitable for land cover/land use change detection applications.

In a brief literature review, it is found that a knowledge-based decision tree has been used extensively for LU/LC classification (Verma et al., 2019) but no work has been reported for the application of DTC for change detection. Monitoring environmental changes and identifying changes in land use and land cover are two significant applications of various change detection techniques. Researchers investigated the effectiveness of four change detection algorithms, including image regression, mean ratio, image differencing, and log-ratio, and found that the output of these approaches had been less impacted by speckle noise (Sharma and Gulati, 2017). Furthermore, this paper explores a machine learning technique, i.e. knowledge-based decision tree, in conjunction with histogram-based thresholding for change detection in acreage of mango crop by using Landsat 8 OLI images of Lucknow region.

2. STUDY AREA AND SATELLITE IMAGES USED

2.1 Study area

This study is being carried out in the Uttar Pradesh state of India's Lucknow area, which is almost in the middle of the country. Between latitudes 260 30' and 27o 10' N and longitudes 80o 34' and 81o 12' E, it is situated. Sitapur to the north, Barabanki to the east, Rae Bareli to the south, Hardoi to the north, and Unnao to the south encircle the Lucknow district. The location map of Lucknow is shown in Figure 1.

Figure 1. The location of the study area on a map of India.

2.2 Satellite images

Landsat 8 OLI images are taken into consideration in this study because of their multispectral (11 bands), moderate spatial resolution (30 m), except one panchromatic band of 15 m and two thermal bands of 100 m each), and availability of lengthy time series images with a temporal resolution of 16 days. Table 1 displays the image ID, acquisition date, and spatial resolution for the two image sets used in this study.

Table 1. Information about the Landsat 8 OLI images used in the study

Acquisition Date	Image ID	Resolution (m)	Name of Images
14-02-2015	LC08_L1TP_144041_20150214_20170413_01_T1	30	Image-1
25-02-2019	LC08_L1TP_144041_20190225_20190309_01_T1	30	Image-2

3. METHODOLOGY

3.1 Pre-processing of Landsat 8 OLI images

Multi-temporal image registration, radiometric calibration, and atmospheric corrections are a few of the most crucial pre-processing stages (Lu et al., 2014). By lowering the noise, radiometric calibration enhances the quality of satellite images, and much is needed for multi-temporal image quantitative analysis. Landsat-8 OLI images are already georeferenced at the Universal Transverse Mercator projection system (Zone: 44° N, Datum: WGS-84). Atmospheric factors, such as the Sun's zenith angle, solar radiation, fog, haze, ice, and atmospheric scattering, affect the spectral signatures of the same invariant objects at various image capture dates. It is necessary to use an appropriate atmospheric correction method to transform the raw pictures into surface reflectance (Lu, D, L. Guiying and E. Moran., 2014; Chander et al., 2009). For radiometric and atmospheric correction, several techniques, including relative calibration, dark-object subtraction, and complicated model-based calibration, have been devised (Shivakrishna et al., 2021). Due to its stringent image-based nature and correction for the effects of the sun's zenith angle, solar brightness, and air scattering, the dark-object subtraction approach is frequently utilized in practice (Shivakrishna et al., 2021). The spectral signatures for the same invariant objects are affected by the atmospheric conditions at the various acquisition dates. As a result, surface reflectance conversion from unprocessed images using an appropriate atmospheric calibration method is required (Chander et al., 2009; Song et al., 2001; DU et al., 2002). In order to estimate the genuine surface reflectance values, atmospheric effects from multi-temporal images of the Lucknow region are removed. Individual NIR and Red band images have shown to be unable to identify changes in mango crop patches. Thus, the SAVI image is computed using NIR and Red images.

3.2 Soil Adjusted Vegetation Index (SAVI) image

There are gaps between canopies that show background dirt in a number of mango trees. The brightness that soil reflects has a negative impact on the image's quality. In satellite images, SAVI reduces the effect of background soil brightness. As a result, SAVI is utilized in change detection techniques as a vegetation index. SAVI is computed from NIR and RED band images as follows:

(1)
$$SAVI = \frac{(\rho_{NIR} - \rho_R)*(1+L)}{(\rho_{NIR} + \rho_R + L)}$$

Where L is the soil brightness correction factor, ρ_R is the reflectance of the red band, and ρ_{NIR} is the reflectance value of the near-infrared band. The amount of coverage of green vegetation affects L's value. In most exposed background soil settings, an L=0.5 works well (Huete,1988).

3.3 Change Detection Methods

Vegetation index differencing (VID) (Singh, 1986), image rationing (IR) (Wilson et al., 1976), principal component analysis (PCA) (Hussain et al., 2013), log-ratio (Bovoloet al., 2013), and others are some of the most often utilized change detection techniques. In the present study, VID is considered for further testing of the performance of two image segmentation methods.

3.3.1. Image Threshold and Segmentation

Image thresholding is a kind of segmentation that is used to convert raster images into a binary form that facilitates further image analysis. Image thresholding separates foreground pixels from background pixels i.e., classifies the image. For classifying VID images, thresholds are used to calculate as change and no change pixels in the following manner:

Using the values for the mean (μ) and standard deviation (σ) of the VID image, a threshold is calculated as equations (2) and (3):

$$T_1 = \mu - N * \sigma \qquad\qquad\qquad (2)$$
$$T_2 = \mu + N * \sigma \qquad\qquad\qquad (3)$$

Where "N" is a factor that can be manually tuned. The optimal value of "N" is chosen as the value for which the best accuracy measurements are discovered. The value of "N" is initially set to 0.1 and increased at intervals of 0.1 until it reaches 1.0. Positive change, no change, and negative change are determined using T1 and T2. No change is indicated by image pixels with values between T1 and T2, while a negative change is shown by pixels with values below T1. Similar to this, pixels with values higher than T2 signify "Positive change." By visualizing the VID raster image's histogram, as seen in Figure 2, it is simple to comprehend. The histogram offers a way to calculate both thresholds easily.
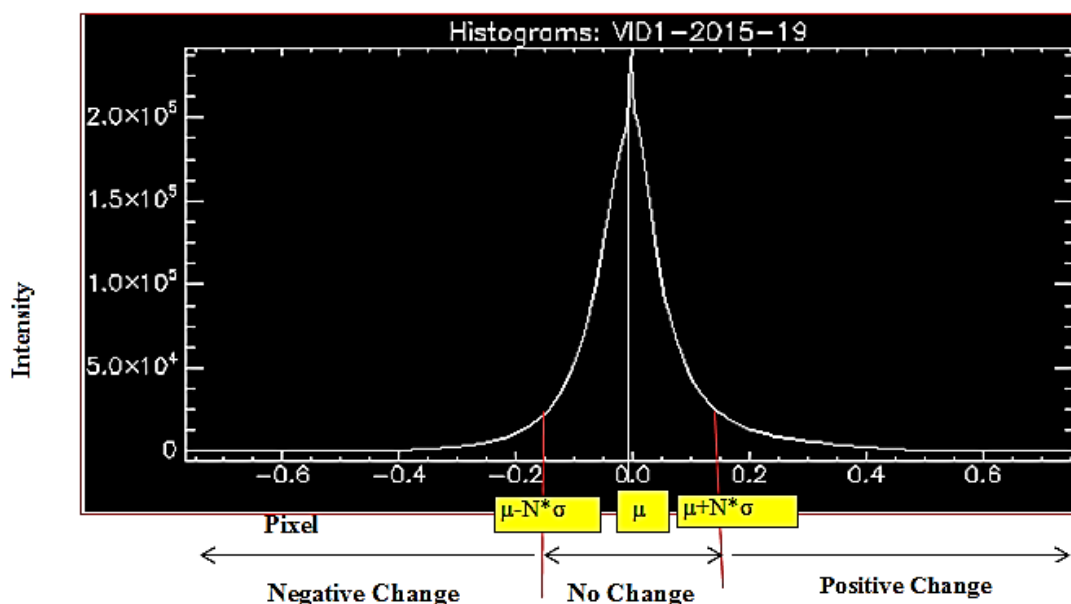
Figure 2.Histogram of raster image VID-2015-19

The histogram of the vegetation difference image is frequently used to determine the threshold value border between "change" and "no change" pixels (Zhang and Lu 2008). The definition of thresholds showing the change, however, is a crucial component of the histogram-based thresholding strategy (Johansen et al., 2008). The decision rules for segmenting into the three groups of "positive change," "no change," and "negative change" are readily formulated as follows once the values of both thresholds have been ascertained:

If pixel value < T_0 then pixel class = Negative change
If T_0 <= pixel value <= T_1 then pixel class = No change
If pixel value > T_1 then pixel class = Positive change

The VID image can be readily segmented using the aforementioned decision criteria by utilizing a decision tree classifier, density slicing, or by building a computer program. The present study uses the Decision tree classifier and Density-slicing methods of image segmentation for segmenting VID images.

4. RESULTS AND DISCUSSION

4.1. Image Segmentation

The VID image can be rapidly and easily segmented using the aforementioned decision criteria by building a computer program, using a decision tree classifier, or density slicing. In a study researchers (Verma et al., 2022) found that n = 0.20 provides the best accuracy for VID image, derived by SAVI images of years 2015 and 2019 for the Lucknow region, and it is used for change detection. Considering N=0.2, T_1 and T_2 for VID-2015-19 image is calculated to be -0.12028 and 0.021578. Similarly, minimum and maximum values of pixel intensities are -0.767369 and 0.754733, respectively. Using these values the decision rules can be formulated as follows:

If -0.767369 < PI < -0.12028 then "Negative change"
If -0.12028 ≤ PI ≤ 0.021578 then "No change"
If 0.021578 < PI <0.754733 then "Positive change"
Else "Un-classified"
Where, PI=Pixel Intensity
In the present study, two methods are discussed in detail which are discussed as follows:

4.1.1.VID image segmentation for change detection by using density slicing
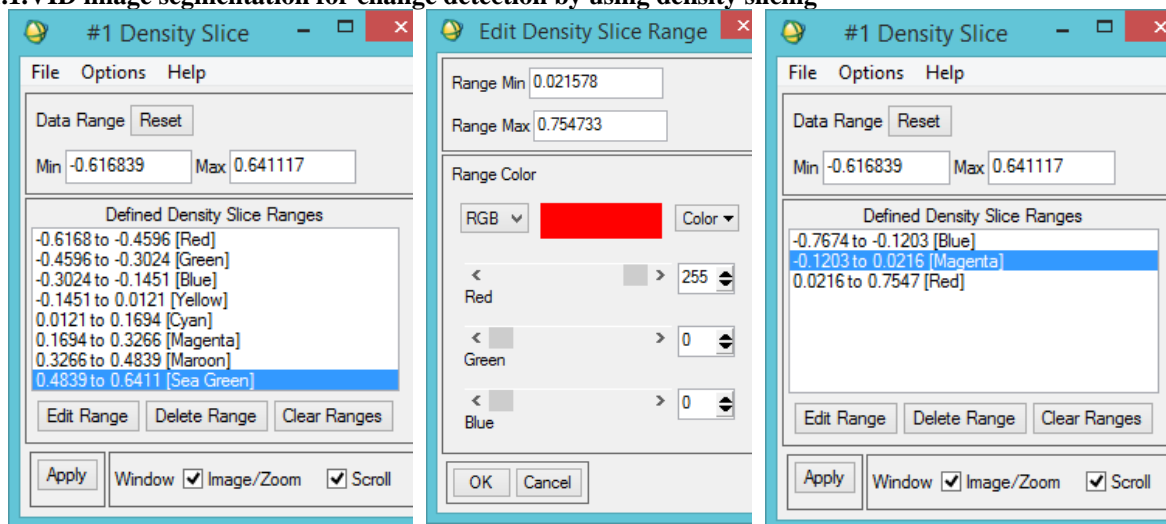
(a) Initial screen   (b) Screen to edit density slice range   (c) Final screen showing assigned values and colors for all three classes

Figure 3. Different density slicing screens of ENVI toolbox.

Once both threshold values are calculated, this method can be used to segment the image into positive change, negative change, and no change areas. Here Satellite images of Lucknow of years 2015 and 2019 are used to derive VID images. The segmented VID image is shown in Figure 5(b).

4.1.2 VID image segmentation for change detection by using DTC

Using the decision rule discussed in Sec. 3.3.2, a decision tree can be developed as shown in Figure. 4.
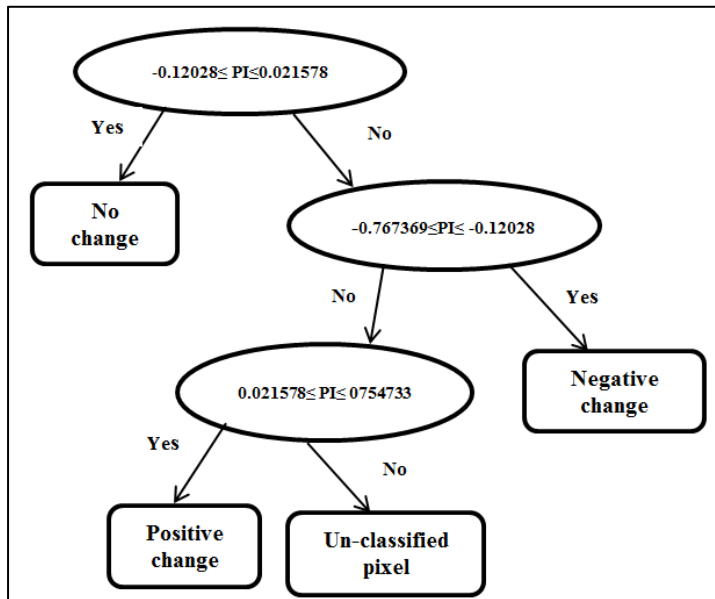
Figure 4. DTC for LU/LC change detection of Lucknow during 2015-19.
DTC of Figure 4 is used for segmenting the VID of Figure 5 (c), which resulted in the segmented image shown in Figure 5 (d).

(a) Raster VID image during 2015-19

(b) Segmented VID image of 2015-19 by Density slicing

(c) Raster VID image during 2015-19

(d) Segmented VID image of 2015-19 by DTC
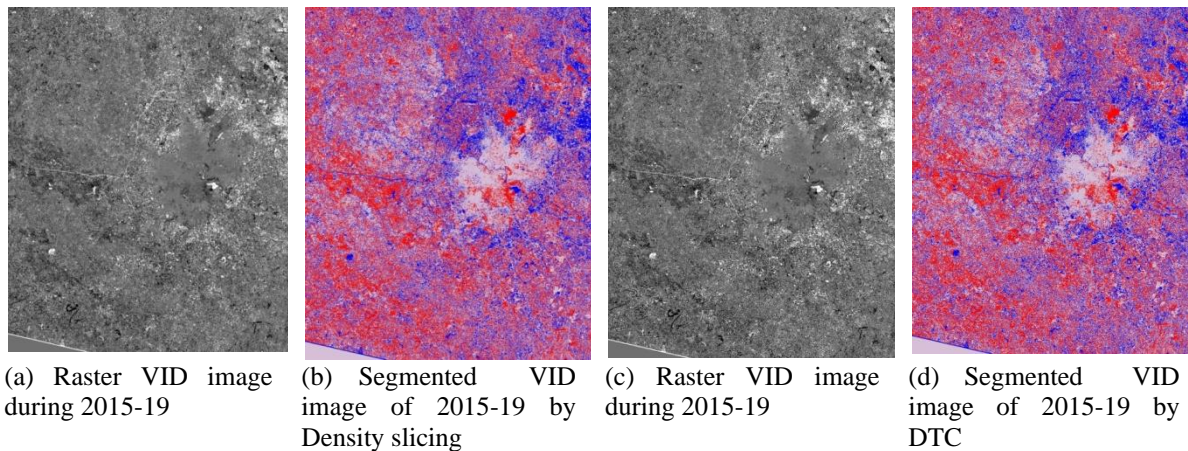
Figure 5. Raster and corresponding images segmented by (a)-(b): Density slicing, (c)-(d): DTC method.

4.1.3. Masking of the non-mango area

Masking is a technique that is used to hide/filter unwanted regions of an image**.** The present study uses masking to hide non-mango areas from the classified image. SAVI image of 2019 is converted as a mask image for retaining only mango crop area and discarding non-mango crop area from the classified map. For this purpose, the SAVI image is classified in mango and non-mango classes by developing a DTC with a decision rule: If $0.3093 <=$ SAVI band SAVI $<= 0.35$, then 'Mango crop' else 'Non-mango crop area'. Once an image is classified, the pixel value of the mango crop class is set to one to make this area transparent and for non-mango crop areas, the pixel values are set to zero. When the mask image is overlaid on the thresholded image, the final image will show only the mango crop area and all other areas become background/unclassified with the color black. This process creates a mask image with the mango area transparent and other areas turned off. The final change image for the mango crop during 2015-19 for the Lucknow region is shown in Figure 6.

) Final change detection image segmented by   Final change detection image segmented by DTC
  Density slicing

| ■ Negative change | ■ No change | ■ Positive change | ■ Background |
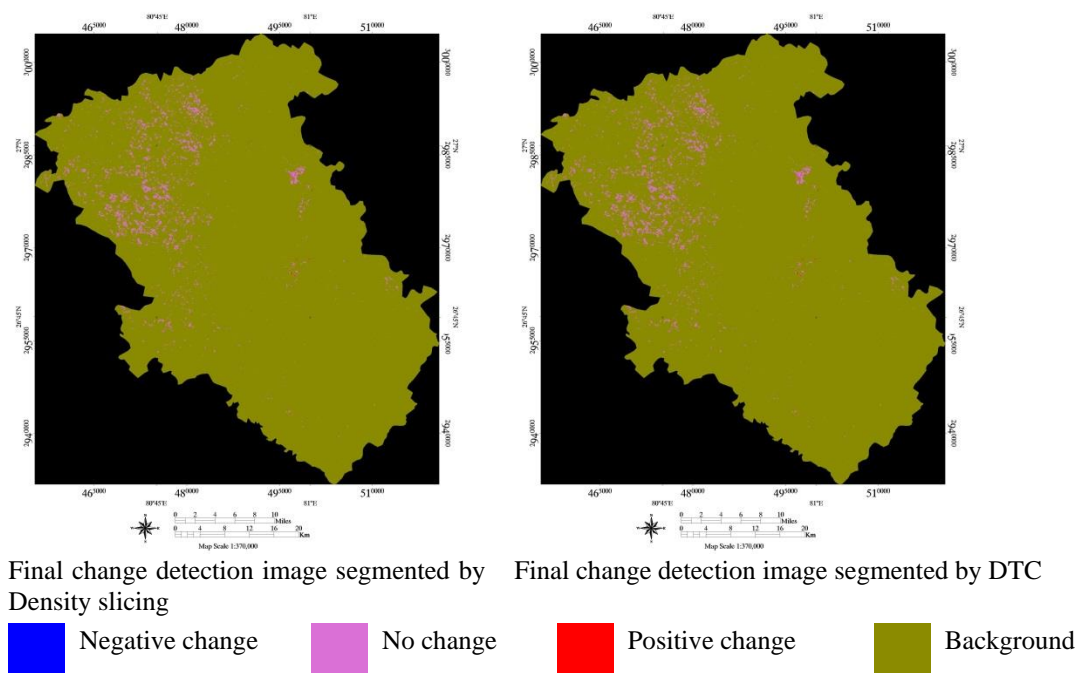
Figure 6. Final change maps from VID segmented by, (a) Density slicing and (b) DTC

After the raster image is thresholded to determine the 'Positive change', 'Negative change' and 'No change' areas, to obtain the final change map, a mask with pixel value '0' is applied to mask out the non-mango area, and thereafter change detection accuracies are calculated by using ground truth field/ancillary data.

4.2. Accuracy assessment

Two important accuracy assessment parameters are computed by using a change map. These are Change Detection Accuracy (CDA) and False Alarm Rate (FAR).
Suppose class A is a positive class i.e., representing the positive change, and class B is a negative class i.e., representing the negative change. The key terms of the confusion matrix are as follows:
True positive (TP): Predicting positive class as positive
False positive (FP): Predicting negative class as positive
True negative (TN): Predicting negative class as negative
False negative (FN): Predicting positive class as negative
TP and TN are ok and desirable but FP and FN are not ok.
Accuracy assessment parameters are computed using TP, FP, FN, and TN. These are given below:
4.2.1. Change Detection Accuracy (CDA)
The Change Detection Accuracy is calculated by adding the number of correctly classified values(TP and TN) and dividing by the total number of values.

$$CDA = \frac{(TP+TN)}{(TP+FP+TN+FN)} \qquad (4.7)$$

The higher the CDA, the better will be the change accuracy.
4.2.2. False Alarm Rate(FAR)
It is the ratio between the number of negative changes wrongly categorized as positive (false positives) and the total number of actual negative changes (regardless of classification).

$$FAR = \frac{FP}{(TN + TP)} (4.8)$$

The lower the FAR, the better will be the change accuracy.

4.3. Comparative evaluation of accuracies of VID segmentation by density slicing and DTC methods for change detection.

A comparative analysis of VID images segmented by two methods i.e. Density slicing and DTC has been conducted to observe the suitable fast segmentation method for change detection in mango crop areas. Change images retrieved from Density slicing and DTC methods are shown in Figures 6.0 (a) and 6.0(b). The performance

evaluation of both segmentation methods has been conducted by measuring the change detection accuracy (CDA) and false alarm rate (FAR) using a confusion matrix derived from field data and a final change image. The CDA and FAR values retrieved for Density slicing and DTC methods are similar for both methods that have CDA and FAR values of all N values. Therefore, it is observed both methods have provided exactly similar accuracies but the DTC method is easy and efficient to implement and can easily be found in free software also.

Table 2: Comparison of accuracies of different image segmentation methods for Vegetation Index Differencing (VID) based change detection in acreage of mango crop.

N	Density slicing method of image segmentation		DTC method of image segmentation	
	CDA (%)	FAR	CDA (%)	FAR
0.1	91.10	0.068	91.10	0.068
0.2	91.60	0.053	91.60	0.053
0.3	90.60	0.060	90.60	0.060
0.4	91.10	0.065	91.10	0.065
0.5	90.90	0.063	90.90	0.063
0.6	89.60	0.074	89.60	0.074
0.7	89.50	0.070	89.50	0.070
0.8	87.50	0.095	87.50	0.095
0.9	91.20	0.083	91.20	0.083
1.0	78.60	0.172	85.20	0.200

5. Conclusion

This research paper presents innovative approaches for fast and easy satellite image segmentation for land cover/land use change detection. It also contributes to the field of satellite image analysis by presenting different approaches that leverage histogram-based thresholding techniques to achieve fast and easy segmentation for land cover/land use change detection. The findings demonstrate that these methods offer a compelling alternative to conventional segmentation techniques, enabling more efficient and accurate analysis of large-scale satellite image datasets. By harnessing the capabilities of histogram-based thresholding methods and integrating them with DTCs/ Density slicing, we have achieved a compelling balance between computational efficiency and segmentation accuracy. These methods have far-reaching implications for applications requiring timely and accurate land cover change detection, including environmental monitoring, urban planning, and disaster management.

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A Study of The Role of Mindfulness in Enhancing Academic Performance

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Abstract:
Mindfulness is a mental practice rooted in ancient contemplative traditions, it has gained substantial attention in contemporary educational settings due to its potential to positively impact academic performance. This presents and explore the role of mindfulness in enhancing academic performance. The review synthesizes findings from various studies to elucidate the mechanisms through which mindfulness may contribute to improved emotional regulation, and enhanced cognitive functions. Further, the paper highlights top potential implications of mindfulness-based interventions in educational settings and offers insights into integrating mindfulness practices into educational curriculum. Overall, the review under the scores the promising prospects of mindfulness as a valuable tool for optimizing academic performance and fostering a conductive learning environment.

1. Introduction

Mindfulness, a practice deeply rooted in ancient contemplative traditions, has emerged as a prominent area of research and application in contemporary psychology and education. It is defined as the intentional and non change mental awareness of the present moment, mindfulness encompasses an individual's heightened attention to thoughts, emotions, and bodily sensations. Oh where the past few decades, mindfulness-based practices have gained considerable attention for their potential to positively influence various aspects of human well-being, including mental health, emotional regulation, and cognitive function. Moreover, the application of mindfulness in educational settings has garnered growing interest due to its perceived capacity to enhance academic performance and overall learning experiences.

2. Operational Definition

Mindfulness is the quality or state of being conscious or aware of something. It can help people avoid destructive automatic habits and responses by learning to observe their thoughts, emotions and other present moment experiences without judging reacting to them.

3. Review Literature

Alomari,H. (2023) The author has studied on "Mindfulness and its relationship to academic achievement among university students". His objective was to access the degree of mindfulness among university students on the basis of their gender and academic achievement level. He concluded there is no significant gender differences and moderate level of mindfulness. Further, it also revealed that students with higher academic achievement displayed greater mindfulness.

Anila,M.,M.,Dhanalakshami,D. (2016) They have worked on "Mindfulness based stress reduction for reducing anxiety, enhancing self-control and improving academic performance among adolescent students".Their objective was to investigate the effectiveness of mindfulness based stress reduction intervention for reducing anxiety, enhancing self-control and improving academic performance among adolescent students. They found in their study that self-control of students influenced by the two factors anxiety and academic performance, and further, self-control affects the academic performance.

Armenteros,S.,M.,Goomez,R.,C.,Sanchez,A.,R.,Barghouti,Z. (2019) The authors have worked on "Mindfulness and academic performance: the role of compassion and engagement". Their aim was to analyze the relationship between mindfulness and academic performance and it can be explained by the role of compassion and engagement. The result revealed that the compassion partially mediates the relationship between mindfulness and engagement and consequently, increased academic performance.

Caballero,C., Scherer, E., West, M.,R., Mrazek, M., D., Gabrieli, C., F., O., Gabrieli,J.,D.,E. The authors have worked on the "Greater mindfulness is associated with better Academic achievement in middle school". They have measure mindfulness over urban students of great 5 to 8. They found the relation between mindfulness and academic achievement was similar across demographic characteristics.

Darren,D.,L.,Griffiths,K.,Kuyken,W.,Crane,C.,Foulkes,L.,Parker,J.,Dalgleish,T.(2018) They have worked on "The effect of mindfulness-based interventions on cognition and mental health in children and adolescents- A meta analysis of randomized controlled trials". They examined 39 studies with mindfulness interventions that is used and RCT design with 17 studies having controlled conditions. Their studies included around 3666 children and adolescents with outcome measures in cognitive, behavioral and emotional domains. The results indicated significant positive effect in mindfulness intervention groups for the measures on mindfulness, executive functioning, depression, attention and negative behaviors.

Firth,A.,M.,Cavallini,I.,Sutterlin,S.,Lugo,G.,R.(2022) The authors have worked on "Mindfulness and self-efficacy in pain perception, stress and academic performance". The influence of mindfulness on cognitive process. Their aim of the study was to understand the meditating effects of mindfulness on self-efficacy, academic performance and ability to cope with pain. They found that self efficacy influenced pain intensity and pain unpleasantness and significantly predicted academic performance. But the mindfulness has mixed results in how it influenced self efficacy, while it influenced well-being and lowered stress.

Ghosh,P.(2009)Found "Effect of mindfulness based stress reduction on certain psychosocial aspect of patients suffering from breast cancer". She found in her study that mindfulness trainingis a kind of program that has been shown to be beneficial for clinical and non clinical populations. Further included the overwhelming effects of breast cancer patient psychological life and the rapid increase no. of breast cancer survivors seeking psycho-social assistance.

Sarwate,R. (2019) She found on effects of "Mindfulness training program on early adolescence, mindfulness skills, emotional competence and adjustment". In her research she has discussed various characteristics features of an early adolescents phase and concepts of emotional competence an adjustment. She has given the concept of mindfulness and its role on the school based mindfulness training to promote well-being.

Mandal,E.,P.(2022) Founded "Role of emotional complexity and emotion regulation in trait mindfulness health relationship". They have included conceptualized health as a product of different bio-psychosocial factors and in it the matrix of inter related socio cultural, behavioral, cognitive as well as effective variables. They have also mentioned mindfulness as the trait or meditative practice which drew attention of the of the scholars.

Maynard,B., R., Solis,M.,R.,Miller, V., L., Brendel, K., E. (2017) The authors studied on "Mindfulness-based interventions for improving cognition, academic achievement, behavior and socio-emotional functioning of primary and secondary school students. They have examined the effectiveness of school-based mindfulness based interventions on cognition, behavior, social emotional outcomes and academic achievements. They found in the result suggested that the interventions produced similar results across studies on cognitive, socio-emotional and academic outcomes despite the interventions being quite diverse.

Melià,L.,V. Estrada, M., Monferrer, D., Sànchez, A.,R. (2022) The authors have worked on "Does mindfulness influence academic performance? The role of Resilience in Education for Sustainable Development". There mean aim was to find out that how mindfulness place in the learning process in response to the need to develop students' emotional competencies in Education for Sustainable Development (ESD). And another aim was to find out how the impact of the mindfulness on academic performance through resilience. Their results of the study showed how students' mindfulness has a positive impact on resilience and as well as the same time resilience has a positive relationship with academic performance.

Nawaz,D.,Khizar,U.,Aqdas,R.,Shahzadi,M.,Iqbal,S.(2021) They worked on "The impact of test anxiety and mindfulness on academic performance among university students". Their aim was to analyse the impact of test anxiety and mindfulness on academic performance among university students. The result showed that there is a significant relationship between test anxiety, mindfulness and academic performance among students, and there are differences in the test anxiety, mindfulness an academic performance in terms of gender. Comparatively males have more test anxiety and females are high at mindfulness as compared to males. And it found the less difference in academic performance. It was concluded that male students are more prone to undergo test anxiety and less at being mindful.

4.   Conclusion

It was the aim to provide a comprehensive examination of the existing research on the role of mindfulness in enhancing academic performance. We delve into the mechanisms through which mindfulness practices influence cognitive processes, emotional regulation, and stress management, ultimately contributing to improved academy outcomes. Additionally, We explored the potential implications of integrating mindfulness into educational

settings, discuss the benefits and limitations of mindfulness-based interventions, and suggest practical strategies for implementation within academic curriculum. Through this comprehensive analysis we aspire to shed light on the promising role of mindfulness as a tool for enhancing academic performance and fostering and optimal learning environment.

The exploration of mindfulness within the realm of academic performance reveals a promising trajectory for advancing educational practices and promoting holistic student development. This comprehensive review has synthesized a body of evidence suggesting that mindfulness holds considerable potential in enhancing various dimensions of academic performance, including attention, cognitive function, emotional regulation, and stress management. The integration of mindfulness practices in educational settings offers are viable approach to fostering a conductive learning environment that nurses both academic excellence and well-being.

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Predicting Student Feedback on Teaching Processes with Machine Learning Classifiers: A Systematic Approach

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Abstract

This study aims to introduce a model for analyzing student feedback systems, with the goal of enhancing the quality of teaching in academic institutions and universities. The model integrates machine learning algorithms with textual feedback analysis. It focuses on analyzing student feedback, including comments, opinions, and reviews, pertaining to teacher performance. Textual feedback offers valuable insights into overall teaching quality and suggests effective methods for enhancing teaching approaches. The study explores various machine learning techniques, such as SVM, Random Forest, Naïve Bayes algorithms, and lexical analysis. Among these, SVM demonstrates the highest accuracy, albeit with longer training times for large datasets. It is employed for both regression and classification tasks, particularly for text classification. The dataset contains valuable information related to teaching and learning quality. This research examines textual comments within the dataset and classifies student feedback into positive, negative, and neutral categories based on polarity. The system streamlines the process, reduces manual effort, and stores collected feedback in a database accessible to authorized personnel. The feedback analysis is presented to teachers through ratings and graphical representations, facilitating data visualization. This approach proves to be an efficient method for providing qualitative feedback to teachers, ultimately enhancing the learning experience for students.

KEYWORD: ML (Machine Learning), AI (artificial intelligence), Feedback system, SVM algorithm, Naïve Bayes algorithm.

1. Introduction

The name machine learning was a proposal of Arthur Samuel in year 1959 [1]. ML is a sub-set of AI, in this move towards algorithms train themselves by means of data and related information independently. Emerged from the revision of PR and computational learning theory in artificial intelligence [2] ML explores the learning and building of algorithms that can learn to predict on data [3]. ML is strongly related to computational statistics, which as well targets of making forecast with the assist of computers.

ML is a process used to construct complex coded rules (algorithms) and model so as to lend themselves to forecast in business-related use, this is called as predictive analytics. Present day ML coded rules empower computers to communicate with humans, automatically drive cars, find terrorist suspects. Based on the regulations of birth, the expert systems started in 80s. Expert systems were rapidly ratified by the corporate sector, bringing out interest in ML. 1981 — Gerald Dejong introduces the concept of "Explanation-Based Learning" (EBL), in which a computer analyzes the training data and creates general rules allowing the less important data to be discarded. 1985 — Terry Sejnowski invents NetTalk, which learns to pronounce words in the same way a child would learn to make. The field of ML is relaunched based on the potential estimate of ample data available. Many businesses are advancing to incorporate ML into their operations in order stay ahead in their competition [4]

2. Literature Survey

The paper focuses on utilizing Opinion Mining to classify student comments collected during module evaluation surveys. The mined and preprocessed datasets are subjected to several supervised evaluations, including methods such as Support Vector Machine (SVM), Naïve Bayes (NB), k-Nearest Neighbor (KNN), and Neural Networks (NN).[26]

It is evident that there is a noticeable increase in the availability of information, driven by factors such as the growing volume of electronic transactions and the widespread use of IT across all devices. One of the primary developments in this context is the concept of open data initiatives. Notably, both European and U.S. governments are increasingly making their data repositories accessible to the public for viewing and utilization. Another emerging trend is the vast amount of data generated by citizens through participatory sensing. People play an

active role in providing commentary and feedback online, and they are increasingly using technology to share additional information.[27]

The paper presents a web feedback system aimed at automating the process of recording student feedback. This system is designed to gather feedback submitted by students and classify it into positive or negative feedback categories using a Support Vector Machine (SVM) classifier. Subsequently, it generates a performance summary for instructors based on the subjects they taught during the academic term using a predefined scoring algorithm. In my opinion, this proposed system could prove to be beneficial for educational institutions. Additionally, it offers a valuable tool for educators to assess their teaching performance in a concise and structured manner. The web feedback system, as outlined, is capable of recording student feedback, analyzing teacher performance through sentiment analysis using SVM classification, and summarizing the results based on a predefined scoring method that counts the frequency of positive and negative reviews.[28]

This work aims to analyze feedback data from educational institutions more comprehensively. Traditionally, feedback has been used solely to assess teacher performance. However, this paper suggests using data processing techniques to understand the institution, courses, and students better. Since feedback formats vary among institutions, various data processing methods are employed to analyze student feedback comprehensively. This analysis encompasses all feedback parameters, aiding management in policy decisions for the teaching-learning process. The paper surveys diverse data processing techniques applied to feedback analysis, emphasizing a broader perspective beyond teacher evaluation. [29]

3. Methodology

Data is gathered from students in the form of college feedback, primarily consisting of textual reviews. This data undergoes a pre-processing step to clean and prepare it for analysis. Subsequently, opinion classification is carried out on the dataset, resulting in actionable insights and outcomes.
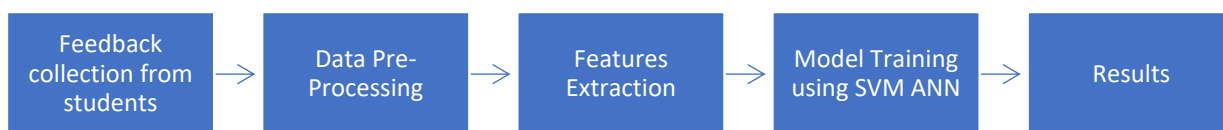
Fig3.1: Processing of dataset

A dataset is a collection of interconnected information, encompassing stored, retrieved, or organized data elements, often treated as a cohesive unit, typically referred to as a folder. In our project, we are utilizing a comma-separated value data structure. Datasets can be categorized into two types: linear datasets, characterized by equal properties among their elements, and non-linear datasets, where properties vary across elements. Machine learning is particularly effective for linear datasets.

The dataset in question comprises reviews submitted by students, containing 30,000 entries with student IDs, student names, reviews, and corresponding emotions. These reviews provide textual input about the college. Preprocessing involves the systematic refinement of data by removing redundant elements, enhancing result accuracy by eliminating data errors. However, caution must be exercised during pre-processing, as certain actions, such as spell-checking, can inadvertently remove important words. Data cleaning is a crucial step, as real-world data is often noisy, incomplete, and inconsistent. Common pre-processing techniques include tokenization, converting text to lowercase or uppercase, punctuation removal, number removal, repeated letter removal, stop-word removal, stemming, and handling negations. The data obtained after pre-processing is then fed into the machine learning algorithm.

Subsequently, the data is trained using machine learning algorithms. These trained machine learning models generate a confusion matrix and accuracy metrics. Additionally, the processing time required for this module is displayed. The algorithm's output includes a new column that displays the predicted emotion for each review.

4. Prediction in Accuracy of Algorithm

SVM Algorithm:
Support Vector Machine (SVM) is a powerful data analysis technique. It determines decision boundaries and utilizes kernels for computations in the input space. The input data consists of two sets of vectors, each of size "m." These vectors represent data points, which are then classified into specific classes. The primary goal is to find a margin that separates two classes while being as far as possible from any data point. This margin represents

the classifier's robustness, with a larger margin reducing uncertain predictions. SVM supports both classification and regression tasks, making it valuable for statistical learning theory. SVM excels at precisely identifying the key factors that must be considered to achieve successful understanding and classification of data.

The steps followed by an SVM (Support Vector Machine) in a typical machine learning workflow are as follows:

1. **Import the Dataset:** Start by importing the dataset that contains the data you want to work with. This dataset should include both the input features (attributes) and the corresponding labels (classifications).
2. **Explore the Data:** Explore the dataset to gain insights into its structure, the nature of the features, and the distribution of the labels. This step helps you understand the data you're working with.
3. **Pre-process the Data:** Pre-process the data to handle missing values, outliers, or any other data quality issues. Data pre-processing may also involve feature scaling or normalization to ensure that features are on similar scales.
4. **Split the Data:** Divide the dataset into two parts: the attributes (input features) and the labels (output or target variable).
5. **Divide into Training and Testing Sets:** Split the data into training and testing sets. The training set is used to train the SVM model, while the testing set is used to evaluate its performance.
6. **Train the SVM Algorithm:** Train the SVM algorithm using the training dataset. The goal is to find the optimal decision boundary (hyperplane) that best separates the data into different classes while maximizing the margin.
7. **Make Predictions:** Once the SVM model is trained, use it to make predictions on the testing dataset or new, unseen data.
8. **Evaluate the Results:** Evaluate the performance of the SVM algorithm by comparing the predicted labels to the actual labels in the testing dataset. Common evaluation metrics include accuracy, precision, recall, F1-score, and confusion matrix.

These steps represent a standard workflow for using SVM in a supervised learning context. Depending on the specific problem and dataset, you may need to fine-tune hyperparameters, handle class imbalances, or employ different kernel functions to achieve optimal results.

5.   Experimental Results

In this research, Python is employed to assess the algorithm's performance using accuracy metrics based on student feedback. The dataset, comprised of student feedback, undergoes pre-processing, including the removal of stop words and word stemming. Subsequently, the pre-processed dataset is subjected to the Naive Bayes algorithm for further analysis.

	precision	recall	Fl-score	support
neutral	0.65	0.59	0.62	140
sadness	0.00	0.00	0.00	0
worry	0.54	0.40	0.46	110
micro avg	0.50	0.50	0.50	250
macro avg	0.40	0.34	0.35	250
weighted avg	0.60	0.50	0.55	250

0.5

Fig 5.1 Classification report of naïve bayes

Fig 5.1 The model's performance is evaluated, and it achieves a 50% accuracy rate when applied to randomly selected values from the dataset. Additionally, precision and recall metrics have been calculated for the various classes within these randomly chosen feedbacks in the dataset.

	precision	recall	f1-score	support
neutral	0.61	0.70	0.65	100
sadness	0.48	0.30	0.37	44
worry	0.64	0.64	0.64	105
micro avg	0.61	0.61	0.60	250
macro avg	0.57	0.55	0.56	250
weighted avg	0.60	0.61	0.60	250

0.607

Fig 5.2 Classification report of SVM

Fig 5.2 It is reported that the representation accuracy reaches 60% when employing the Support Vector Machine (SVM) algorithm. Notably, the accuracy of the SVM representation outperforms that of the Naïve Bayes model.

	precision	recall	f1-score	support
neutral	0.98	0.98	0.97	140
worry	0.97	0.96	0.97	110
micro avg	0.98	0.98	0.98	250
macro avg	0.97	0.97	0.98	250
weighted avg	0.98	0.98	0.97	250

0.881

Fig 5.3 Classification report of ANN

Fig 5.3 It is demonstrated that the representation accuracy reaches an impressive 88% when utilizing the Artificial Neural Networks (ANN) algorithm. This outcome clearly illustrates that the ANN algorithm has outperformed all other machine learning algorithms used in the study.

Algorithm	Accuracy Obtained
Naïve Bayes	50%
Support Vector Machine	60.7%
Artifical Neural Network	88.1%
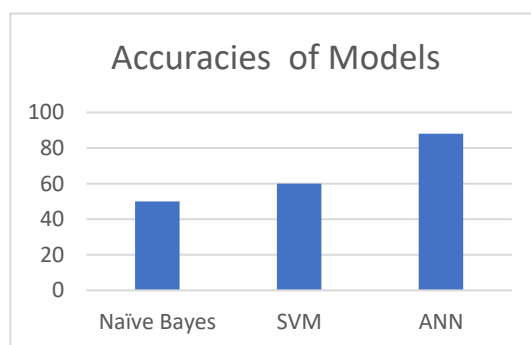
Table 5.4 : Accuracies of Models.

Fig5.5 : Accuracies of Models

6. Conclusion and Future Scope

Sentence-level sentiment mining involves the removal of common alternatives and evaluation words from the input dataset. A Student Feedback Mining System has been developed to investigate various topics and their associated sentiments based on student-generated feedback. This approach has the potential to enhance student experiences and improve teaching methods. Automating student feedback offers numerous benefits, including cost savings, time efficiency, and streamlined report generation.

The use of opinion mining aids in effectively summarizing feedback reports and evaluating school performance. This summarized view can be highly beneficial for educational institutions. Opinion mining is the process of extracting insights to assess students' opinions on various subjects. In this study, opinion mining was conducted

on student comments obtained from reviews using machine learning algorithms implemented in Python. Several opinion mining systems were reviewed, and the results indicate that the engineered Neural Networks algorithm outperformed others in terms of accuracy.

In future assessments, there are plans to conduct comprehensive opinion mining on student feedback collected from social media platforms. Additionally, the study aims to explore how student sentiment varies based on demographics such as age and gender. Efforts will be made to enhance the efficiency of the opinion mining system. A cost-effective opinion mining process will be developed, and its results will be analyzed with respect to different parameters. The goal is to create a system that benefits organizations by evaluating our framework and can be extended to various areas, such as gathering inputs for workshops and short-term courses within the educational sector.

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Maximizing Efficiency and Sustainability in Concrete Building Frames through Multi-Objective Simulated Annealing

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Abstract

In the construction business, concrete building frames are a standard structural system. It is essential to optimize their design to achieve structural efficacy, cost-effectiveness, and environmental sustainability. To improve the performance of concrete building frames, this study investigates the use of Multi-objective Simulated Annealing (MOSA), a potent optimization approach. The paper thoroughly analyses MOSA, its integration with concrete frame design, and its potential advantages in getting the best results while juggling competing goals. The multiobjective optimization of reinforced concrete framed structures, which are often utilized in building construction, is the topic of this research. It demonstrates the effectiveness of a multiobjective simulated annealing (MOSA) technique used to solve two objective functions related to the financial cost of the frames and the number of bars in the reinforcement arrangement. Since bar structures with fewer bars are simpler to create, the latter aim is significant regarding the frame's constructability. The IS-456 for Structural Concrete is followed in the evaluation of solutions. Using an internal matrix technique, stress resultants and envelopes of framed structures are calculated. The national codes for building structures are followed while determining design loads.

Keywords: Constructability, Multi-objective Simulated Annealing (MOSA), Optimization, Reinforced concrete framed structures.

1. Introduction

Artificial intelligence (AI) has been used in various fields, including optimizing complex problems since the 1950s. However, the design of cost-effective concrete structures still heavily relies on the expertise of structural professionals. The design of concrete structures involves selecting variables like material grades, cross-sectional dimensions, and reinforcement, which could benefit from AI. Currently, most design processes adhere to established norms for these variables. After defining the structure, stress analysis and reinforcement calculations are performed to meet safety standards. If the initial choices are insufficient, adjustments are made through trial and error, emphasizing the role of the structural designer's experience in ensuring both safety and cost-effectiveness in construction.

Structural optimization methods can be broadly categorized into two groups: exact methods and heuristic methods. The traditional approach, exact methods, relies on iterative techniques of linear programming to compute optimal solutions [1,2]. The second major group, heuristic methods, has evolved in recent times with the advancement of artificial intelligence procedures. This category encompasses various search algorithms [3-6], such as genetic algorithms, simulated annealing, threshold accepting, tabu search, ant colonies, and more. These methods have demonstrated success in diverse fields beyond structural engineering [7]. Despite their simplicity, they demand significant computational resources due to the numerous iterations involved in evaluating the objective function and checking structural constraints.

In the early stages of heuristic optimization applied to structures, notable contributions include the work of Jenkins [8-9] and Rajeev and Krishnamoorthy [10] in 1991-1992. Both authors utilized genetic algorithms to optimize the weight of steel structures. Concerning reinforced concrete (RC) structures, early applications from 1997 include the research by Coello et al [11], who employed genetic algorithms for the economic optimization of RC beams. More recently, there has been a growing body of work on RC applications [12-15], focusing on the optimization of RC beams and building frames using genetic algorithms. Furthermore, our research group has applied simulated annealing and threshold acceptance in recent studies to optimize various structural elements, including walls, portal and box road frames, and building framed structures [16-18].

This study focuses on building frames, which are typically integral components of buildings' structural systems. Building frames consist of horizontal beams with spans ranging from 5.00 to 12.00 meters, supporting the vertical loads from the floors and transferring them to vertical columns with heights between 3.00 to 6.00 meters. While they are designed to handle moderate horizontal loads, higher levels of horizontal loading are usually redirected to adjacent shear walls. Building frames are meticulously engineered to withstand the loads specified in building codes and must meet all the required limit states for reinforced concrete (RC) structures.

The approach employed in this research begins with the development of a computational module for evaluation, where variables such as dimensions, materials, and steel reinforcement are considered. This module calculates

both the cost and the quantity of longitudinal bars for a given solution, while also verifying compliance with all relevant limit states. Subsequently, the method utilizes Multiobjective Simulated Annealing, abbreviated as MOSA, to explore the solution space. The goal is to identify the Pareto set of combinations pertaining to the two primary objectives: the economic cost of the structure and the number of longitudinal bars. The latter objective is of particular significance, as structures with fewer longitudinal bars are easier to construct.

2.   Technique for proposed multiobjective optimisation

The structural concrete multiobjective optimization problem addressed in this study involves two primary objectives. Firstly, it aims to minimize the cost function, denoted as f1 in equation (1). Additionally, it seeks to minimize function f2 in equation (2), which quantifies the number of longitudinal bars used in the structure. Feasible solutions are those that adhere to the constraints specified in equation (3).

$$f_1(x_1, x_2, ... x_n) = \sum p_i \cdot m_i(x_1, x_2, ..., x_n) \qquad (1)$$
$$i = 1, r$$

$$f_2(x_1, x_2, ... x_n) = \sum b_i(x_1, x_2, ..., x_n) \qquad (2)$$
$$i = 1, s$$

$$g_j(x_1, x_2, ...n) \leq 0 \qquad (3)$$

Note that the objective function in expression (1) is the sum of unit prizes multiplied by the measurements of construction units (concrete, steel, formwork, etc). And that the restrictions in expression (3) are all the service and ultimate limit states that the structure has to satisfy. Unitprices considered for the frames below are given in Table 1.

Table 1 *Unit prices considered for RC framed structures (DSR Volume 1, 2021)*

Unit	Description	Cost (INR)
Kg.	Steel B-400	49
m^3	Concrete HA-25	7783.65
m^2	Formwork in beams	804.25

2.1 Multiobjective simulated annealing

The flowchart depicting the multiobjective simulated annealing algorithm proposed in this study is illustrated in Figure 1. This algorithm's fundamental concepts were initially introduced by Suppapitnarm et al. in 2000 [23], often referred to in the literature as the SMOSA algorithm. For a comprehensive examination of alternative MOSA algorithms, please refer to other sources [24]. Here is a summary of the steps followed by the algorithm:

1. It begins with the generation of a random feasible solution.
2. Initial temperatures are assigned to the two objective functions: the structure's cost and the number of bars, following Medina's method, as explained earlier for the single-objective simulated annealing.
3. After adjusting the initial temperatures, a small random adjustment is made to the variable values, resulting in a new working solution.
4. This working solution is assessed against the Pareto condition, which is met when the solution is not dominated by any previous element in the Pareto set of solutions.
5. If it satisfies the Pareto condition and passes the structural constraints check, the current solution is updated and added to the Pareto list.
6. If the solution does not meet the Pareto condition, the algorithm checks the SMOSA acceptance criterion. This criterion is met when either the cost and the number of bars are lower than in the previous solution or when the square root of the factorial of exp(-Δfi/Ti) is greater than a random number between 0 and 1. In the latter case, the Pareto set is not improved, but the working solution becomes the starting point for the next iteration.
7. The temperatures for the two objective functions are gradually reduced after a certain number of iterations referred to as Markov chains.
8. Periodically, the algorithm restarts from one of the extreme solutions in the Pareto set, with this selection also being made randomly.
   It's worth noting that the algorithm outlined in Figure 1 shares a key characteristic with the original SMOSA algorithm, as it only accepts feasible solutions.
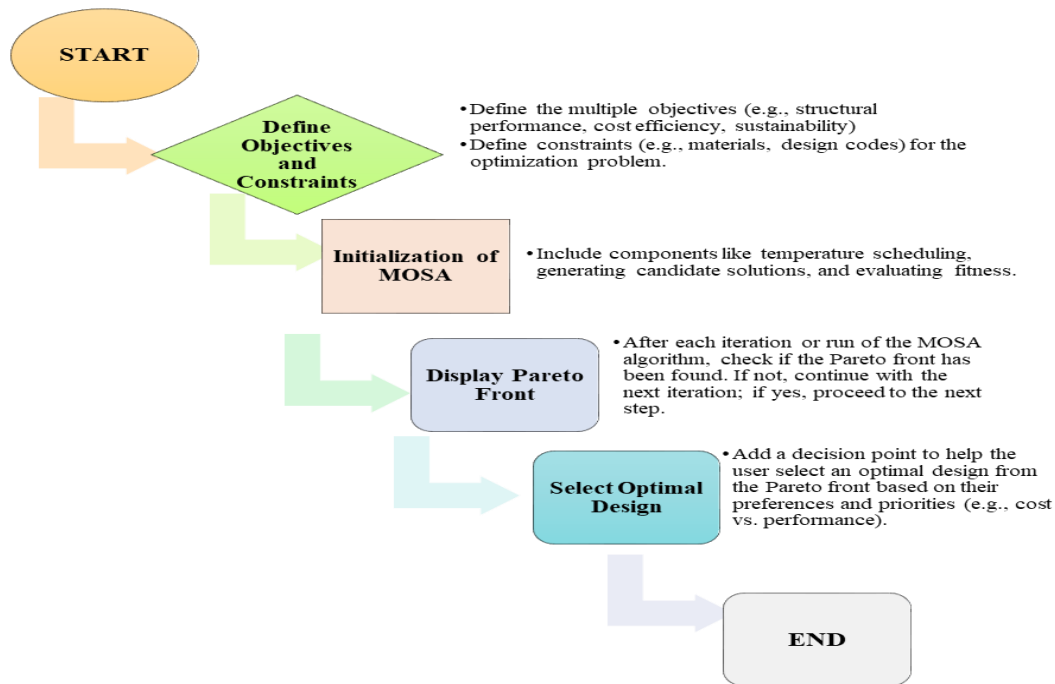
Fig. 1 *Flow-chart of the proposed MOSA procedure*

3. Building frameworks for RC buildings using MOSA

The study focuses on reinforced concrete (RC) frames used in building construction, specifically a symmetrical frame with 2 bays and 4 floors, involving a total of 81 distinct design variables. These variables cover aspects like the choice of reinforcing steel, concrete types for columns and beams (with strength variations from 25 MPa to 50 MPa in 5 MPa increments), cross-sectional dimensions of columns and beams, and configurations of reinforcement steel.

For the beams, they follow a standard longitudinal reinforcement pattern, including top and bottom bars along with additional positive and negative reinforcements of fixed lengths. Beam stirrups are divided into left, central, and right zones for transverse reinforcement. Columns offer 330 potential values for longitudinal reinforcement, ranging from 4Φ12 to 34Φ25, along with 21 possible values for transverse reinforcement.

It's essential to highlight the substantial number of variables needed to model such structures, with 81 design variables for the smaller RC frame in Figure 2 as mentioned earlier. Furthermore, considering a more typical frame with 4 bays and 8 floors would result in 377 design variables. This significant increase in variables presents
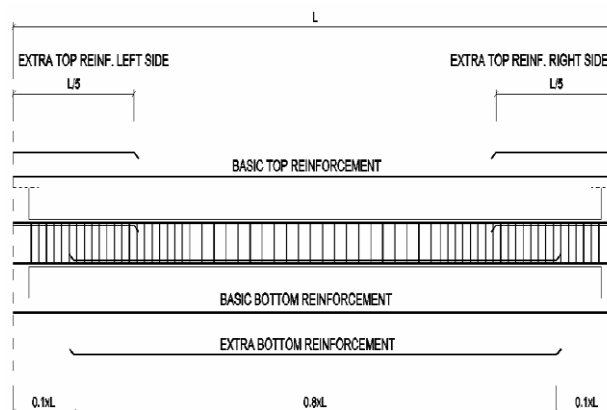
notable challenges for future developments, particularly when considering computational runtime, as indicated below for the example involving 81 variables.
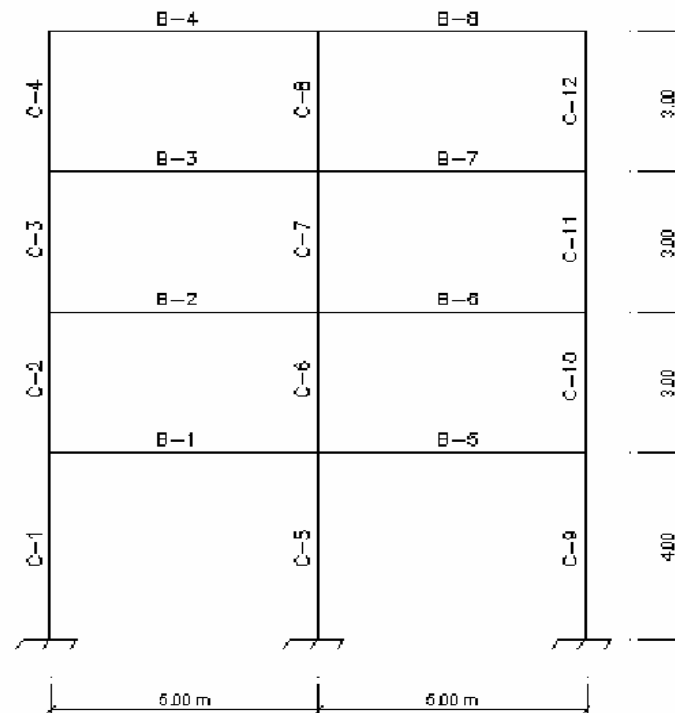
Fig. 2 *Typical RC building frame of 2 bays and 4 floors*

This analysis focuses on several key parameters, including the horizontal bay spans, column heights, vertical and horizontal loads, and safety coefficients. The structural constraints adhere to established Indian standards for this type of structure, encompassing checks for serviceability and ultimate limit states related to flexure, shear, and instability due to vertical and horizontal loads. The vertical loads consist of a uniform distributed load totalling 35 kN/m, comprising 7.00 kN/m2 for self-weight and live load, with a 5.00 m spacing between parallel frames. Wind loads contribute a uniform distributed load of 4.5 kN/m. Stress resultants and reactions are calculated using an internal matrix method program that employs a 2-D mesh. Deflections are restricted to 1/250 of the horizontal span for the total load and 1/400 for active deflection, which is measured after construction and can be influenced by vertical displacements. The prices considered for this analysis are detailed in Table 1.

Fig. 3 *Typical longitudinal reinforcement bars of the beams of RC building frames*

The MOSA algorithm was implemented in Visual Basic 6.0, with typical runs for the RC frame with 2 bays and 4 floors in Figure 3 taking up to 10.9 hours on a Pentium IV computer with a 3.20 GHz processor. The recommended calibration parameters for the MOSA algorithm include Markov chains or cycles of 70,000 iterations and a cooling coefficient of 0.80. The most effective strategy involved random variations in 3 or up to 3 variables out of the 81 variables in the problem.

Figure 4 illustrates the progression of the Pareto set at various iteration counts: 50,000, 500,000, 1,500,000, and 2,150,000. Additionally, Figure 5 and Table 2 provide detailed results for the solution with the fewest number of bars for the RC frame with 2 bays and 4 floors. The steel reinforcement used has a characteristic strength of 500 MPa. Columns are constructed with C35, C25, C40, and C30 concrete for the first to fourth floors, while beams use C30 concrete for all four floors, except the second floor, which employs C40 concrete.

The cost of this MOSA solution is INR 330045.54, compared to the most cost-effective solution at INR 314959.75 (a 4.8% cost increase). In terms of the number of bars, the solution with fewer bars has 84, while the most cost-effective solution has 97 bars (a 15.5% increase in the number of bars). Importantly, the cost increase is justified by the improvement in the constructability of the structure.

Table 2 *Beam results of the MOSA solution with a lower number of bars*

Member No. & Position		Width (mm)	Depth (mm)	Ast Required (mm2)	Total Area (mm2)	Top Bar Combination	Cost (Rs)	Embodied Carbon (kg Co2)
2	Node1	285	350	334.8806	340	12-1 12-2		
2	Center	285	350	-415.107	418	10-1 12-3		
2	Node2	285	350	693.5891	698	10-2 12-2 20-1	8040.12	114.64
4	Center	250	330	-553.1433388	604	16-1 16-2		
4	Node1	250	330	319.5857242	340	12-1 12-2		
4	Node2	250	330	241.1771626	271	10-2 12-1	7575.46	86.54
5	Center	255	360	-450.3872846	472	10-2 20-1		
5	Node1	255	360	457.3703539	472	10-2 20-1		
5	Node2	255	360	374.8431902	428	12-2 16-1	7226.23	95.26
7	Node1	250	320	375.46	392	10-1 12-2		
7	Center	250	320	-456.236	475	10-2 12-2		
7	Node2	250	320	510.68	517.26	10-2 12-2 16-1	47240.308	81.42
9	Center	300	400	-316.7599479	340	12-1 12-2		
9	Node1	300	400	879.1267251	893	16-2 25-1		
9	Node2	300	400	370.131772	428	12-2 16-1	8234.16	116.45
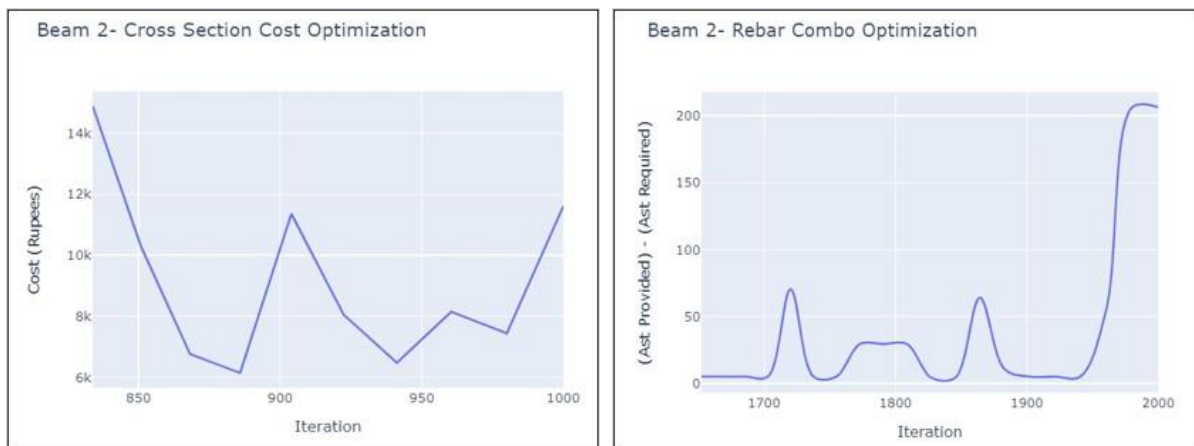
Fig. 4 *Optimization Trend over the iteration for beam element*

4. Conclusion

In summary, this study focuses on optimizing concrete building frame, a vital element in the construction industry, with a primary aim of enhancing structural efficiency, cost-effectiveness, and environmental sustainability. The research investigates the application of Multi-objective Simulated Annealing (MOSA) for achieving these objectives and provides an in-depth analysis of its integration into concrete frame design. The study centres on multiobjective optimization for reinforced concrete framed structures commonly used in construction, demonstrating the effectiveness of MOSA in addressing financial cost and reducing the number of bars in the

reinforcement arrangement to simplify constructability. Adherence to structural standards and codes ensures rigour in the evaluation process. Overall, this research emphasizes the significance of optimizing concrete building frames and underscores MOSA's potential as a valuable tool for achieving cost-effective and constructible designs while meeting essential structural criteria, contributing to more sustainable and efficient construction practices. Based on the findings presented above, several key conclusions can be drawn:

- The investigation of RC building framed structures highlights the promising potential of the MOSA algorithm for effectively optimizing such structures with multiple objectives.

- The results provide an illustrative case in which a relatively modest cost increase of 4.8% is associated with a significant 15.5% reduction in the number of bars. This suggests that it is possible to design structures that are more constructible while incurring cost increases that remain practical and acceptable in real-world construction scenarios.

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From Nature to Drug Discovery: The Indole Scaffold as a 'Privileged Structure' for breast Cancer

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Abstract
Breast cancer is still the leading cause of cancer deaths among women worldwide. According to the Global Cancer Observatory (GLOBOCAN) reports, there were more than 19 million cancer cases worldwide for the year 2020[1]. India ranked third after China and the United States of America. According to GLOBOCAN prediction the cancer cases in India would increase to approximately more than 2 million, that is, increase of more than 57 per cent in 2040 from 2020[2]. For treatment of breast cancer new therapies and drugs are continuously being conceived and explored. Recent results from literature search have suggested the benefits of indole based compounds for the prevention of many types of cancer, including breast cancer. Among the most efficacious drugs for treatment of breast cancer are indole based therapeutics such as structurally complex antimitotic vinca alkaloids, and the synthetic receptor tyrosine kinase inhibitor sunitinib. Indole based molecules show their anti-breast cancer activity through various mechanistic pathway (**Fig. 1**). This review will ellaborate an insight into the latest developments in the field of indole based drugs against breast cancers with a special emphasis onindole containing natural products, semi-synthetic and synthetic molecules and their targets and modes of action.

1. Introduction

Indole scaffold and its Biological importance
Indole (**1**) is a privileged naturally occurring heterocyclic nucleus in which pyrrole a five membered N-heterocyclic ring which is fused with a six membered benzene ring it means it is a benzopyrrole compound (**Fig. 2**).

It is an aromatic compound gives electrophilic substitution reactions from molecular orbital approach it was established that pyrrole nucleus of indole is more reactive than benzene nucleus. From studies it was confirmed that 3-position of indole is more susceptible than 2-position. Sincethe hydrogen on nitrogen is acidic, therefore, N-substitution can also be possible under basic condition [3]. Due to its great biological importance in both the biological and pharmacological fields, a number of synthetic routes were developed among them, some notable ones are Fisher, Bischler, Hemetsberger, Nenitzescu, Bartoli indole synthesis, and others [4]

Due to its significant bioavailability and pharmacological applications, indole core is considered the most privileged scaffold in heterocyclic chemistry with a numerous biological applications such as antiviral, antimicrobial, anti-inflammatory, anti-cancer, anti-hypertensive, anti-diabetic, and antioxidant [5-7]. . Among various activities indole based molecules show significant anticancer activity. Indole based scaffolds show anticancer activity through various mechanisticpathways [8] (**Fig. 1**).
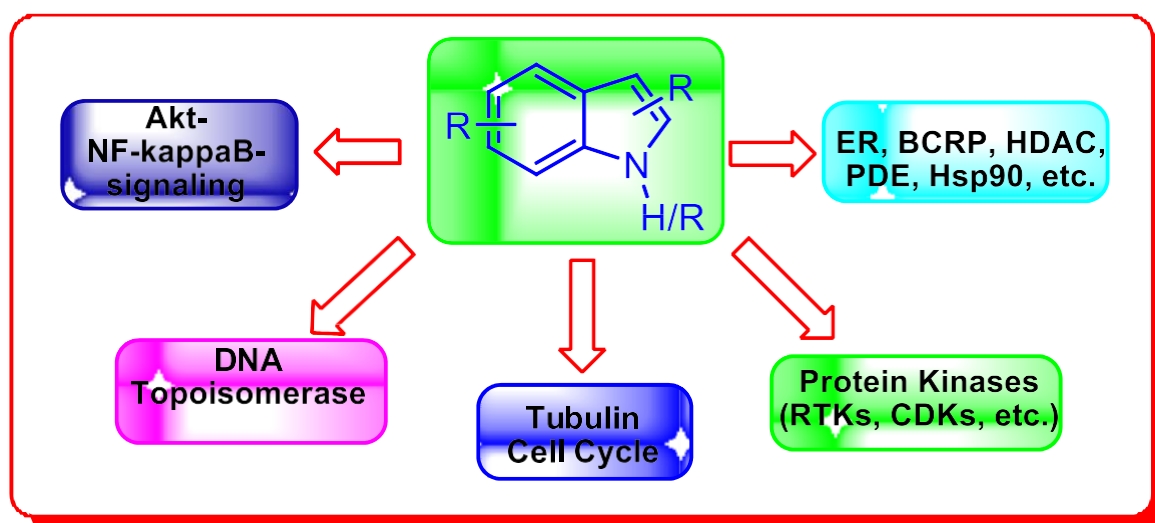
Fig. 1: Different mechanistic pathways followed by indole scaffolds for anti-breast cancer activity

Natural Abundance of Indoles

Indole alkaloids are widely occurring in various natural sources, more than 4100 compounds are known. Most of these alkaloids show various biological activities, some of them exhibit excellent antitumor, antibacterial, antiviral, antifungal, and antiplasmodial activities. Indole based a number of alkaloids were isolated and tested against various biological activities. Isolated compounds showed promising activity against various types of cancers [9].

Indole ring containing naturally occurring molecules, such as glucobrassicin (**2**) and indole-3- carbinol (**3**), are commonly found in cruciferous vegetables like cabbage, broccoli, and sprouts [10]. Indole-3-carbinol showed its anticancer activity by inducing apoptosis in cancer cells [10]. Indole core containing an essential amino acid Tryptophan (**4**) is found in many natural resourcesis a biosynthetic precursor of serotonin (**5**) (Fig. 2), an important neurotransmitter [11, 12]. Indole based auxin (**6**) (indole-3-acetic acid), a plant hormone showns biological activity against liver disease [13].
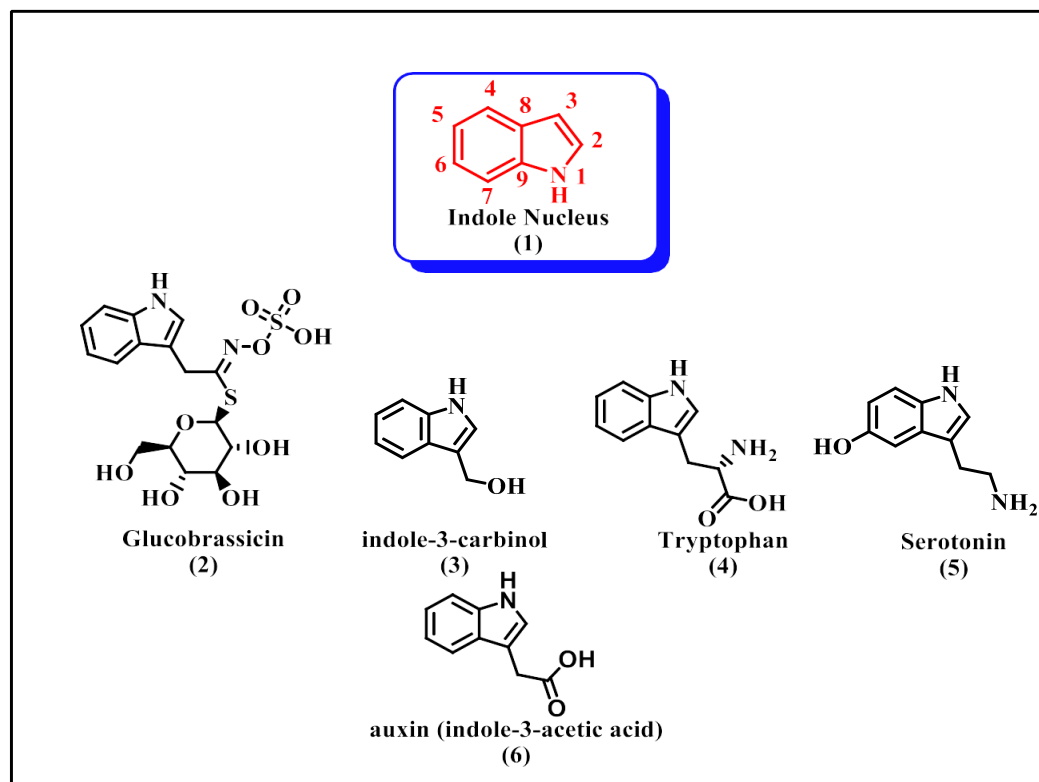
Fig. 2: Structures of indole and some naturally occurring indole nucleus containing molecules

2.   Indole Based Drugs

A number of indole class drugs are available in the market for the cure of different types of diseases. Some of them show excellent anticancer properties (Fig. 3). Mitomycin (**7**) is an indole class drug used in the treatment of anal carcinoma, bladder carcinoma, breast carcinoma, head and neck malignancies, and some other gastrointestinal carcinomas.

Sunitinib (**8**), an indole class anti-cancer drug[14]**,** which is a multi-targeted receptor tyrosine kinase (RTK) inhibitor approved by the FDA for the treatment of renal cell carcinoma (RCC) and imatinib-resistant gastrointestinal stromal tumor.

Vincristine (9) and Vinblastine (**10**) are vinca alkaloid isolated from Catharanthus roseus and are used as a chemotherapy drugs for the treatment of leukaemia, lymphoma, myeloma, breast cancer and head and neck cancer. They act as inhibitors during the metaphase of the cell cycle and by binding to the microtubules inhibit the development of the mitotic spindle [15]. Moreover, bisindole alkaloids such as dragmacidin (**11**), nortopsentin D (**12**), topsentin (**13**), exhibited cytotoxic activity against different cancer cell lines [16].
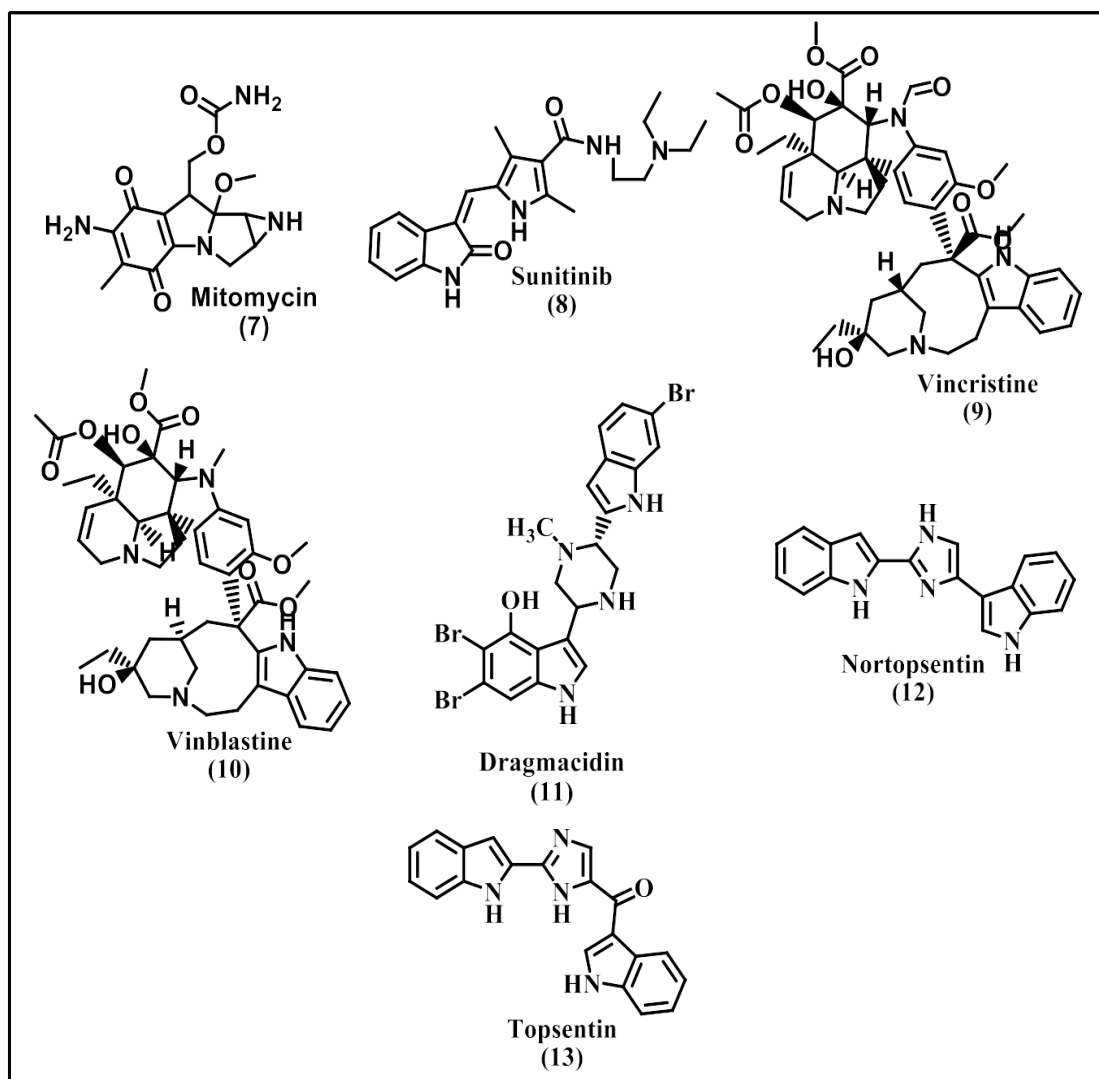
Fig. 3: Structures of indole scaffold containing naturally occurring anticancer moleculesIndole Based Estrogen receptor modulators

Modulation of estrogen receptor (ER) is possible by variety of compounds starting from small molecules such as diarylmethanes (**14**), β-naphthol (**15**) to structurally bulky molecules such as 17β-estradiol (**16**) etc. [17]. Diversified class of compounds such as stilbenes, napthalenes, benzothiophenes, indoles and benzopyrans (all are non-steroidal) and steroidal molecules such asestradiol, testosterone etc, have been studied for their estrogen receptor modulating activity in terms of estrogen agonistic/antagonistic action and other related estrogen related disorders [17- 20].

Among others, the potential of indole derivatives as ER ligands could be realized in early 1960s with significant antifertility activity of 2,3-diarylindoles originally investigated at CSIR-CDRI followed by Landquist and Mardesden group at United Kingdom [21, 22].

In 1970, the basic ether derivatives of indole were reinvestigated for their antifertility activity by Bell et.al at Sterling-Winthrop Research Institute Rensselaer, New York. Bell *et. al.* confirmed the possible linkage of antifertility activity of 2,3-diaryl indole derivatives with their antiestrogenic ativity. Further investigations on indole derivatives as possible estrogen and/ or antiestrogen remain dormant for a decade.

It was only in 1983, when Prof. Erwin von Angerer and Jelica Prekajac at Univerisity of Regensburg, Germany, who systematically studied 2-aryl-indole derivatives for their estrogen receptor modulating activity and established another dimension in the activity, profile of indole derivatives [23]. They found such substituted indole derivatives could be effective in the treatment of estrogen dependent mammary tumor. Further, the group of Prof. Erwin von Angererelaborated their research work on indole derivatives and by the end of year 1990, substituted indole derivatives were established as potential estrogen receptor modulators with significant antiestrogenic efficacy [24].

The early investigations by Prof. Erwin von Angerer led to the identification of 2-aryl-indole derivatives as estrogen antagonist for hormone dependent cancer cells. After structural refinement within a series of 2-aryl-indole derivatives, one of the compounds, Zindoxifene (**17**) could be identified as promising antiestrogen which could inhibit tumor progression with reduced estrogen agonistic activity [25, 26]. However, this molecule proved to be inactive as antitumor agent in phase II clinical trials. But the importance of 2-aryl-indole pharmacophore could not be ignored which is evident from the presence of 2-aryl-indole pharmacophore in clinically used drugs [27, 28]. During further structural modifications, it was assumed that deprotection of the two acetate groups present in the Zindoxifene (**17**) under *in vivo* system led tothe corresponding dihydroxycompound which is most likely to have more estrogen agonistic activity like diethylstilbestrol (**18**; DES) and therefore, would have stimulated prolactin synthesisin cells from the pituitary gland which subsequently initiated growth of MCF-7 cells [29, 30]. After careful structural modifications in 2-aryl-indole pharmacophore, it could be concluded that substitution of an alkylaminoalkyl side chain at nitrogen atom (N-atom, position 1) of 2-aryl-indole nucleus reduces estrogen agonistic activity and induces estrogen antagonistic activity in the molecule [31, 32]. This observation led to the identification of another 2-aryl-indole based potential estrogen antagonist, ZK119010 (**19**). ZK119010 is a potent estrogen antagonist in rats and mice models [33]. Further structural refinement of ZK119010 yielded two potential 2-aryl- indole based estrogen anagonists namely pipendoxifene (**20**; ERA 923) and Bazedoxifene (**21**; TSE 4247, Fig. 4) [34]. Pipendoxifene (**20**) is in advance stage of its use in treatment of hormonedependent breast cancer through inhibition of estrogen receptor-α (ER-α) mediated gene expression while Bazedoxifene (**21**) is very effective in conserving bone loss and reducing total cholesterol [35].

Presently, Bazedoxifene (**21**) is recognized as third generation SERM and its combination with conjugated estrogen has been approved by FDA for alleviation of estrogen induced postmenopausal complications and osteoposrsis. It is also approved for clinical use in several European and Asian countries for treatment and prevention post-menopausal osteoporosis [33- 35]. Although phase-III study of Bazedoxifene (**21**) revealed little or no risk of breast and endometrial cancer, like any other SERM, it possesses several adverse effects such as increased risk of any type of venous thromboembolic events (VTEs) including pulmonary embolism and retinal vein thrombosis [36, 37].
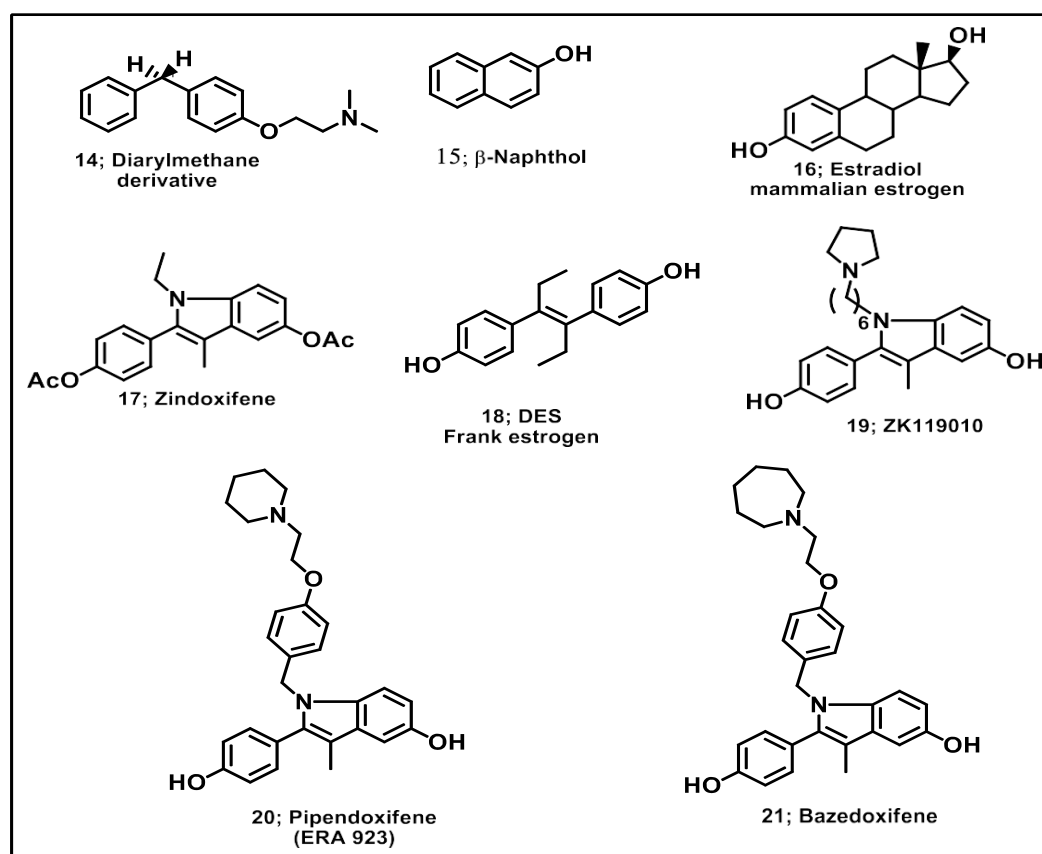
Fig. 4: Different estrogen receptor modulators.

Furthermore, it is reported that any modification at 7α position of estradiol (**16**) *via* a long aliphatic group leads to antiestrogenic compounds with high affinity for the estrogen receptor (ER). This was confirmed with the discovery of ICI 164,384 (**22**) and its fluorinated sulfoxide derivative fulvestrant (**23**; ICI 182,780) as a more potent ER antagonist (Figure 2) [38-42]. The above observations and proven biological potential of 2-aryl-indole pharmacophore prompted us to investigate some promising 2-aryl-indole based molecules which could effectively inhibit estrogen dependent cancer and osteoporosis.
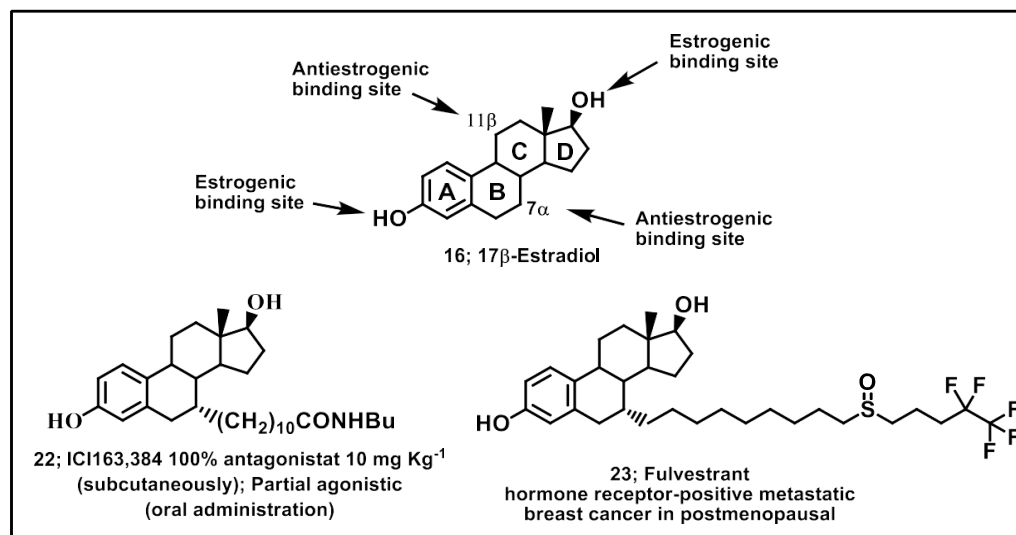
Figure 2: Structural correlation of estradiol with its alkyl derivatives ICI163,384 and fulvestrant.

3.   Conclusion

This review gives essence that Indole scaffolds as a privileged structure in the discovery of new and safer anticancer cytotoxic drug molecules from natural, semisynthetic and synthetic research.Very high numbers of natural and synthetic indole-based compounds have been discovered and analyse them for their anticancer property and thus to develop new potential anticancer agents. Biological studies of indole based molecules revealed that these compounds act via diverse targets in cancer cells. Target-based drug design of new indole derivatives and SAR studies led to the discovery of new anticancer agents. Furthermore, considering this review, there is a need of the search for potent and selective anticancer indoles is required that can be done by searching new natural indole based compoundsand by their structural modification, or by molecular modification of the functional groups of lead compounds targeting a specific target or pathway in cancer cells. Since, there is lot of scope in structural modulation in indole scaffold. Thus there is a great possibility of generating new indole based anticancer agents which can target different pathways in cancer cells this can leads to the discovery of new lead compounds with better potency with safety in the field of cancer chemotherapy.

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A Comprehensive Study on Just-In Time Systems

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ABSTRACT
New technologies are reshaping global markets, emphasizing skilled human resources over heavy machinery. Fast communication and globalized manufacturing demand high-quality, flexible production with shorter delivery times. Just-in-Time (JIT) systems aim to eliminate waste and boost efficiency. JIT purchasing fosters cooperative, long-term buyer-supplier relationships, reducing inventory and enhancing productivity. This philosophy is accepted worldwide, emphasizing lean production and resource efficiency. JIT simplifies manufacturing, detects problems swiftly, and encourages employee involvement. It includes techniques like group layouts, Kanban, and flexible workforces, aiming to eliminate waste and improve manufacturing continually

Keywords: Kanban,JIT,Lean, Automation

1. Introduction

The emergence of new technologies is transforming global markets, placing developing countries on a path to embrace this industrial revolution. Unlike past waves, this revolution relies on skilled labor over heavy machinery, prioritizing system configuration and adaptability. Modern technology, coupled with fast communication and global transportation, has made manufacturing a global endeavor, demanding high-quality products with shorter delivery times. Rising labor costs add pressure to maintain reasonable product costs.

In response, Just-in-Time (JIT) systems have gained prominence as a strategy for modern manufacturing. JIT eliminates waste and maximizes worker efficiency, fostering cooperative buyer-supplier relationships. This approach reduces inventory and boosts productivity, benefiting both parties.JIT is widely accepted in various countries, emphasizing lean production and resource efficiency. It simplifies manufacturing, swiftly detects and solves problems, and encourages employee involvement. JIT encompasses techniques such as group technology layout, Kanban applications, and flexible workforces, aiming to eliminate waste and improve manufacturing continually.

JIT offers significant benefits, including improved relations with suppliers and customers, faster response to changes, enhanced competitiveness, increased worker efficiency and motivation, administrative efficiency, inventory turnover, profit margins, teamwork, reduced production lead times, labor requirements, and work-in-process inventory.However, JIT implementation necessitates organizational and physical changes, including cultural transitions. Sustainable JIT success hinges on organizational transition and commitment, requiring a well-planned approach integrated into the company's overall business strategy.

2. Enabling JIT to Occur

Many practices, some of which were traditionally present in Japanese Operations Management, enabled JIT to occur. These are briefly discussed below: House Keeping: A set of principles was always used in Japanese companies for good housekeeping. One such practice is the use of 4S's – Seiri (orderliness), Seiton (tidiness), Seiso (clarity), and Seiketsu (cleanliness). Problem Solving: Widespread training was given in problem solving skills to the workforce.They were encouraged to identify the root cause and find immediate solutions to the problems. Often, problem solving was forced through deliberate removal of buffers. Quality circles or similar type of small group activity were the main instrument used for this purpose. Waste Reduction: A typical practice used was the 3M practice – muri (unreasonableness), mura (unevenness), and muda (waste). The emphasis was on removal of all sorts of waste such as inventory, excess movement, defects, unnecessary activities like inspection, etc. Examples are: use of 'Andon' light boards signaling trouble spots, use of standard containers with special inserts to enable quick counting of quantities and display of daily operating achievement on TV screens. Total Preventive Maintenance: Routine maintenance was moved to the operator and the role of maintenance function was that of planning maintenance, major repairs, debugging new machines and training operators. Statistical Process Control: The Japanese companies have emphasized quality for a long time. Quality

management was key to making JIT possible. Statistical process control was an important practice of quality management. Autonomation helped in automatic defect control. Poor quality in production or in parts made realization of JIT difficult. People Involvement: This was a JIT prerequisite. It was achieved through team work, education (particularly of supervisors and operators), flexibility in work practices and skills, simple payment schemes, appropriate skill training, appointment to management positions people who understood production. Design: Design for manufacture reduced uncertainty in manufacture. Modular design enabled large variety of finished items to be produced, while maintaining simplicity of manufacture. Process and Equipment: This was not always built on autonomation, but was flexible enough. Management Control: Management targets were set, directly related to the objectives of JIT and long term control against these targets. Typical control measures included number of machine breakdowns per month, stock levels and quality achievement. Others: The Japanese management emphasized great attention to detail, at all stages . Continuous simplification and improvement was sought to achieve "flow". High level of technical support and excellent production engineering were the hallmark of the Japanese Operations Management System. Even though Toyota pioneered the Kanban System, extensive use of Kanban was confined to a few Japanese companies. Similarly, 'single source purchasing' was not widely practiced, and dual sourcing (ex: 50 : 50 or 70 : 30 split of orders) was quite prevalent. Single source purchasing was more limited to items requiring major tooling or where joint development effort was needed

3. Statement

New technologies are reshaping global markets, emphasizing skilled labor and adaptable systems. Just-in-Time (JIT) systems are vital for modern manufacturing, reducing waste, fostering cooperation, and enhancing productivity. JIT's global acceptance emphasizes lean production and employee involvement, delivering benefits like improved relations, competitiveness, and cost efficiency. Successful JIT implementation requires organizational commitment and integration within the overall business strategy .

4. Objective

JIT (Just-in-Time) objectives include reducing setup times, achieving zero defects, continuous improvement, involving workers, optimizing equipment layouts, reducing inventories and waste, problem-solving through employee involvement, eliminating non-value adding activities, and cross-training workers. JIT companies often use manufacturing cells with U-shaped layouts to enhance worker interactions. JIT adoption is widespread, with over 70% of US auto industry suppliers implementing JIT. It's a key factor in Japan's industrial success, and Indian companies like Maruti and Tisco have improved product quality through JIT systems.

5. Advantages of JIT

☐ Lower stock holding means a reduction in storage space which saves rent and insurance costs ☐ As stock is only obtained when it is needed, less working capital is tied up in stock ☐ There is less likelihood of stock perishing, becoming obsolete or out of date ☐ Avoids the build-up of unsold finished product that can occur with sudden changes in demand ☐ Less time is spent on checking and re-working the product of others as the emphasis is on getting the work right first time

6. Disadvantages of JIT

☐ There is little room for mistakes as minimal stock is kept for re-working faulty product ☐ Production is very reliant on suppliers and if stock is not delivered on time, the whole production schedule can be delayed ☐ There is no spare finished product available to meet unexpected orders, because all product is made to meet actual orders – however, JIT is a very responsive method of production : TPS was being implemented across nation after the oil crisis in fall of 1973. This mean, JIT was also adopted by other automotive manufacturers as well as electronic manufactures in Japan. Moreover, Japanese manufacturing firm is to be told having the best globally manufacturers reputation for superior quality and growth in productivity by implementing JIT system. As JIT approach are simple and able to control inventories, US industries were pleased to use and implement JIT method in order to catching up with Japanese fast rising industries. Since then, JIT is being implemented globally. According to TPS, JIT means that; in a flow process, the right parts needed in assembly reach the assembly line at the time they are needed and the amount needed. But, as JIT has been spread globally the word JIT have been interpreted in various definitions as it being introduce outside Japan. Some claimed JIT as a manufacturing philosophy that utilize all value added sources and activities as well as seeks and eliminate waste efficiently. JIT also is defined with the emphasizing of continuous improvement in adapting organization. Most importantly, JIT is a pull system, where successful companies that implement JIT will strikes two major objectives, which are improving in quality of product produced with the ability of controlling production time and delivery to customer. Above all, the definition of JIT can be simplified for better understanding. JIT can be defines as a manufacturing philosophy that makes and delivers just what is needed, just when is needed, and just amount needed. In the past different authors have tended to view JIT in different ways but today they are converging to a common perception

of JIT. The various definitions and statements of JIT, defined and updated by many authors/ researchers have been given below. Ansari: "JIT is not just a series of techniques rather it is a manufacturing philosophy which requires the support commitment and participation of human resources at all levels of organization." Garg et al: "JIT is a philosophy that defines the way the work should be done. IT is concerned with creating the right environment for effective operation. They further stated the JIT is best defined as an approach to achieve excellence in a manufacturing company." Baker: "Just in time system is an approach for providing smoother production flows and making continuous improvements in processes and products." Bilesbach: "JIT can be defined as an organizational philosophy, which utilizes employees to identify and resolve problems and inefficiencies in the workplace." Hall: "JIT is not confined to a set of techniques for improving production defined in the narrowest way as material conversion. It is a way to visualize the physical operations of the company from raw material to customer delivery." Gilbert: "JIT is a shop floor control technique that allows the scheduling the shop floor with the use of a kanban which is a material tracking device". Handerson: "JIT is described as hottest and most controversial subject facing manufacturers and distributors.

"JIT is described as a production of the smallest possible quantity at the earliest possible time using a minimum of resources, and elimination of waste in the manufacturing process". Miltenberg: "JIT is an approach where waste in the production process is systematically identified and removed to reduce cost and lead times and improve quality." Mazany: "JIT is a philosophy that extends throughout the entire organization, and one, which emphasizes a proactive approach to the management of operations." Moore: "JIT is a production system to produce the kind of units needed and the right time needed and the quantities needed." PremVirat et al: "JIT is indeed a complex highly integrated system of methods techniques and philosophies which must be understood in an holistic sense." Voss: "JIT is an approach which ensures that the right quantities are purchased and made at the right time and quality and that there is no waste" Voss and Robinson: "JIT is a production methodology which aims to improve overall productivity through the elimination of waste and which leads to improve quality." Schonberger: "JIT is a system to produce and deliver finished goods just in time to be sold, purchased materials just in time to be transformed into fabricated parts and subassemblies just in time assembled into finished goods." JIT can be summarized as a system to eliminate waste and achieve excellence in an entire organization. The sole purpose of JIT is to eliminate waste. Anything that does not add any value to the product is known as waste.

7. Review of Literature

JIT (Just-in-Time) originated in the Japanese shipbuilding industry, where it referred to receiving steel "just-in-time." This concept spread to other OEM companies, demanding timely deliveries from suppliers. Toyota Motor Company in Japan significantly developed and formalized JIT into the Toyota Production System (TPS) under Taiichi Ohno's leadership in the 1960s. The oil shock of the 1960s accelerated the development of manufacturing approaches. By the early 1970s, these methods gained attention in Japan and subsequently in the West. Initially called the Toyota Manufacturing System, it encompassed various elements, including pull scheduling using 'Kanbans.' Though initially known as the 'Kanban System' in the West, this term was somewhat misleading. JIT has been known by various names but is widely referred to as 'Just-in-Time management,' representing an overarching philosophy applied across different activities since the early 1980s.

8. Conclusion

Employee awareness of the JIT system is high, indicating a clear understanding of its adoption within the organization. However, there is a knowledge gap when it comes to the concepts of push and pull systems within JIT. Employees demonstrate a strong grasp of the kanban system and believe it to be highly effective. Their understanding of concepts such as Line stop, Quality problem, and Line running within the kanban system is notably clear. Employee participation in JIT is characterized by good relationships among coworkers and effective interaction with other departments. They view both workers and management as responsible for driving company improvement and display a willingness to work collaboratively as a team to achieve set goals.

Furthermore, employees recognize the significance of factors like Quality Consciousness, Six Sigma, and Continuous Improvement in achieving zero-defect products. They are eager to acquire new techniques and skills.The benefits of JIT implementation are extensive and widely acknowledged by employees. These benefits encompass skill diversification, substantial reductions in inventory accumulation, fewer rejected items, increased production efficiency, enhanced product quality, on-time delivery, and the promotion of teamwork within the organization.

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Narrative Accounts of Strategies Exciting Entrepreneurial Innovation

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Abstract

Entrepreneurial narratives are a credible and compelling way to connect individuals and ideas. They encourage intrapreneurs to embark on entrepreneurial challenges and activities by stimulating curiosity, purposeful action, and ownership. The research focuses on how entrepreneurial intention and actualization of capacity building for organizational change are impacted by entrepreneur role modeling tactics on transformational leadership. The report carefully examines the life stories, biographies, and YouTube interviews of 14 well-known business leaders. It explains their bold decisions for integrating personal identity into their model-thinking for organizational growth and change. The study breaks down stories into fundamental narrative units to clarify "how" and "what" motivates entrepreneurs' entrepreneurial goal and orientation. The narrative accounts reveal commonalities and contrasts in the methods used by certain entrepreneurs to foster entrepreneurial innovation. The article inspires intrapreneurs (inside entrepreneurs) to use their creativity, curiosity, and hands-on learning to innovate their organizations. It also teaches intrapreneurs (inside entrepreneurs) how to effectively interact at both the micro and macro levels for utilitarian benefit. The study considerably arouses interest in learning about the distinctive ways used by leaders to promote their businesses among budding entrepreneurs, visionaries, start-up owners, practitioners, idea builders, policymakers, academicians, and managers. It draws emphasis to how unique scenario planning is for successful outcomes.

Key Words: Entrepreneurial Intention, Transformational Leadership, Theory of Planned Behaviour, Narrative Analysis, Entrepreneurial Innovation

1.   Introduction

Entrepreneurial leaders role model strategies to build on entrepreneurial intention to produce genuine organizational transformations with internal capacities. They sense the conditions that can be created for active inspiration, information, and participation of inside entrepreneurs (intrapreneurs) within organizations through the internalization of the Theory of planned behavior. The paper envisions the potential of select successful intrapreneurs (turned entrepreneurs) within their narrative stories and within the social-cultural theoretical context to highlight the extent of their achievements (Mercer & Howe, 2012; Baruah & Ward, 2015). Lasting studies have discussed individual entrepreneurial failures, experiences, and disgrace endured in the process within the socio-cultural realm, wanting further research (Singh et al., 2015). This paper effectively points to the constructive, narrative research on the individual, sequential micro-processes (carefully considered planned behaviors) that positively impacted the creation of an individual entrepreneurial culture that led to their transformational entrepreneurial orientation and helped shaped individual entrepreneurial visions, values, and experiences beyond their social/psychological stratum.

2.   Literature Review

Entrepreneurial Intention

The Entrepreneur leader's vision opportunities create a learning culture to grow intrapreneurs (inside entrepreneurs) as change-makers within organizations (Kaputa, 2012; He et al., 2017). These intrapreneurs are either driven by the visionary thinking of owner entrepreneurs or their own learned expertise/self-drive to passionately pursue a unique idea or vision (Critten, 2016). A growth-oriented, learning culture intellectually stimulates vision aspirations and experimental capabilities to achieve model thinking for situational needs (Nowiński & Haddoud, 2019; Prieto et al., 2020)

Transformational Leadership

To develop or transform an organization, the entrepreneurial intrapreneurs need to jointly internalize the central identity of individuals towards entrepreneurial thinking. They need to channel capacity-building role

model strategies for young intrapreneur development and suitable action (Din et al., 2018). These strategies can improve focus, and dialogical interface to co-sense, presence and co-create for change advantage and innovation (Dust et al., 2014; Din et al., 2018).

Theory of Planned Behaviour
The theory of planned behavior can be understood through empowering entrepreneur success stories, directives, and themes for driving business process re-engineering, renewal, and positive change (Kaputa, 2012). The planned behavior is reflected in defining entrepreneur routine beliefs, principles, scenarios, and functional actions in organizational settings (Justice et al., 2020; Huang et al., 2021).

Entrepreneurial Innovation
All entrepreneurial endeavors are directed toward creating something unique and purposeful (Camelo-Ordaz et al., 2012). The intrapreneurs take inspiration, strategic directives, and support to broadcast visions for creating something imaginatively ingenuine for society. They encourage understanding of others' viewpoints, and develop a mutual orientation for finding similarities in perspectives (Boon et al., 2016; Staub et al., 2019). They help create transformative scenario planning consensus and collective, common ground of strategic action for a novel, incremental social benefit (Critten, 2016; Murray et al., 2021).

Narrative Analysis
Narrative analysis is a qualitative interpretation of data related to personal stories, personal experiences, and accounts of individuals and finding meaningful patterns in them (Randall & Harms, 2011). Narratives can mostly be extracted from auto-biographies, you-tube Ted interviews, documentaries, interactional interviews, recorded speeches, news channel interviews, business magazine interviews, Success Storylines, letters to the audience, transcripts of in-depth interviews, and other narrative qualitative input (Surya Prasad Adhikari, 2021). They tell about the progressive growth of personalities in communities (Hirvonen et al., 2021). They provide associated interpretations from textual analysis of experiences that are needed for prospective development (Kleres, 2011; Müller, 2012; Blom & Nygren, 2017; Buss, 2020).

3. Research Methodology

The researchers scanned and studied around 84 personal narratives (complete life stories), 28 you-tube video biographies, 42 interactional interviews of 14 visionary leaders, and their capacity-building strategic themes. The study split up their narratives into smaller sets of core narrative blocks and grouped them into capacity-building, and entrepreneurial direction codes. These narrative codes included (knowledge, experience, skill, talent, and integration). The narrative analysis captured the similarities/differences in their resounding leadership approaches. A nested narrative story structure of each narrative based on their persuasive capacity-building strategies, entrepreneurial directions, and achievements was developed. These core narratives provided unique insight into entrepreneurial leaders' exceptional routine practices(micro-processes) for encouraging inside entrepreneurs. Their strategies influenced problem-based learning, design thinking, scenario planning, and entrepreneurial direction for business turnarounds and creating an integrated whole (Refer to Table 2).

Demographic Facts of Entrepreneur Leaders
Some demographic fact variables of entrepreneurs were identified including early career, early original(innovation) idea, and planned behavior.

Table 1 Demographic Facts of Entrepreneur Leaders

Sr No	Entrepreneurial Leader	Education Pursued	Early Career	Early original Idea	Planned Behavior
1	Warren Buffet	Masters in Economics	Brokerage Firm	Stock Markets	Read Annual Reports
2	Andrew Carnegie	School	Telegraph Messenger	Investments	Resource Planning(Start to Finish Strategy)
3	Henry Ford	School	Apprentice Machinist	Transportation Cheap Cars for all	Assembly Line method for mass car production in reduced time
4	John Rockefeller	Book-Keeping	Book-keeper	Oil	Oil Production Process

5	Elon Musk	Bachelors in physics and economics	Engineer	Pay-pal(Online Money Transfer)	Reusable Space Rockets and Electronic Cars
6	Allan Mulally	Masters in Aeronautical and Astronautical Engineering	Engineer	Boeing Airplanes and Ford	Boeing Commercial Aircraft Models and Business Plan Review Process at Ford
7	Jeff Bezos	Electrical and Computer Science Engineering	Senior Vice President	Online Book Store	Online Retail Platform
8	Mark Zuckerberg	Psychology and Computer Science	Software Developer	Social Networking	People Networking Platform
9	Verghese Kurien	Master's in Mechanical Engineering	Office Apprentice	Milk Production	Dairy Operations Development
10	Dhirubhai Ambani	Only School Education	Clerk (Book-Keeping)	Spice Trading	Textile Manufacturing
11	Jamsetji Tata	Bachelors	Trader (Textiles)	Business Expansion	Empire of Tatas
12	Jehangir Ratanji Dadabhoy Tata	Grammar School	Army Soldier	Aviation	Commercial Airline
13	Narayan Moorthy	Masters in Technical Engineering	Chief System Programmer	Software Company	Software Company
14	Indra Nooyi	Master's Public and Private Management	Product Manager	Direct Marketing	Strategic Growth Marketing

Source: Authors' Work

The demographic facts of entrepreneurial leaders assessed their education/non-education, early career, early original ideas, and planned behavior for expansion (Refer to Table 1). They revealed that most leaders pursued high qualifications while others could only go only up to early/high school and not beyond. They received early education-related career opportunities and dropouts that moved into building grandeur entrepreneurial visions with partnerships, original ideas, and planned behavior.

So, the above-selected entrepreneur leaders (13) males and (1) female (Indra Nooyi) were initially just intrapreneurs (inside entrepreneurs) with some bright unique innovative ideas before they took on the entrepreneurship intention to create something huge. Determination and grit allowed them to simply start up in personal garages with teamed role-modeling strategies toward the entrepreneurial vision.

4.   Entrepreneurial Leaders, Strategies, and Innovations

Entrepreneurial Leader	Role Modelling Strategies	Entrepreneurial Intention (Vision innovation)
Warren Buffet	*Always stick to better social behavior than one's own and drift in that direction.*	Large Shareholding Corporations (Anand, 2020)
Andrew Carnegie	*Great achievement always is the result of the coordination of minds working toward a definite end.*	Steel Manufacturing (Janowski, 2020)
Henry Ford	*Get the other person's outlook and angle as well as own.*	Revolutionizing Motorcar Making (Casey, 2015)
John Rockefeller	*Chart own course by figures only.*	Standardized Oil Development (Umoh, 2018).

Elon Musk	*For things to fail, innovate enough.*	Motors, Rockets ad Space Technological Designs (Dyer et al., 2022).
Allan Mulally	*Remember leadership is all about the people working along with you.*	Turnaround of Motorcar Making Business (Boothby et al., 2022)
Jeff Bezos	*Increase the number of experiments to increase innovativeness.*	Online, e-commercial Technological Platform. (Lakhutia, 2019)
Mark Zuckerberg	*Understand people constructively and not as a waste of time.*	Interactive social media platform (Haupt, 2021).
Verghese Kurien	*Identify the most talented person for a project assignment, articulate expectations, repose full trust and freedom of execution without interference, and the mission will be achieved.*	Fast-moving, Dairy Milk Cooperative (Patel, 2012)
Dhirubhai Ambani	*Build your dream or else someone else will hire you to help them build theirs.*	Large Businesses Ownership (Ramachandran, 2020)
Jamsetji Tata	*Serve the community with a meaning, lift the most talented for result-oriented service to the nation.*	Scientific, Research University; Metal Manufacturing Unit, a Hydro-power energy plant, Luxury Group of Hotels (Jogwar, 2019).
J.R.D(Jehangir Rataji Dadabhoy) Tata	*Always lead humans with utmost love, care, and tenderness.*	Multiple, Outstanding Engineering/ Technological Businesses(Nandi, 2017).
Narayan Moorthy	*Lead with trust, values, and example to raise the confidence of others.*	Information Consulting, Technological Giant (Kapur, 2020).
Indra Nooyi	*Everyone must maintain a positive, confident intent, then the complete perspective of evaluating a person or a situation will be different.*	Small Refreshment Deals (Hedayati, 2014)

Table 2 Entrepreneurial Leaders, Strategies, and Innovations
Source: Authors' Work

The role-modeling strategies/ innovations of leaders were motivational for encouraging team participation for entrepreneurial vision development (Refer to Table 2).

Narrative Analysis of Stories of Entrepreneurial Leaders

Warren Buffet:
Warren Buffet always emphasized that one should learn to choose business associates wisely to spot wise and talented people. He encouraged smart goals, hiring the right talents, and using basic networking skills for valuable investments (Otuteye & Siddiquee, 2019; Cunningham, 2019; Anand, 2020). He believed in the principle of equal participation and engagement of all. Warren Buffett's golden rule was to be transparent, communicative in routine interactions, and connect with solitary, independent working workers (Locke, 2019; Gupta, 2021).

Andrew Carnegie:
Andrew Carnegie always gave importance to coordination with different minds for a definite purpose and a definite plan. The ideal team is a "Master Mind Alliance" that works with intense discipline, drive, initiative, and effort to gather all facts and seeks new and better ways of working creatively. Carnegie encouraged teams to make imperfect decisions than none at all and not fear failure. Leaders should own mistakes and take responsible action for betterment (Harvey et al., 2011).

Henry Ford

Henry Ford believed in surrounding oneself with talented, like-minded people to push the limits of one's imagination. He recognized the importance of listening to others' perspectives, assessing of needs of all, and experimenting to build something of unique concern (Miller et al., 2010; Romero, 2017). He had a monomaniacal focus, mechanical intuition, and a secret mission to build car models for the community.

John Rockefeller

John Rockefeller believed in scheduling, planning, and charting his day with clockwork mechanical regularity and delegation of tasks, and business letter communication (Allison, 2012). He was farsighted and forthright in monitoring financial figures to interpret the progress of his organization (Bolanos, 2019). He routinely shared actual financial numbers in specialized team committees to take everyone's suggestive opinions to reach a compromising solution (Umoh, 2018).

Elon Musk

Elon Musk is the lead for Tesla and SpaceX. He believed in articulating exciting visions, gaining acceptance for bold ideas, attracting essential resources, relentless innovation, and moving beyond the status quo (Dyer, Furr and Hendron, 2019). He broadcasted the mission of "Technology First", communicated his goals worldwide to win maximum external advantage, identified the performance constraints with people, and eliminated them for creative, technological innovations (Muegge & Reid, 2019; Khan, 2021).

Allan Mulally:

Alan Mulally was the former CEO of Ford Motor Company. He used powerful, value-driven, communication phrases to encourage integrative thinking, oneness in teamwork, positive leadership, and a forward vision toward fundamental realities (Boothby et al., 2021). He as a keen, dialogical leader, applied a holistic, win-win mindset of people for bringing Ford out of billions of losses by thoughtfully assessing progressive results (Kaipa & Kriger, 2010; Goldsmith, 2017; Mulally & McArthur, 2022).

Jeff Bezos:

Jeff Bezos leads Amazon and Blue Origin and is futuristic in dialoguing for assessing and scanning the effect of the thought processes of humans (Lakhutia, 2019). He gave prime importance to the "customer first approach", identification of customer needs, experimentation, and small, step-by-step, incremental innovations. He adopts a reserved approach and does not broadcast goals till they are achieved. His teams test and drive innovations with a cautious, stable approach to achieve solid foundations (Dyer, Furr and Hendron, 2019).

Mark Zuckerberg:

Mark Zuckerberg the co-founder and CEO of Facebook has a clear vision. He values people's ideas, and encourages learning orientation; global openness, effective communication, and constructive feedback (Gabler, 2011; Walter, 2013; Serafeim, 2017). He advocates aggressive passion, purpose, product commitment/ownership, and right partnerships with employees for achievement orientation (Hoffmann et al., 2018)

Verghese Kurien

Verghese Kurien was the originator of the milk cooperative Amul. He valued people's concerns, advocated democratic action, integrity, high standards of performance, self-learning responsibilities, trusted people with ownership of tasks, and passion for excellence (Gupta, 2019). He helped and empowered villagers with a common vision and gave them guiding directions and opportunities for purposeful achievement (Patel, 2012).

Dhirubhai Ambani

Dhirubhai Ambani was the founder and chairman of Reliance Industries. He was a dynamic, courageous, futuristic, visionary leader who believed in gathering complete information for ground-breaking thinking for the beneficial progress of the self and the nation. He inspired people to think and act limitlessly, for achieving something unconventional and huge (Kothari, 2019). He encouraged people to participate in productive working relationships for the lucrative growth and social prosperity of the country.

Jamsetji Tata

Jamsetji Tata was the originator of the Tata Group. He believed in pursuing advantageous opportunities, developing attractive townships, and succeeding in his four dream projects. He was a detail-oriented, meticulous, influential leader inspiring change and transformation for universally accepted, cherished projects (Mohapatra & Verma, 2018). He inspired undeterred dedication in focus, and foresight for public welfare and the industrial revolution (Sivakumar, 2008). Jamsetji set higher standards of performance and value-driven direction for people to engage in high-value projects to achieve bigger success and challenges (Hansdah, 2018; Jogwar, 2019).

J.R.D(Jehangir Ratanji Dadabhoy) Tata

J.R.D(Jehangir Ratanji Dadabhoy) Tata was the foremost Chairman of the Tata Group. He believed in growing organizations with a visionary, benevolent approach and leading to new directions. He believed in building confidence, enthusiasm, and initiative in people to achieve best-in-class performance. With his daring, inspirational, ethical, and value leadership qualities he motivated many people with different human attributes to generate superior thinking, perfection, and excellence (Nandi, 2017; "Written By 'Jeh' | Tata group", 2022).

Narayan Murthy

Narayan Murthy is the Chief Founder and Chairman of Infosys, an IT Company in India. He believed in leading teams with respect and values and following exemplary role models for leadership development (Mohanty, 2021). He advocated a balanced and sensitive approach toward customer orientation. He encouraged his team members to practice differentiation in innovative action, be analytical, sharp-minded in taking tough courageous decisions in ambiguous situations (P.D., 2016). He gave importance to strategic thinking, cautious skill management, and timely initiatives for ultimate results (Prashar, 2013; Kapur, 2020; Rana, 2022).

Indra Nooyi

Indra Nooyi was the CEO of Pepsico a food and beverage company. She believed in growing people through 5C's Model – Communication, Confidence, Courage, Competency building, and Compass for constant self-improvement and continuous improvement of organizations. She gave importance to dialoguing, inquiring, negotiating deals, balancing goals, building strong working relationships with people, and appreciating efforts for betterment (Hedayati, 2014; Dierickx, 2018). She inspired advancement and discouraged complacency in a position (Ignatius, 2016; Freeland, 2020).

Structural Sequence Model of Narrative Building Blocks

The narrative analysis revealed narrative blocks (knowledge, experience, skill, talent, integration). Each of these blocks revealed that some entrepreneurs got knowledge from peculiar situational experiences (like Henry Ford, Mark Zukerberg, Verghese Kurien), on-the-job learning (Jeff Bezos, Andrew Carnegie) while others just dreamed to convert knowledge (Elon Musk-he looked for physics in almost everything; Indra Nooyi-looked at applying strategies) into reality. Yet others intellectually advanced family businesses (Jamsetji Tata, JRD Tata) or created their own solely from talent (Dhirubhai Ambani). Gradually, all combined the five blocks to create a whole new empire (Burnett et al., 2015).

The narrative stories analysis involves a structural sequence model of extracted five narrative blocks (knowledge, experience, skill, talent, integration) from each narrative leading to aggregated narrative learnings (Refer to Figure 1) on entrepreneurial intentions leading to the eventual entrepreneurial leadership journey of innovations.
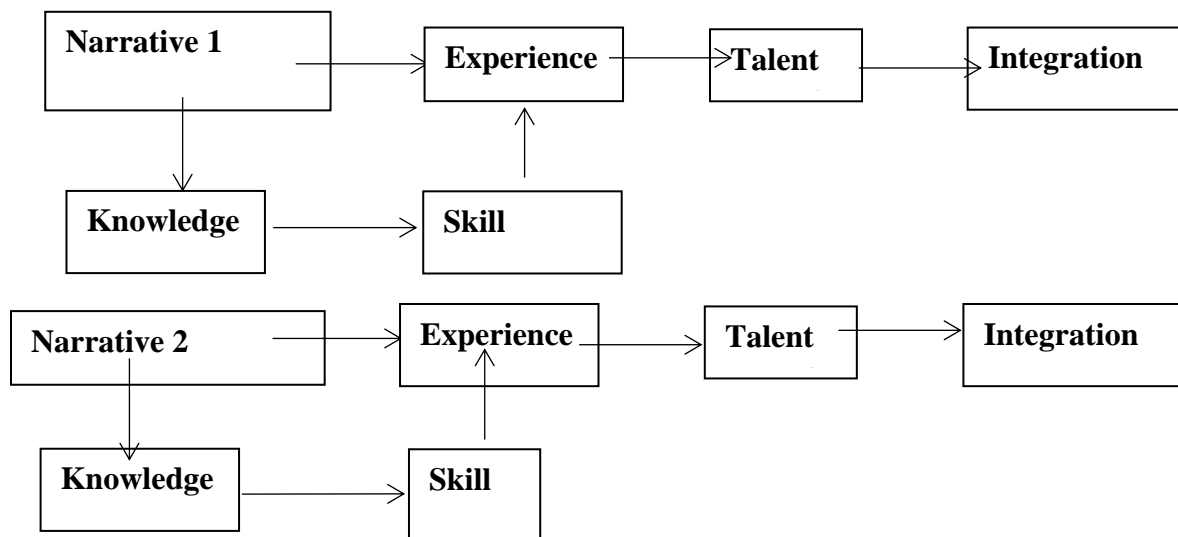
Structural Sequence Model of Narrative Building Blocks Learning
(Source: Authors Work)

Thus, here is a word cloud that reveals Capacity Building Strategies for Change Transformation through planned behavior and role modeling (Refer to Figure 2).

Figure 2 Capacity Building Strategies for Change Transformation
Source: Authors' Work

Net Worth of Entrepreneurial Leaders

Entrepreneurial Leader	Range of Approx Net Worth 2022 (USD)
Indra Nooyi, Narayan Moorthy	100,000 – 1Million US$
Warren Buffet, Jeff Bezos, Henry Ford	117 – 200 Billion US$
Elon Musk, Andrew Carnegie, John Rockefeller	217 – 340 Billion US$
Mark Zuckerberg, Dhirubhai Ambani	80-93 Billion US$
Allan Mulally, Jamsetji Tata, Verghese Kurien	1.4-2 Million US$
Jehangir Ratanji Dadabhoy Tata	1 Billion US$

Table: 3 Net Worth of Entrepreneurial Leaders
Source: Authors' Work

Narrative Blocks	Knowledge codes	Skill codes	Experience codes	Talent	Integration Aggregated Learnings
Narrative 1 Warren Buffet	Stock Analysis, Margin of safety -each purchase. Portfolio management Speculative market forces (Bowen et al., 2014)	Investment Networking Building Business Associates	Promoted equal participation and engagement	Stock settles at all-time highs	Focus on investment return and risk reduction. Review Financial statements for operational consistency (Rotblut, 2022)
Narrative 2 Andrew Carnegie	Sewing Threads Telegraph Steel Manufacturing Railroads Philanthropist	Investment Rail Road Sleeping Cars Coal Ironworks Oil	Liquid Assets Investments Venture Capitalism	Investment Opportunities	Investment in diverse areas

Narrative 3 Henry Ford	Assembly line Gasoline engines	Mass Production Quadricycle	Experimentation in Automobile design for the middle class	Time Reduction in Motor Production	Improve automobile production for the common man's use
Narrative 4 John Rockefeller	Oil Refining Gasoline Usage	Negotiation Aggressive Competition	Business Partnerships	Visioning of pipelines, Railroads for transportation	Promoting Oil Refinery Business
Narrative 5 Elon Musk	Affordable automotive manufacturing electric cars Tesla SpaceX SolarCity Boring	Mass Marketing Model S vehicle Falcon 9 rocket Hyperloop OpenAI	Investments Startups Mergers	Visioned construction of Space Rockets, Electric Cars, Solar Panels, underground tunnels,	Technology First Approach
Narrative 6 Allan Mulally	Automobiles Design And Manufacturing	Visionary Change Management Leadership	In-person Review Meetings promoting Transparency	Identification of excessive cost saving in designing cars, effectuating Turnarounds	Restructuring for core brand growth
Narrative 7 Jeff Bezos	Start-up International Trade E-commerce Virtual Bookstore Amazon Web Service Kindle Blue Origin	Experiments Bookselling	Product Management	Identification of investment possibilities in web	Promotion of Internet sales for diverse products through online retail stores
Narrative 8 Mark Zuckerberg	Social media Programmer Social Networking Sites	Self-learning in Coding, Content Sharing Newsfeed	Partnership Investors	Identification of ideas in college networks and work groups	Maintained that Technology can build superpower connections
Narrative 9 Verghese Kurien	Over excess quantity Milk into Powdered Milk Buffalo Milk Utility	Formation of cooperatives	Ensured Local management solutions for common people Rural and small-scale producers	Tied-up with local technologies and Tetra Pack for packaging for selling longer shelf-life milk	Maintained product hygiene, bacteriological and organoleptic standards
Narrative 10 Dhirubhai Ambani	Textile Spices Shell Gas Station	Formation of Retail Franchises	Retailing, Selling Oil, Accounting, Bookkeeping,	Marketing Expertise Inventory Accumulation Retail Stores	Maintained textile, petroleum, power, and

			banking, documentation		infrastructure industries
Narrative 11 Jamsetji Tata	Green Scholar Family Business Bankrupt mill Alexander Cotton Mill Empress Mills Advance Mills Swadeshi Mills	Formation of Hotel Taj at Mumbai and High-Tech Mills	Investments Foreign Exposure	Bargaining Deal-making Mill purchase and sale	Iron Company Hydroelectric Power Plant Learning Institution of Science and Engineering
Narrative 12 Jehangir Ratanji Dadabhoy Tata	Commercial Airline Mail Delivery Air India International Locomotive manufacturing Tata Tea Tata Consultancy Services Titan	Formation of Tata Brand in different areas	License Commercial Pilot -Aviation Rebranding and Promotion	Diversification into various utility areas Takeovers	Tata Institutes related to Fundamental Research, Social Sciences, Advanced Sciences, Performing Arts.
Narrative 13 Narayan Murthy	Research Associate System Programmer Softronics	Formation of Infosys	Electrical Engineer Strategic Trustee and Board Advisor	Design and Implementation	Global Delivery Model for IT services outsourcing
Narrative 14 Indra Nooyi	Product Manager Textile Strategy Consultant	Development/ Restructuring of Pepsico	Recognizing Customer Preferences and Customizing products for mass markets	Corporate Strategy Planning Acquisitions Redesigning Packaging	Pepsico Takeovers of Tropicana and Market Segmentation for variety Snacks

Table: 4 Narrative Blocks and Aggregation from Case Files
Source: Authors' Work

5. Findings: Similarities and Differences

The research study promptly discloses the descriptive/interpretative validity of narrative stories of renowned entrepreneurs, where they share their exceptional capacity-building strategies for achieving continued entrepreneurial success and innovation. These stories demonstrated conscious intensity in joint ownership of circumstances for development (He et al., 2017). They projected similarities in entrepreneurial traits (determination, vision, daring, scenario planning, problem-solution focus, design thinking, common ground) but differences in emphatic role-modeling approaches for success like "choose business associates wisely"(Warren Buffet) "customer first obsession"(Jeff Bezos), " Experimentation for better" (Henry Ford), "people-task ownership"(Verghese Kurien), "Focus dream projects"(Jamsetji Tata), "integrating minds"(Andrew Carnegie), "growing people"(Indra Nooyi), "Right partnerships"(Mark Zuckerberg). The research study explains that adopting a differential approach encourages uniqueness, design thinking (where we are -where we want to go- what we want to achieve), and community acceptance of entrepreneurial practices. The net worth of entrepreneurial leaders indicates the extent of the level of success achieved with consistent practices (Refer to Table 3) and the narrative blocks indicate the sequential manner of success achievement (Refer to Table 4).

6. Practical Implications

The over-involving study has succeeding scope in enlightening contemporary intrapreneurial leaders with the strategic capacity-building themes of world leaders and the entrepreneurial direction achieved by them. The

narrative research approach has progressive scope for practitioners for understanding different types of beliefs, and principles of co-evolution of problem-solving within dynamic socio-environmental situations to co-create innovative, worthwhile solutions. It is a useful, interpretative, intriguing tool for developmental entrepreneurs as it reflects on incremental human experiences within meaningful social, and cultural contexts.

7. Conclusion

The paper focuses on persuasive role modeling strategies for accomplishing entrepreneurial education and innovation. Thus, the paper reiterates that the theory of planned behavior practically opens the mind, heart, and will to undertake incremental progressive actions for innovations for societal appreciation. The narrative analysis of five narrative blocks (knowledge, experience, skill, talent, and integration) for each narrative explains the applied strategy of each entrepreneurial leader to develop breakthrough entrepreneurial intention and innovation within the substructure of the socio-cultural theory. Thus, the paper effectively furnishes insightful learning on the thought-provoking, interpretative ways, means, and planned practices of entrepreneurial leaders in the social context for building unique ideas or dream growth projects.

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The Impact of Negative Word of Mouth on Customer Retention:
A Brand Portfolio Perspective

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Abstract
Zigwheels.com has over 1000 customer reviews and answers to standard car-related questions on various cars. There are hundreds of such car websites and electronic platforms that have either a positive or negative opinion. This study looks into the impact of such negative electronic word-of-mouth publicity, taking the case of the failure of an entry-level car. The concept of the brand portfolio has been used while assessing the impact of negative electronic word-of-mouth publicity. This was done to conduct an exhaustive evaluation of the impact. The brand portfolio includes brands of the parent from the same product category (cars in this case) and unrelated product categories (non-cars). Additionally, it evaluates the impact on a group of related product parent brands. Going further, the model further evaluates the impact on competing products (competing cars in the same segment) due to negative electronic word-of-mouth publicity for the affected brand. 400 car users were surveyed, and their perception of the impact on the entire brand portfolio, including that of competing brands, was obtained. The analysis was done using PLSPM. The negative e-WOM had a significant impact on related product categories, competing brands, and parent brands but did not have a significant impact on the unrelated product categories of the same parent.

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1. Introduction

The theory of WOM (word-of-mouth) has its origins in the 1970s, when George Silverman formalized the concept (Cheung et al., 2014). The emergence of Web-2.0 led start-ups like YouTube, Facebook, Digg, and My Space to use a concept called buzz marketing, and thus came e-WOM. E-WOM is not different from WOM as a concept. On the other hand, in this digital era, it is a big extension and expansion of WOM. Making a case for negative and neutral e-WOM Langaro et al. (2020) have mentioned the recent challenge presented by the literature on negative and neutral e-WOM to predominantly positive e-WOM-oriented research so far. Sun et al. (2020) have similarly explored the impact of positive and negative e-WOM on enhancing or weakening brand equity and consumer ethnocentrism. An interesting dimension of a recent debate is the similarity or difference between the effects of positive e-WOM and negative e-WOM. Researchers like Sun et al. (2020), Katsifaraki and Theodosiou (2020), and Devigili et al. (2020) have by and large posited that there is not much difference between these two directions of the e-WOM. Yan et al. (2019), on the other hand, found that promotion effort in excess can lead to dissatisfaction amongst consumers, causing an increase in negative e-WOM effects on sales and profit. Filieri et al. (2018), Patil et al. (2018), and Jesuthasan et al. (2020) seemed to think that there are higher impact risks associated with negative e-WOM. This study evaluates the impact of negative WOM in the

context of brand portfolio theory and explores to what extent the impact of negative WOM can cascade. The term negative WOM has been operationally defined to include predominantly negative e-WOM.

2. *Concept of e-WOM and negative e-WOM*

e-WOM communication means any positive or negative views or statements made by prospects, actual customers, or former customers about a brand or a product using the internet (Hennig et.al., 2004). The communication takes place over social media, websites, blogs, etc. e-WOM represents a new type of interaction between a receiver and a sender (Cheung and Thadani, 2010).
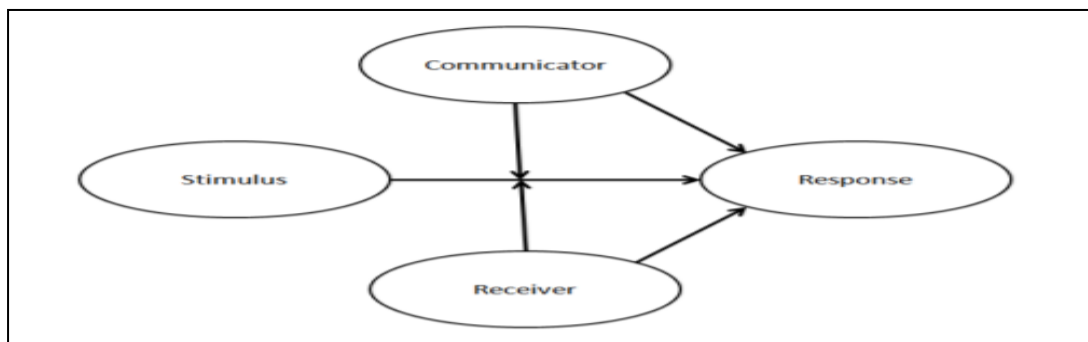
Figure 1: Interaction in e-WOM
Source: Cheung and Thadani, 2010
It has the following four elements:
- Communicator - Person who transmits the communication
- Stimulus - the transmitted message
- Receiver – Person who responses to the communication
- Response – Action by the receiver

Table 1 shows how e-WOM is different from WOM (Huete-Alcocer, 2017).
Table 1: Difference between WOM and e-WOM

Factor	WOM	e-WOM
Credibility	Receiver of the information knows the communicator	Anonymity between receiver and communicator
Privacy	Conversation is private	Shared information is not private
Diffusion speed	Messages spread slowly	Messages transmit quickly
Accessibility	Relatively less accessible	Easily accessible

(Source: Huete-Alcocer, 2017)

Negative WOM and negative e-WOM

Negative WOM is the interactive communication between consumers regarding a brand or product that denigrates the object of the communication (Richins, 1984). The negative WOM typically involves two-way communication. Moreover, because a large amount of negative WOM concerning brands and products is a result of communicators' personal experiences, most of it is probably true; however, there is a possibility of some exaggeration and distortion in the message.

According to Beneke et al. (2015), negative e-WOM has a greater impact on brand trust than positive e-WOM, and that might also affect brand trust. Moreover, negative e-WOM has an impact on buying decisions two times more than positive e-WOM.

The negative e-WOM may gain more attention than the positive one, but the negative e-WOM is not always a problem for the organisation. Sometimes negative e-WOM is used as a tool to improve brand evaluation and customer relationships.

This research investigates the impact of negative e-WOM from a brand portfolio perspective. A case study was conducted using the example of an entry-level car that was adversely affected by the negative perception in terms of image. Did it, and how much harm did the negative e-WOM of one affected brand did to the different brands of the group in its brand portfolio? Did the competing brands benefit due to the negative e-WOM of the affected brand? These are the research questions that this study endeavours to answer.

3.   Objectives of the study

The study has the following objectives:

1.   To examine the effect of negative e-WOM on the related product categories of the same parent brand.
2.   To examine the effect of negative e-WOM on the unrelated product categories of the same parent brand.
3.   To examine the effect of negative e-WOM on the other competing brands.
4.   To examine the effect of negative e-WOM on the different parent brands.

The study is expected to add a new dimension to the recent heightened academic exploration of negative e-WOM, taking into its domain terms like neutral e-WOM (Yuan et al., 2020). By bringing into discussion the context of the brand portfolio, the study aims to provide a larger perspective on the context of WOM and e-WOM. The impact of WOM is certainly not restricted to the brand under consideration. It extends vertically and horizontally to the brand portfolio and to the competing brands. To what extent the impact can spread is being explored in this study.

4. Literature Review

Word of mouth is perhaps the most seasoned method of passing on information (Dellarocas, 2003), and it has been characterised by various perspectives. Probably the most accurate definition was that advanced by Katz and Lazarsfeld (1966), who portrayed it as the exchange of marketing information between consumers so that it plays a crucial role in forming their behaviour and changing their perception towards products and services. Different authors (e.g., Arndt, 1967) have recommended that WOM is a personal concept between a communicator and a receiver, who sees the information received about a brand, product, or service as non-business.

In like manner, WOM has been characterised as communication between consumers about a product, service, or company in which the sources are viewed as free of business impact (Litvin et al., 2008). These relational exchanges give admittance to information identified with the utilisation of that product or service far beyond formal publicising, i.e., that goes beyond the messages given by the organisations and automatically impacts the person's dynamic (Brown et al., 2007). WOM is generally viewed as one of the most compelling factors influencing consumer behavior (Daugherty and Hoffman, 2014). This impact is particularly important with intangible products that are hard to assess before utilization, for example, the travel industry or accommodation. Therefore, WOM is viewed as the most important information source in consumers' buying choices (Litvin et al., 2008; Jalilv and Samiei, 2012) and proposed behaviour. For instance, traveler fulfillment is of the most extreme importance given its impact on behavioral goals, WOM, and buying choices. All in all, general fulfillment prompts the chance of returning to and suggesting the objective (Sotiriadis and Van Zyl, 2013). Essentially, past examination demonstrates that consumers see WOM as a significantly more dependable channel than traditional media (e.g., print notices, radio, TV, and so on) (Cheung and Thadani, 2012). It is in this manner thought about one of the most compelling wellsprings of information regarding products and services (Lee and Youn, 2009). Customers by and large trust different consumers more than vendors (Nieto et al., 2014). Therefore, WOM can impact numerous receivers (Lau and Ng, 2001) and is seen as consumer-centric marketing divert in which the communication senders are independent of the market, which lends them authenticity (Brown et al., 2007). This autonomy makes WOM a more dependable and trustworthy channel (Lee and Youn, 2009; Arndt, 1967). The present new form of online WOM communication is known as electronic word-of-mouth or e-WOM (Yang, 2017). This form of communication has taken on uncommon importance with the rise of online platforms, which have made it one of the most powerful information sources on the Web (Abubakar and Ilkan, 2016), for example, in the travel industry (Sotiriadis and Van Zyl, 2013). Because of mechanical advances, these new methods for communication have prompted changes in consumer behavior (Gómez-Suárez et al., 2017; Cantallops and Salvi, 2014), on account of the impact they empower consumers to apply on one another (Jalilvand and Samiei, 2012) by permitting them to acquire or share information about organizations, products, or brands (Gómez-Suárez et al., 2017). One of the most exhaustive originations of e-WOM was proposed by Litvin et al. (2008), who portrayed it as all informal communication using the Internet routed to consumers and identified with the utilisation or qualities of products or services or the dealers thereof. The upside of this channel is that it is accessible to all consumers, who can utilise online platforms to share their feelings and reviews with different customers. Where once consumers confided in WOM from loved ones, today they look to online reviews (e-WOM) for information about a product or service (Nieto et al., 2014). Because of ICT, today consumers from everywhere in the world can leave reviews that different customers can use to effortlessly acquire information about products and enterprises. Both dynamic and uninvolved consumers utilise this information channel (e-WOM). People who share their conclusions with others online are dynamic consumers; individuals who just quest for information in the reviews or assessments posted by different customers are aloof consumers (Wang and Fesenmaier, 2004). Electronic word of mouth additionally furnishes organisations with a preferred position over traditional WOM insofar as it permits them both to attempt to understand what factors persuade consumers to post their conclusions online and to check

the effect of those reviews on others (Cantallops and Salvi, 2014). In any case, consumers' utilisation of innovation to share sentiments about products or services (e-WOM) can be an obligation for firms, as it can turn into an aspect they don't control (Yang, 2017). To check this, organisations are looking to oversee customers' online reviews by creating virtual spaces on their own sites where consumers can leave reviews and share their suppositions about the business' products and services (Vallejo et al., 2015). By the method of the model, in the field of the travel sector, organisations are beginning to understand that ICT-empowered media impact sightseers' buying behaviour (Sotiriadis and Van Zyl, 2013). Understandably, organisations see the two sorts of suggestions—WOM and e-WOM—as another opportunity to tune in to customers' needs and change how they advance their products or services to meet them, consequently expanding their return. A negative or uplifting mentality towards the product or service will impact customers' future buying goals by permitting them to think about the product or service's genuine performance in light of their requirements (Yang, 2017). In the field of consumer behaviour, some past examinations (Park and Lee, 2009) have demonstrated that consumers give more weight to negative information than to positive information (Cheung and Thadani, 2012). For instance, customers generally happy with a product or service will, in general, become faithful agents thereof through certain e-WOM (Royo-Vela and Casamassima, 2011), which can yield profoundly favourable circumstances for foundations, organisations, or merchants, particularly more modest ones, which will, in general, have fewer resources. A few examinations have recommended that traditional WOM is the deal and marketing strategy regularly utilised by independent ventures. Also, e-WOM offers organisations a mechanism to distinguish customers' needs and perceptions and even a practical method to speak with them (Nieto et al., 2014). Today, e-WOM has become an important channel for organisations' social media marketing (Hussain et al., 2017). While numerous authors (Filieri and McLeay, 2014) consider e-WOM reviews to be electronic forms of traditional WOM reviews, scholars have attempted to clarify the principal differences between the two ideas. The main such distinction is authenticity as an information source (Hussain et al., 2017; Cheung and Thadani, 2012), since it can impact consumers' perspectives towards products or services (Veasna et al., 2013), for example, concerning the acquisition of travel industry services, which are viewed as high-risk (Sotiriadis and Van Zyl, 2013). Researchers like Luo et al. (2013) have recommended that the anonymity of online messages can negatively affect their validity. Conversely, different investigations (e.g., Hussain et al., 2017) have argued that consumers use e-WOM more to decrease risk when dynamic. Similarly, e-WOM will generally be more trustworthy when the consumer utilising it has experience using it (Sotiriadis and Van Zyl, 2013). Message protection is another component that sets the two media apart since with traditional WOM information is shared through private, constant, vis-à-vis discourse and discussions. Interestingly, information shared through e-WOM doesn't remain private and can sometimes be seen by unknown individuals who don't know one another. Furthermore, reviews can be seen from different dimensions of comparison (Cheung and Thadani, 2012). Surely, as e-WOM reviews are composed, consumers and organisations can verify them whenever they want; this is rather than traditional WOM, where once the message has arrived at the receiver, it will in general disappear. Another remarkable contrast between the two sources is the speed at which the message gets disseminated; e-WOM information spreads a lot faster than WOM proclamations as a result of where they are distributed, that is, on the Internet (Gupta and Harris, 2010). Online platforms for sharing information (websites, social media sites, and so on) are what separate e-WOM from traditional WOM (Cheung & Thadani, 2012). To begin with, they make reviews accessible to more consumers (Sotiriadis and Van Zyl, 2013; Cheung and Thadani, 2012). Second, since they are composed, they continue after some time (Cheung and Thadani, 2012; Hennig-Thurau et al., 2004).

5. Methodology

Research Model
Figure 2 portrays the research model.
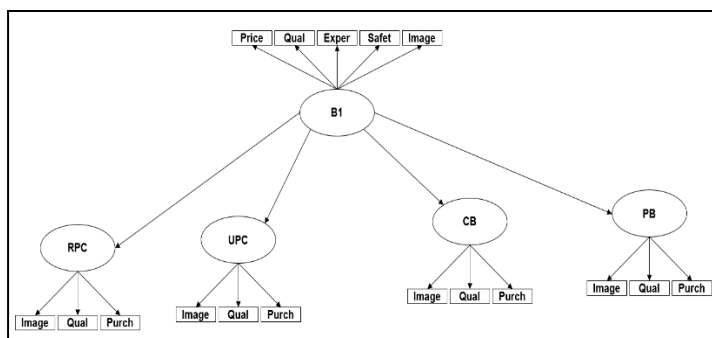
Figure 2: Research model for the study

The variables are defined in Table 2 given below.

B1, the affected brand, is at the center of the scheme of things. It is a prominent entry-level car that took a pounding in the market due to its negative image as a cheap car. The model proposes to investigate the extension of the effect of negative WOM (including negative e-WOM) on a range of different brands, as shown in Table 2.

Table 2: Variables and brand definitions

Sr. No.	Variable(s)	Brand(s)
1	B1	Affected brand
2	RPC = Related product categories for same parent	Other car brands of the same parent company
3	UPC = Unrelated product categories for the same parent	Other products (other than cars) of the same parent company
4	CB = Competing brands	Competing cars for B1 of different companies
5	PB = Parent Brands	Different parent companies

Based on the research model following set of hypotheses was formulated:

6. Hypotheses

Ha1: There is significant impact of negative e-WOM on related product categories.
Ha2: There is significant impact of negative e-WOM on unrelated product categories.
Ha3: There is significant impact of negative e-WOM on competing brands.
Ha4: There is significant impact of negative e-WOM on parent brands.

Five factors have been considered as sources of negative e-WOM for the affected brand. Safety, quality, price, experience, and image are a broad range of factors that have general applicability to a variety of products, including those that are unrelated to the product category of the affected brand. These five factors were measured on a 5-point Likert scale of perception. The response options were highly negative, negative, neutral, positive, and highly positive. The associated manifest variables were price, image, safety, experience, and quality. The four dependent latent variables were: impact on related product categories (same parent), impact on unrelated product categories (same parent), impact on competing brands, and impact on parent brands. Each of these dependent latent variables had three manifest variables: image, quality, and purchase intent. The independent latent variable was e-WOM for the brand under consideration.

The assessment was done through a survey of 400 car customers. The size of the sample was chosen given the fact that the population of car owners is expected to be large. Standard tables like Krejcie and Morgan (1970) provide a sample size of 377 for a population of 10,000 (considered a large population) at a 95% confidence level and a 5% confidence interval. PLS-PM, a versatile method for dealing with structural equation models, was used for the data analysis.

7. Results, Findings and Discussion

Data obtained from a survey of 400 car user respondents was analyzed using PLS-PM in XLSTAT.

Results and findings

Table 3 summarizes the model construct and summary descriptive statistics:

Table 3: PLS PM Variables

Latent variable	B1	RPC	UPC	CB	PB
Number of manifest variables	5	3	3	3	3
Type	Exogenous	Endogenous	Endogenous	Endogenous	Endogenous
Manifest variable	Price	Image	Image	Image	Image
	Quality	Quality	Quality	Quality	Quality
	Experience	Purchase int.	Purchase int.	Purchase int.	Purchase int.
	Safety				

	Image					

Table 4: Summary Descriptive Statistics

LV	Variable	Obs.	Minimum	Maximum	Mean	Std. deviation
	Price	400	3.000	5.000	4.048	0.800
	Quality	400	1.000	3.000	2.033	0.825
	Experience	400	1.000	3.000	2.058	0.812
	Safety	400	3.000	5.000	4.040	0.827
B1	Image	400	1.000	2.000	1.525	0.499
	Image	400	1.000	4.000	1.150	0.409
	Quality	400	1.000	4.000	1.155	0.470
RPC	Purchase	400	1.000	3.000	1.138	0.417
	Image	400	3.000	5.000	4.140	0.442
	Quality	400	3.000	5.000	4.160	0.499
UPC	Purchase	400	3.000	5.000	4.128	0.443
	Image	400	3.000	5.000	3.995	0.442
	Quality	400	3.000	5.000	3.985	0.441
CB	Purchase	400	3.000	5.000	4.000	0.400
	Image	400	3.000	5.000	4.020	0.406
	Quality	400	3.000	5.000	3.953	0.413
PB	Purchase	400	3.000	5.000	4.023	0.421

The manifest variables in the case of B1 show measures in the range of 1 to 5, indicating highly negative and highly positive responses, respectively. However, in the case of price, the minimum rating is 3. At the same time, the minimum ratings for quality, experience, and image are 1 each, and interestingly, the maximum ratings for these are capped at 3 for quality and experience and at 2 for image. This pattern explains the variation in the means of the five manifest variables in the case of B1. The beating that image has taken is very clearly indicated by the minimum, maximum, and mean values of 1.525 on a scale of 5, and that too has a standard deviation of only 0.499 as compared to standard deviations that are almost double in the case of the other 4 manifest variables.

RPC is the related product category of the affected brand, B1. This latent variable has three manifest variables: image, quality, and purchase intent. The minimum value for all three manifest variables is 1, and the maximum is capped at 3 for purchase intent and 4 for image and quality. The mean and standard deviation for all three manifest variables is in a tight range.

For the other three latent variables, unrelated product category (UPC), competing brands (CB), and parent brands (PB), the manifest variables have a minimum of 3 and a maximum of 5. Moreover, the mean and standard deviation are in a narrow range.

Figure 3 provides the output of the PLSPM model, and the table below summarises the results and findings:
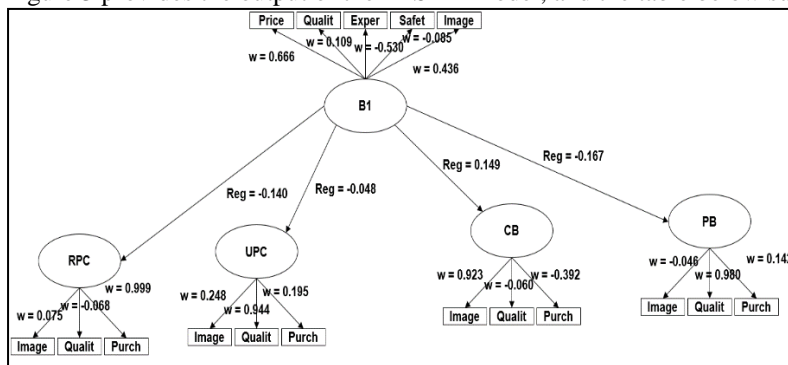
Figure 3: PLSPM graph

For the latent variable B1, Price has a weight of 0.66 and a correlation of 0.68. Experience has a weight of -0.53 and a correlation of -0.58. Further, Image has a weight of 0.44 and a correlation of 0.51.

For RPC, the purchase intent has a weight of 0.99 and a correlation of 0.99. Image and quality have significantly lower weights and correlations.

For UPC, Quality has a weight of 0.94 and a correlation of 0.95. Image and purchase intent have significantly lower weights and correlations.

For CB, Image has a weight of 0.92 and a correlation of 0.91. Quality and purchase intent have significantly lower weights and correlations.

For PB, Quality has a weight of 0.98 and a correlation of 0.98. Image and purchase intent have significantly lower weights and correlations.

Table 5: Hypotheses testing

Sr.	Null Hypothesis	R^2	Slope	Results
1	There is no significant impact of negative e-WOM on related product categories	0.020	-0.14	p-value = 0.005, Null Hypothesis rejected
2	There is no significant impact of negative e-WOM on unrelated product categories	0.002	-0.048	p-value = 0.337, Null Hypothesis could not be rejected
3	There is no significant impact of negative e-WOM on competing brands	0.022	0.149	p-value = 0.003, Null Hypothesis rejected
4	There is no significant impact of negative e-WOM on parent brands	0.028	-0.167	p-value = 0.001, Null Hypothesis rejected

1. Hypothesis 1: The first hypothesis compared the impact of negative e-WOM on related product categories. The model R^2 was 0.020 and the p-value was 0.005. The relationship was significant despite such a low correlation. The weak correlation may be due to a large number of manifest variables (5 and 3). ("How to Interpret a Regression Model with Low R-squared and Low P values", 2020). Hence the null hypothesis that there is no significant impact is rejected.

2. Hypothesis 2: The second hypothesis compared the impact of negative e-WOM on unrelated product categories. The model R^2 was 0.0020, and the p-value was 0.337. Hence, the null hypothesis that there is no significant impact of negative e-WOM on unrelated product categories could not be rejected.

3. Hypothesis 3: The third hypothesis compared the impact of negative e-WOM on competing brands. The model R^2 was 0.022, and the p-value was 0.003. Hence, the null hypothesis that there is no significant impact of negative e-WOM on competing brands was rejected.

4. Hypothesis 4: The fourth hypothesis compared the impact of negative e-WOM on parent brands. The model R^2 was 0.028 and the p-value was 0.001. Hence the null hypothesis there is no significant impact of negative e-WOM on parent brands was rejected.

Positive slopes of 0.149 in the case of competing brands indicate an addition to the overall latent variable value CB for a given value of B1 (the affected brand). In other words, in the case of competing brands, for every "unit" of negative e-WOM, there is a positive addition to the latent variable measuring competing brands. On the other hand, negative slopes of -0.14, -0.048, and -0.167 for related product category, unrelated product category, and parent brand indicate a reduction in the overall latent variable values of the three for a given value of B1 (affected brand). In other words, in the case of unrelated product categories and parent brands, for every "unit" of negative e-WOM, there is a reduction in the latent variable measuring unrelated product categories and parent brands.

5.   Discussion

From the brand portfolio, three dimensions have shown the impact of the negative e-WOM. These are related products from the same brand, competing products, and parent brands. However, no impact could be proved in the case of unrelated products of the same brand. Interestingly, the correlation read with low values of R^2 apparently gives the feeling that even in the case of these three dimensions, there is no impact of negative e-WOM on the affected brand. We bring into discussion the article ("How to Interpret a Regression Model with Low R-

squared and Low P Values,", 2020) to clarify this position. The article highlights two cases with low p-values but with low and high R^2. Despite the weak correlation in one case, the regression equation is quite similar with a p-value of 0.0001, and hence for both cases (one with a high R^2 and one with a low R^2), the null was rejected. Thus, in this case, notwithstanding lower R^2 values like 0.020, 0.022, and 0.028, going by the p-values of 0.05 and even 0.01, three of the four null hypotheses were rejected, leading to an inference of impact between the negative e-WOM-affected brand and other dimensions of brands, namely, related product categories from the same brand, competing brands, and parent brands. Our results are in line with those stated by Filieri et al. (2018), Patil et al. (2018), and Jesuthasan et al. (2020), where a negative e-WOM was projected to have higher impact risks. Our study shows that the impact of negative e-WOM is not restricted to the affected brand alone; it damages the standing of other products in the brand portfolio to some extent. However, in the case of competing brands, the impact is in the opposite direction.

6.   Conclusion

The negative e-WOM has a significant impact on the related product categories of the same parent. The negative e-WOM did not have a significant impact on the unrelated product categories of the same parent. The negative e-WOM has a significant impact on the competing brands of the affected brand. The negative e-WOM has a significant impact on the different parent brands. Summarily, e-WOM may certainly be considered one of the factors in purchase decisions. However, from a brand portfolio concept perspective, our case under study is related to a diversified conglomerate. The other brands in this house each have their own unique stories, but the negative e-WOM of a single brand has an impact on their performance. The reputation built over the years is seen as being slightly affected due to the failure of a single product. The limitations of our study include those that are applicable to sampling in general. Similar research can be carried out on other products, for instance, an item related to food that is perhaps more sensitive than the one under consideration in this paper.

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Customer Perception Towards Purchase of Gold Among Middle Income Investors in Bangalore

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Abstract
While the high-income group has the largest consumption on a per-person basis, the middle class continues to be the primary consumer of goods and services. Having more disposable income is correlated with a greater propensity to buy gold, yet investing in gold does not generate returns proportional to income growth, the objective of the study is to understand the customer perception of gold purchases among middle class investors and understand the motivating and resisting factors for purchase of gold by them. The current study is a positivism approach which is deduced from previous studies on customer perception of gold. Owing to its nature the study is a mono method quantitative analysis which uses middle income gold customers as the participants of the study. Using the Kregcie morgan formula of Unknown population at 7.5% margin of error a sample of 181 middle income investors was considered viable. The researcher distributed 210 questionnaires and 181 responses were considered for the study after removing the Outliers. The responses were collected from Mathikere, Hebbal, R.T.Nagar, Yelahanka in North Bangalore and Cantonment, Shivajinagar, Malleswaram, Indiranagar from central Bangalore. A well-structured questionnaire was prepared to collect the response. The scale validity and reliability was affirmed using the master validity table by Gaskins. SPSS and AMOS software was used for data analysis. The results of the study indicate that buyers have a preference for purchasing gold, driven by both ornamental and investment considerations. The clients also sent their observation that the price of gold is elevated, nevertheless they exhibit a preference for its acquisition owing to its deeply ingrained conventional attributes. Furthermore, the research revealed that clients frequently engage in the purchase of gold for cultural and traditional motives, exemplified by its utilization in weddings and religious events. Understanding how middle-income investors perceive gold purchases can help financial institutions and investment firms tailor their products and services to better meet the needs and preferences of this group. Additionally, this study can provide valuable insights into the role gold plays in the investment portfolios of middle-income individuals and how it compares to other asset classes in terms of perceived value and risk.

Keywords – Customer perception, Gold purchase, Motivating factors, Resisting factors, Middle income investors

1. Introduction
Jeni Branson, (2014) "Gold is an integral part of Indian society and a foundation of wealth and savings in India." It is an intrinsic element of the Indian population. The introduction of GST and the demonetization of currency in 2016–17 both had a significant impact on India's economy. Added to this was the covid 19 pandemic – all of which caused the entire nation to go on a roller coaster. The economic environment in India particularly in the investment arena has become very vacillating **Joseph, J. K. (2014).** The ordinary middle class population wants to increase its income but not many safe avenues are available. In the midst of this storm caused by the economic imbalance in the country, people started realising that gold had been going quite steady in spite of the twists and turns in the economy. There was an increased return on gold investments however less they were **DayanaSajjanan, K. R. (2014).** So, demand for gold started increasing- whether be it physical gold in the form of ornaments, coins, bars or e-gold in the form of gold ETFs, gold bonds, gold deposit schemes etc. **Andrlić, B., Hak, M., & Pathy, G. S. (2023).**
The India Gold Policy Centre (IGPC) at the Indian Institute of Management in Ahmedabad performed a nationwide survey and found that the middle income group in India is the group with the largest use of gold in the home. **Asha, K., & Christopher, S. E. (2014).** This demographic earns between Rs 2 lakh and Rs 10 lakh annually and accounts for 56% of the country's yearly gold sales volume. This data was collected through a survey (IIM-A).

Figure 1 - Gold consumption by middle-income population

GOLD CONSUMPTION IN INDIA :: FY21			
Income group	Total volume of gold purchased (Tons)	Value of total gold purchased (Rs mn.)	Per capita consumption (grams)
Rs. < 1 lakh	21	113665	7.71
Rs. 1 - 2 Lakh	58	289680	9.57
Rs. 2- 5 Lakh	78	394468	9.27
Rs. 5 - 10 Lakh	59	296232	11.13
Rs. 10 - 20 Lakh	43	216808	13.99
Rs. >= 20 Lakh	9	42418	27.4
TOTAL	268	1353271	-

Note: *The values and volumes are data from Survey and not to be viewed as actual. It helps provide only nearest estimate. Source: IGPC report

Source- https://www.business-standard.com/article/markets/gold-consumption-highest-among-indian-middle-income-group-122041100455_1.html

While the high-income group has the largest consumption on a per-person basis, the middle class continues to be the primary consumer of goods and services. Having more disposable income is correlated with a greater propensity to buy gold, yet investing in gold does not generate returns proportional to income growth **Liu, J. (2016).** Digital gold goods, often known as paper gold, are gaining popularity among the upper class. The survey found that urban families accounted for about 70% of all purchases in terms of value, which is indicative of increased demand as a result of urbanization. **Samudra, A., & Burghate, D. M. (2012).**

There were major shifts in fiscal policymaking because of the COVID-19 epidemic. As a result of the ensuing unpredictability, many people had to make changes to their investment strategies in order to ensure their long-term financial stability. Due to its reputation as a safe haven in times of economic uncertainty, gold attracted many investors throughout this volatile period. In times of crisis, it has shown to be a liquid asset. **DayanaSajjanan, K. R. (2014).**

The perspective of customers regarding gold purchases encompasses a range of characteristics, including its intrinsic value, long-lasting nature, and cultural importance. Gold is widely perceived by clients as a secure and dependable investment owing to its historically consistent value **Joseph, J. K. (2014).** Moreover, the exceptional endurance of gold renders it a highly appealing option for the acquisition of jewellery, given its reduced susceptibility to tarnish or degradation with the passage of time. Finally, it is worth noting that gold possesses cultural significance in numerous countries, serving as a symbol of affluence, opulence, and social standing. Several variables contribute to the favorable client opinion of gold purchases. **Santhi, M. (2013, July).**

The objective of the study is to understand the customer perception of gold purchases and understand the motivating and resisting factors for purchase of gold.

The first section of the study gives the background of the study. The second section focusses on the review of literature. The research methods are specified in the third section and the fourth section presents the results of the study. The last section of this research concludes with limitations and scope for further research.

2.   Review of Literature

A comprehensive literature analysis was undertaken to examine prior research on customer perception pertaining to Gold purchases. The review encompassed a selection of studies published between the timeframe of 2010 to 2023, which specifically examined the customer impression pertaining to gold purchases across diverse situations. The literature analysis yielded significant insights into the determinants of consumer perception, encompassing elements such as the gold's quality and purity, brand recognition, transparency in pricing, and the level of customer service provided. In general, existing literature indicates that customer perception about gold purchases is complex and subject to the influence of multiple factors. These elements must be taken into account by gold retailers and marketers in order to improve customer satisfaction and foster loyalty.

Following is the related review-

- **Aung, B. (2019).** In Yangon, the factors that influence consumers' decision to acquire gold ornaments are the focus of this research. The aims of the study are to identify the drivers of the consumer buying behavior of gold ornaments in Yangon Region and to analyze the most influencing elements on consumer buying behavior

of gold ornaments in Yangon Region. Survey research is the method of study, and quantitative techniques are used. Both descriptive statistics and multiple regression were employed to analyze the data in this study. Buyers' preferences, self-image, product design, trust, predicted future value, and store image are some of the aspects this study contributes that can impact whether or not someone will buy gold jewelry. The basic data for this study comes from 194 individuals who filled out the survey. A survey of gold adornment buyers in Yangon Region's central business districts was used to compile the data. According to the results, consumers' intent to buy gold jewelry is affected by the precious metal's perceived future value. This study makes a major contribution by educating policymakers on the benefits of investing in gold and fostering a pro-gold mentality. So that gold investment may become one of Myanmar's most important portfolio investments, the country's financial sector needs to be innovative by issuing gold shares and stocks. Gold stocks and shares, rather than real gold, are where most development in the gold market can be found at the moment.

- **Amitabh, A. (2019).** There have been significant structural shifts in India's gems and jewelry business. Along with the greatest service conditions, customers now want the best value offers and the merchant to be trustworthy in all of their dealings with the public. The way people think about jewelry shopping has shifted drastically. Jewelry is purchased for a variety of reasons by Indian consumers, including investment, status symbol, and hedonic pleasure. It's common knowledge that Indian consumers have a passion for gold and jewelry. Given this context, the study aims to determine the myriad of elements that influence consumers' preferences in gold jewelry. Five hundred high-income women participated in the survey, evenly split between the 18-30 (35%), 31-40 (43%), and 41+ (32%) age categories. The sample was further divided into those who were working (70.7%) and those who were not (27.3%), and those who had completed either their Bachelor's (43%) or Master's (57%) degrees.

- **S. Kakkar & P. V. Chitrao. (2021).** Consumers' shifting spending habits reflect the altered business climate, which in turn contributes to rising living standards. Today's businesses rely on cutting-edge technological resources to achieve a competitive edge, and consumers' wants and demands are constantly evolving. Companies invest heavily in R&D, only to see their efforts go to waste when consumers reject their products. The study's overarching goal is to investigate the factors that contribute to consumers' aversion to new ideas. Customers' resistance to change is a key component of any successful innovation. Researching customer habits and behavior as a means of resisting innovation and then boycotting it is essential. The study applies the innovation adoption barrier complexity framework to the context of gold jewelry as an ornament. Gold is a precious metal that can be used as jewelry or used as an investment vehicle. Ornamental god jewelry has deep cultural roots in India, often holding religious or cultural importance. Even though many people still use antiquated methods to purchase stuff, the market has expanded thanks to modernization and globalization. This paper presents the results of an empirical study into the factors that slow down consumers' willingness to embrace new practices when shopping for ornamental gold jewelry. Traditional, usage, value, risk, and perception of the sample's demographics all feature as potential stumbling blocks to the widespread implementation of resistance. The hypothesized elements are put to the test and proven via nonparametric testing. The results of our research show that obstacles of different kinds are affected differently depending on demographic factors.

- **E. Iyer, H. N. et al (2021).** Gold's rarity and cultural significance make it an exceptional commodity. It delivers numerous values and appeals to multiple stakeholders; consequently the buying choice is also likely to be distinctive. Despite this, there is a dearth of research on gold purchasing patterns in the management literature. The purpose of this paper is to investigate who among various family members ends up buying gold and why. Initiator, Influencer, Decider, Buyer, and User are the five distinct sorts of consumers. The study surveyed 210 married women with questionnaires to determine who in the family often acts as the buyer when gold is purchased. The roles are assigned to team members using a correspondence analysis. According to the results, women play a part in every stage of the decision-making process, with the exception of the economic stages, when men tend to dominate the decision-making and purchasing processes, especially when it comes to gold.

- **G. Yoganandham, A. (2020).** Diversity permeates every facet of modern life. This is true from the perspective of customers, marketers, manufacturers, and even the theory of consumer behavior. A decade has elapsed since the dawn of the millennium and there have been many developments occurring across global economics which has had its implications on the Indian economy. The Indian market has been heavily influenced by the global economy and markets ever since we liberalized our economy. Gold jewelry has long been a status symbol, a symbol of wealth, and a symbol of personal pride for individuals all over the world. The love of jewelry is well-known. It is reflected in the fact that on many traditional occasions, giving a gift of gold jewelry is not only seen as auspicious, but is expected. Without the gold Jewels, the bride's trousseau would be lacking. Even if gold prices are high, demand is high as investors continue to speculate on further price increases. This is because of the higher anticipated profits upon resale. Learn more about women's preferences for gold jewelry, their familiarity with name-brand pieces, and the primary motivators behind their purchases by reading this study. This research is useful for jewelry businesses because it reveals which

tactics may be used to boost sales, opens doors for new product launches, and keeps businesses connected with their clientele. Consequently, the study of women's knowledge, awareness, attitude, and purchasing choice behavior with regards to Gold Jewellery in Vellore City is prioritized in this paper.

- **U. Maiya. (2019)** with a focus on Udupi and Kundapura, this study aims to examine how young people there feel about gold jewelry. The research hopes to get insight into the attitudes and preferences of young consumers toward gold jewelry. Statistical analysis of gathered data. This research provides valuable insight for jewelers interested in learning how today's youth feel about gold jewelry. Gold is the most valuable and sought-after precious metal. Gold is a sign of success, power, and riches in many civilizations around the world, giving it a high cultural value. Gold is often associated with religious and cultural rituals in India. This is just one of the many factors that elevate Indian gold jewelry to the status of fine art. There is no statistically significant difference in the levels of satisfaction between the sexes with regards to the brand name, quality, price, features, variety, and purity of the product.

- **Praveenkumar, S. (2019).** Gold, either in its raw form or as jewelry, is heavily advertised for sale and purchase in India. It is highly valued as a savings and investment vehicle, making it a popular choice among Indian investors. When we talk about consumers being "aware," we mean that they are capable of drawing their own conclusions about a product. A company's success is tied to its ability to draw and keep clients who are prepared to pay prices that allow it to turn a profit. The research aims to discover why people in the Madurai area are so keen on purchasing gold jewelry. Therefore, it is necessary to investigate the odd purchasing behavior of the people and accept the adjustments as per the current fashionable people's requirements. As a result, the researcher in this study set out to investigate how people in the Madurai district of TamilNadu shop for and use gold jewelry. The study uses statistical methods such as the Chi-square test, the Garrett Ranking, and the Percentage Analysis, among others, to analyze the 250 samples it collects and to draw meaningful conclusions and recommendations from them.

- **Gyaneshwari, K. (2019)** Many people associate gold with luxury and splendor. The purpose of this research is to examine the demographic factors that affect consumer behavior while choosing between branded and non-branded jewelry. The purpose of this research is to collect data on the demographic factors that play a role in the decision to buy jewelry. Due to factors like market confusion, falling investment, compulsive sales, intriguing distribution channels, and competition from other pricey goods, bigger businesses are seeing a rise in recent activity. Consumers are fairly mindful of the branded players that have joined the jewellery market, according to the research, and would prefer to buy branded jewellery in the immediate future. This article examines how different demographic groups' purchasing habits for branded and unbranded gold jewelry are related.

- **Angel (2019)** Satisfaction of a customer depends on how well the company meets their needs. Customers are happy if and only if their expectations are met. When results outshine those anticipated, customers are thrilled. Brooches, rings, necklaces, earrings, and bracelets are all examples of jewelry. Jewellery can be made from a broad variety of materials, including precious metals like gold and silver, gem stones, beads, and shells. Customer Happiness with Jewelry in the Nagercoil Area is the Subject of This Study. In addition, we intend to investigate the demographic and economic variables that play a role in shaping consumers' buying habits, attitudes, and opinions regarding Gold jewelry. For this particular study, the researcher has chosen to focus on 150 random clients. The study incorporated both primary and secondary sources. The researcher gathered information with the help of a questionnaire. The analysis made use of statistical methods. Customers who bought gold jewelry did so for investment purposes, according to the report. Customers' buying decisions have been found to be influenced most by design, then by purity.

- **Kana, T. (2020).** There are several internal and external factors that can affect a consumer's purchasing decision. Direct interaction with a salesperson and the use of promotional tools can both play a role in persuading consumers to make a purchase. The purpose of this research is to examine how in-person interactions and sales incentives affect consumers' preferences when shopping for gold jewelry. The methodology used in this study is statistical. A total of 1,193 people were included in the analysis. The sampling method employed was incidental sampling, in order to get a sample of 92 people. Interviews and questionnaires were used to compile the information. Multiple linear regression analysis was used in SPSS version 22 to evaluate the gathered data. The findings indicated that consumer decisions were positively impacted by a combination of characteristics related to direct sales and sales promotions. The results show that Ha is accepted and H0 is denied since the F-count (195.569) is greater than the F-table (3.10) at a significance level of 0.000 less than 0.05. Sales promotions and in-person interactions have a positive and substantial impact on consumers' decisions to buy gold jewelry.

3. Middle Class Investors

- **Liu Jingting (2016)** claims that as the middle class in developing countries rises in both income and social standing, more and more of its members will buy gold for both personal use and investment. This research shows that consumers' desire for gold is heavily impacted by their disposable income and their perception of

gold's benefits. Gold usage varies widely from place to country for a variety of cultural, institutional, and economic factors. According to the results, a decrease in gold consumption is related with a more sophisticated and diverse investment portfolio. The patterns of investment behavior of households in Nagpur with medium incomes were studied **Samudra, A., & Burghate, D. M., (2012).** The selection of this research topic is predicated on the hypothesis that economists, policymakers, and marketers have become increasingly interested in the growth of India's middle class. The Indian middle class has received a lot of attention because of all the untapped potential that exists in this income bracket. This research set out to do a few things: learn more about the investment goals and strategies of middle-income households; identify whether or not these households have seen an increase in their savings; and shed light on the factors that may have contributed to this. The age bracket to which the breadwinner belongs also plays a role in deciding which investment vehicle to pursue. The age of the breadwinner and the family's income are two factors that have a direct impact on investment preferences. To that end, the research team also wanted to see if the middle-class residents of Nagpur differed significantly in terms of age and income when it came to the investment approaches they favored.

4.   Research Gap

Consumers are more inclined to put their money into gold due to the fact that it is a safer and yields a much higher rate of return. They give the least preference to investing in stock and give the most preference to real estate investments. But on the contrary, research findings showed that consumers are willing to utilize gold for requirements connected to liquidity. Hence, there is an evidence gap in understanding the customer perception of Gold purchasers.

5.   Research Methods

According to **Haydam, N. E., and Steenkamp, P. (2021)**, the research process can be visualized as an onion with each layer representing a progressively more comprehensive step. The current study is a positivism approach which is deduced from previous studies on customer perception of gold. Owing to its nature the study is a mono method quantitative analysis which uses middle income gold customers as the participants of the study. Using the Kregcie morgan formula of Unknown population **Chaokromthong, K., and Sintao, N. (2021)** at 7.5% margin of error a sample of 181 middle income investors was considered viable. The researcher distributed 210 questionnaires and 181 responses were considered for the study after removing the Outliers. The responses were collected from Mathikere, Hebbal, R.T.Nagar, Yelahanka in North Bangalore and Cantonment, Shivajinagar, Malleswaram, Indiranagar from central Bangalore. A well-structured questionnaire was prepared to collect the response. The scale validity and reliability was affirmed using the master validity table by Gaskins. SPSS and AMOS software was used for data analysis.

6.   Results and Discussion
Demographic profile of the gold customers
Chart 1 –Demographic profile of the gold customers
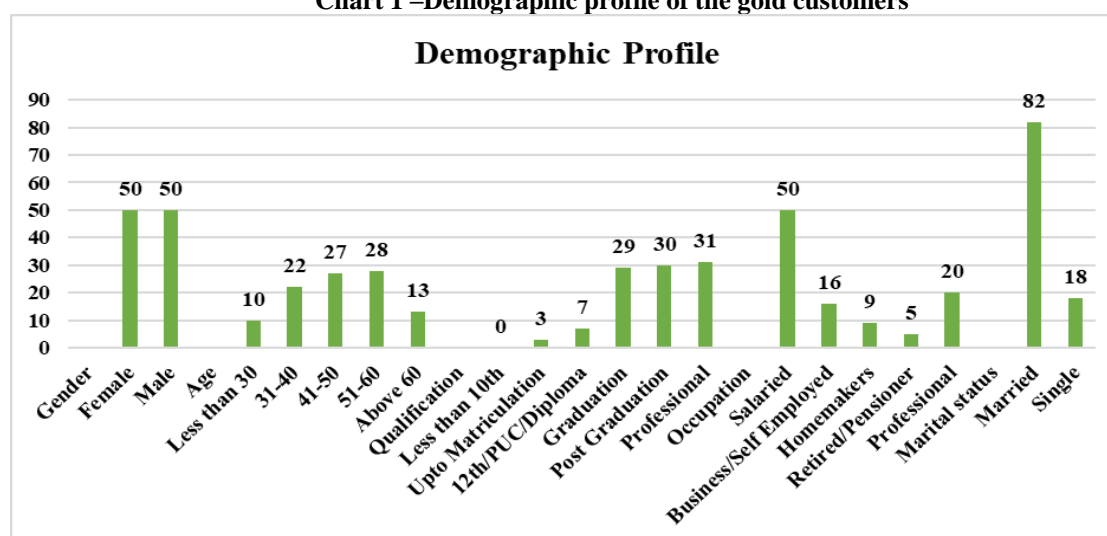
Gender plays a significant role in behavioral finance studies, The researcher aimed at reaching approximately equal number of Male and female gold customers 50% are male and 50% are female For the purpose of the current study, age was classified in 5 groups starting from less than 30 years to above 60 years. Age is significant indicator

of how investors behave while taking decisions based on the age cycle they currently belong to. The researcher aims to choose approximately equal number of respondents from both cities to avoid any bias in the study. 10% gold customers are less than 30 years of age. 22% belong to the age group of 31-40 years. 27% are in 41-50 years age bracket. Major proportion of the gold customers in the study belong to the age bracket of 51-60 years. 13 % gold customers are above 60 years of age. Qualification of the gold customers is also an important criterion in behavioural finance, especially when the study is related to sophisticated investments like e-gold investments. In the current study a large proportion 31% of respondents have completed professional courses followed by 30 % who are postgraduates. 29% have completed their graduation. A very small proportion of gold customers have completed lesser qualification. 50% gold customers are salaried, 20% are professionals. A small proportion of 16% are self-employed, 9% homemakers and 5% are retired/ Pensioners. Marital status is one of the important indicators of investment objective in Indian households, especially when it comes to gold. 18% are single and a majority of 82% gold customers is married.

Economic Profile of Gold customers
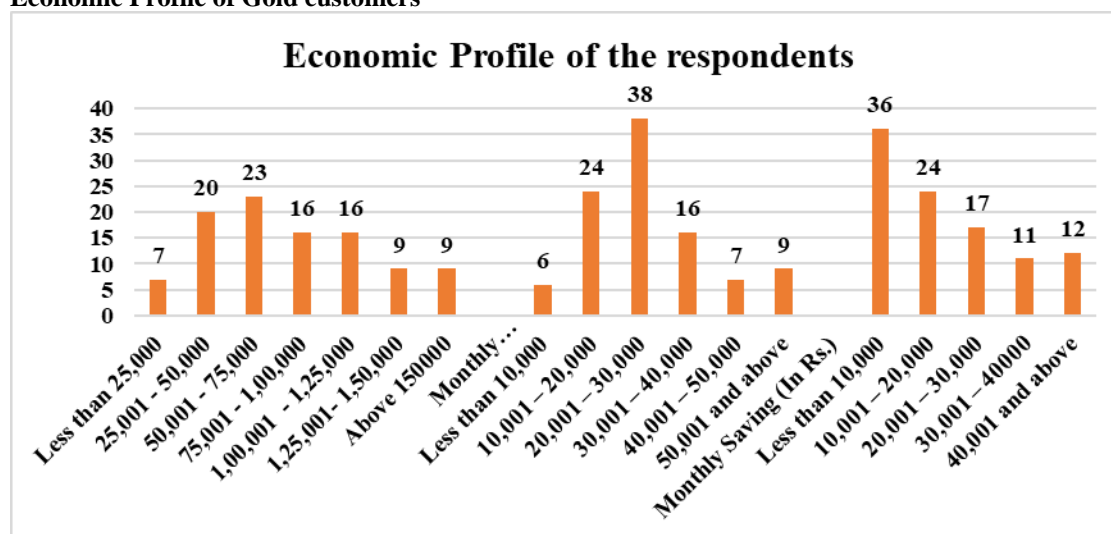
As specified in the research methodology, the current study is directed towards middle-income gold customers. 7% gold customers earn less than 25,000 a month and 20% earn between 25,000-50,000. 23% also earn between 50-75 thousand. 16% each of the respondents earn between 75 thousand to 1lakh and 1lakh to 1,25,000. A cumulative 18% earn above 1, 25,000. The expenditure per month of the gold customers shows that, 24% respondents spend about 10,000-20,000 . A majority of 38 % gold customers in spend 30,000-40,000 a month. 16% spend 30001-40,000 and 7% gold customers spend on a monthly basis abut 40,000-50000.   36% gold customers revealed that they had a current monthly saving of less than Rs.10,000 followed by 24% had a monthly saving of 10,000 to 20,000 . 17% gold customers in the study had savings between 20,001 to 30,000. 11% gold customers saved between 30,001-40,000 and 12% gold customers saved 40,000 ad above.

Customer perception of Gold investments
Objective of gold purchase - 36% Gold customers purchase Gold for both ornament and investment purpose. A majority of 64% purchase Gold only for investments purpose. Gold is one of the traditional metals and customers have inclination towards this metal. However, not in form of ornaments, investments in gold are made from long time. This could be due to the reason that Gold in hassle free and can purchased and sold anytime at the nearest locations and is an asset, which can be easily converted to liquid cash in times of need. The gold purchase in forms of Ornaments may attract making charges and some investors do not want to take those charges and prefer to invest in other forms of gold
Customer perception of gold price - 53% gold customers perceived that Price of Gold is high but acceptable in long run. 22.8 % expressed that gold rates are high. 13.8% investors felt gold rates are moderate and 10.5% felt gold rates are low. The customer perception of gold rate varies with the attitude and mind set of the customers. Those customers who think Gold is a very good investment option perceive the rates to be low. Those customers who look at the future values of gold perceive gold to be highly priced but acceptable in long run.
Customer perception on time of gold purchases - An enquiry into the Planning of gold purchases revealed that 45% gold customers in Bangalore city mainly look for opportunity for low price & purchase and 27.5% Plan monthly contributions and purchases of Gold. A small percentage 8% of gold customers align their gold purchases annually, 9.5% make half-yearly contributions & purchases and 6.8% make quarterly contributions & purchases.

7. Testing of Hypothesis

Motivating and resisting factors for purchase of gold among customers in Bangalore

Table 1 – KMO Bartletts statistics for Motivating and resisting factors for purchase of gold among middle income customers

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.806
Bartlett's Test of Sphericity	Approx. Chi-Square	2356.851
	df	78
	Sig.	0.000

Keyser, Meyer, and Olkin's (KMO) measure of sampling adequacy that compares the magnitudes of the measured correlation coefficients to the dimensions of the partial factor loadings. From the preceding table, it can be deduced that the KMO measure of sampling adequacy, which is equal to 0.806 , and Barlett's Test of Sphericity, which comes with a significance level of 5%, are statistically significant. It was found by chi-square analysis that the Chi-square value of the Bartlett test is 2356.851 with the significant value less than 0.05 and 78 degrees of freedom, which shows that correlation matrix, is not an identity matrix and that it looks to be factorable.

In the current model the communalities are between 0.900 and 0.500 indicating the items in the current model are within the acceptable range.

Table 2 – Total Variance explained Communalities for Motivating and resisting factors for purchase of gold among middle income customers

Total Variance Explained								
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.228	40.215	40.215	5.228	40.215	40.215	3.636	27.969	27.969
2	1.597	12.283	52.498	1.597	12.283	52.498	3.189	24.529	52.498
3	1.206	9.277	61.775						
4	0.907	6.979	68.755						
5	0.822	6.321	75.076						
6	0.703	5.410	80.486						
7	0.605	4.651	85.137						
8	0.548	4.213	89.350						
9	0.360	2.766	92.115						
10	0.322	2.479	94.595						
11	0.283	2.176	96.771						
12	0.221	1.700	98.471						
13	0.199	1.529	100.000						
Extraction Method: Principal Component Analysis.								

According to certain guidelines, the overall variation described by all components should be between 70% and 80%, some researchers opined that this could be unworkable in social science studies, where extracted variables usually describe just 50% to 60% of the variance. The total of squared loadings that has been removed accumulates to about 52.498 % of the original loadings. 13 items are classified into 2 components which are discovered while applying the approach of Factor Analysis, according to the results of the study.

Chart 2 – Scree Plot for Motivating and resisting factors for purchase of gold among middle income customers
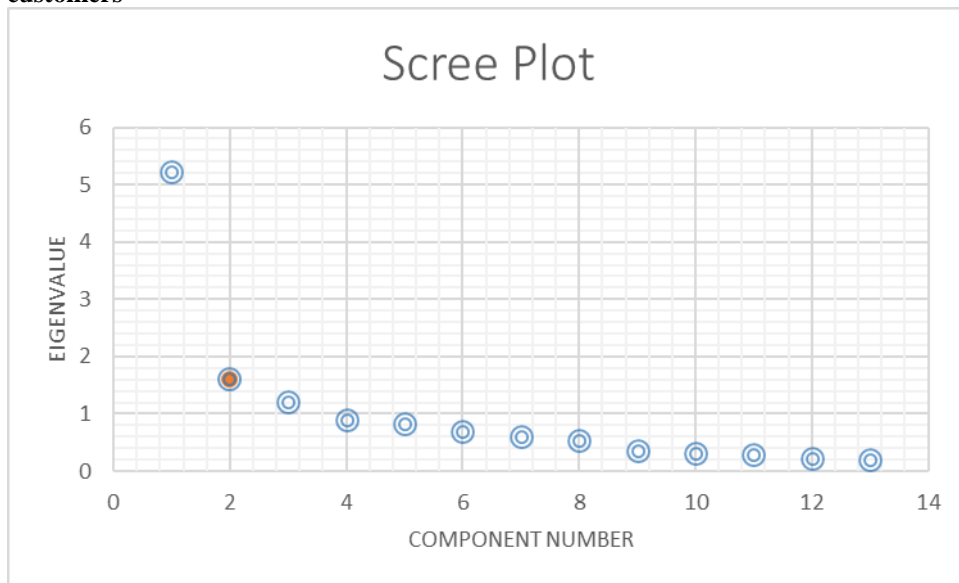
The first component will always have the biggest overall variance, and the final component will always have the lowest, so the most substantial reduction is visible in the 2nd component. Here is the point at which it may not be worthwhile to continue any farther with the part extraction. The list of 2 component is produced using the scree map.

Since the factor loadings for all components are good, none of the items were deleted. The number of initial items remain same throughout the study as a result of PCA. To make sure the assumptions of SEM Analysis are met scale reliability and validity are measured using the factor loadings obtained from rotated component matrix. The two components identified in the study are Motivating Factors (9) and resisting factors (4)

Step II - Confirmatory Factor Analysis
Once the PCA is completed, the identified items are then tested for validity using the confirmatory factor analysis – Extracting the standardised estimates and correlation between variables

Chart 3 - Inter item correlation between Motivating and resisting factors for purchase of gold among middle income customers
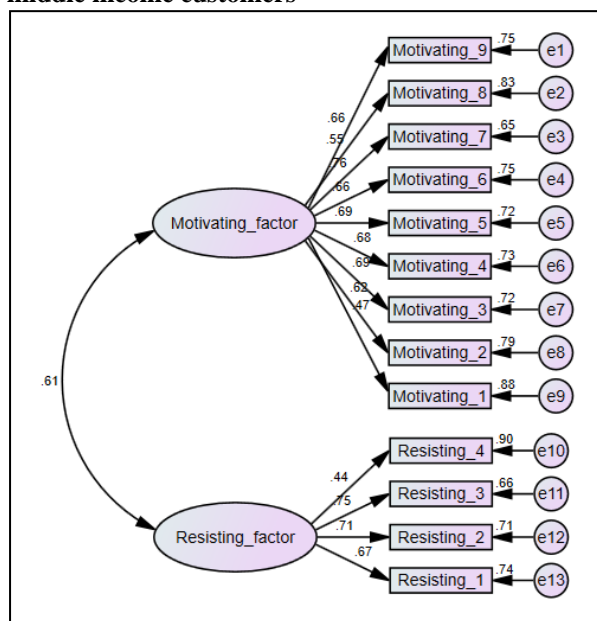
The above figure shows the inter item correlation between variables. Inter-item correlations investigate the degree to which the results of one item may be predicted by the results of all of the other items contained in a scale. It gives an analysis of the redundant nature of items: the degree to which individual items on a scale are evaluating the same subject matter

Table 3 – Correlation between constructs for Motivating and resisting factors for purchase of gold among middle income customers

			Estimate
Motivating_factor	<-->	Resisting_factor	0.608

The results of the correlation table show that there is a significant relationship (0.608) between each 2 Factors influencing purchase of Gold by middle income investors

Step III - Master validity

Since only two factors are involved, conducting master validity is not possible. Therefore, moving to the next step of running the model.

Step IV – Structural Equation Modelling

Table 4 – Model fit for Motivating and resisting factors for purchase of gold among middle income customers

Fit Indices	χ^2 (Chi-square)	df (Degrees of Freedom)	Chi-square/df (χ^2/df)	GFI (Goodness of Fit Index)	RMSEA (Root Mean Square Error of Approximation)
Actual Model Value	398.882	121	3.298	0.856	0.0312
Accepted value			< 3	> 0.90	< 0.10

In order to verify the scales used in the study, an effort to develop a 2-factor measurement model was undertaken, and a confirmatory factor analysis (CFA) was carried out in order to assess the measurement model. The goodness of fit index (GFI) and the root mean square error approximation were the fit indices that were used to evaluate the model's appropriateness for the data (RMSEA).

The results of the CFA showed that the model did a good job of fitting the data. The Chi-Square value was 398.882, and it had 121 degrees of freedom. This number was statistically significant, since the p value was 0.00. Its Goodness of Fit Index (GFI) is 0.856, which is less than the predicted Criteria, and its Root Mean Square Error Approximation (RMSEA) is 0.0312, which indicates that the model is getting close to the expected criteria of acceptable fitness. The Model that is displayed below is the graphical output of the proof that the model has been run, and the Model also displays the standardized estimates for the relationships between the variables.

Table 5 – Structural equation Model – Regression co-efficient for Motivating and resisting factors for purchase of gold among middle income customers

			Unstd Estimate	Std Estimate	P values
Motivating_9	<---	Motivating_factor	1	0.679	***
Motivating_8	<---	Motivating_factor	0.751	0.549	***
Motivating_7	<---	Motivating_factor	1.186	0.793	***
Motivating_6	<---	Motivating_factor	0.833	0.64	***
Motivating_5	<---	Motivating_factor	0.941	0.686	***
Motivating_4	<---	Motivating_factor	0.911	0.668	***
Motivating_3	<---	Motivating_factor	0.877	0.667	***
Motivating_2	<---	Motivating_factor	0.851	0.612	***
Motivating_1	<---	Motivating_factor	0.694	0.484	***
Resisting_4	<---	Resisting_factor	0.394	0.431	***
Resisting_3	<---	Resisting_factor	0.691	0.745	***
Resisting_2	<---	Resisting_factor	0.711	0.733	***
Resisting_1	<---	Resisting_factor	0.601	0.662	***
egold_investments	<---	Motivating_factor	0.283	0.067	***

| egold_investments | <--- | Resisting_factor | -0.102 | -0.106 | *** |

The impacts of the motivating factors and resisting factors to make e-gold investments are shown in the table above. The unstandardized regression estimates are presented in the first column of the table. These estimates show how the mean values of the respondents differ from one another. The standardized regression estimates are represented by the difference in the values of the respondents' standard deviation and are displayed in the second column of the table. The answer that this formula produces is a reflection of the amount of change that can be attributed to the independent variable in terms of the dependent variable.

- The factor with highest impact on gold purchases is Motivating factor with highest estimates (B=0.283,p=0.000) which is statistically significant. The results indicate that as Motivating factors of gold purchases increases by 1 the chances of purchasing gold increase by 28%.
- Resisting factor with a negative estimates (B= -0.102,p=0.000) which is statistically significant. The results indicate that as resisting factors increase by 1 the chances of purchasing in gold decrease by 10%.

Motivational variables exert a more pronounced influence on the decision-making process for the acquisition of gold compared to other types of metals among middle income customers. The primary reason for the perception of gold as a secure and reliable investment choice, particularly in periods characterized by economic instability, is from its status as a safe haven asset. Furthermore, the attractiveness and grandeur that are commonly linked to the ownership of gold also exert a substantial influence on persons' inclination to acquire it. The historical significance of gold, together with its cultural and symbolic value, enhances its attractiveness and renders it a favored option among several investors.

Motivating and resisting factors for purchase of gold among middle income customers in Bangalore is significant.

8. Conclusion

The primary objective of the present study is to gain insights into the customer impression about the acquisition of Gold. This study aims to analyze the impact of many aspects, including price, quality, and seller trustworthiness, on customers' decision-making processes while purchasing gold. Furthermore, this study aims to investigate the underlying factors that drive customers' inclinations towards acquiring gold, encompassing its utility as an investment, its ornamental value as jewelry, and its significance in cultural and traditional contexts. The outcomes of this research will enhance comprehension of customer behavior within the gold market and can be utilized by enterprises to enhance their marketing strategies and address customers' requirements and inclinations. The results of the study indicate that buyers have a preference for purchasing gold, driven by both ornamental and investment considerations. The clients also sent their observation that the price of gold is elevated, nevertheless they exhibit a preference for its acquisition owing to its deeply ingrained conventional attributes. Furthermore, the research revealed that clients frequently engage in the purchase of gold for cultural and traditional motives, exemplified by its utilization in weddings and religious events. Gold is regarded as a significant element in their cultural traditions, symbolizing riches and prosperity. This observation emphasizes the significance of gold beyond its financial worth and emphasizes the necessity of comprehending client motives within the gold market. As a result, enterprises have the ability to customize their marketing strategy in order to highlight not only the economic advantages of gold, but also its cultural and traditional importance, thereby accommodating the varied wants and preferences of clients. The study also examined the motivating and inhibiting elements influencing gold purchases, finding that customers generally report a stronger propensity towards the motivating aspects in their decision to purchase gold. This implies that comprehending client motives is vital for organizations to adeptly attract potential customers and surmount any reluctance they may exhibit towards acquiring gold. By elucidating the precise factors that attract customers to gold, businesses can enhance their ability to strategically align their products and services with these preferences, thereby augmenting their sales within the gold market. Furthermore, gaining insight into the underlying incentives driving gold acquisitions can aid enterprises in recognizing potential impediments or hurdles that could impede customers' gold purchases. This knowledge enables firms to effectively tackle and surmount these difficulties.

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The Use of Formative and Summative Assessment in Classroom

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1.   Introduction

Assessment is an integral component of the educational process, providing valuable insights into student learning and informing instructional decisions. Two primary types of assessment, formative and summative, serve distinct purposes and contribute to a comprehensive understanding of student progress. Formative assessment, conducted throughout the learning process, aims to identify student strengths and weaknesses, enabling teachers to adapt instruction accordingly. In contrast, summative assessment, typically administered at the end of a unit or course, evaluates student mastery of learning objectives. While both formative and summative assessment play crucial roles in education, their distinct characteristics and applications warrant careful consideration.

2.   Defining Formative and Summative Assessment

Formative Assessment

Formative assessment is an ongoing process of gathering and interpreting information about student learning throughout the learning process. It is primarily used to guide instruction and provide students with feedback to improve their understanding and performance. Formative assessment is characterized by its flexibility, informality, and focus on student progress.

Summative Assessment

Summative assessment, on the other hand, is a more formal evaluation of student learning conducted at the end of a unit, course, or program. It serves to measure student achievement against predetermined standards or benchmarks and provides evidence of what students have learned. Summative assessment is often used for grading, promotion, and accountability purposes

Definitions of Formative and Summative Assessment by Educationists

Prominent educationists have provided various definitions of formative and summative assessment, highlighting their distinct characteristics and purposes.

Definition of Various Educationist on Formative Assessment

- Black and Wiliam (1998) define formative assessment as "assessment for learning" that provides feedback to teachers and students during the learning process to improve instruction and student achievement.
- Brookhart (2011) describes formative assessment as a "continuous process" of gathering information about student learning to inform teaching and adjust instruction accordingly.
- Chappuis and Stiggins (2009) emphasize that formative assessment is a "purposeful" and "systematic" process that helps students identify their strengths and weaknesses and develop effective learning strategies.
- Heritage (2013) views formative assessment as a "collaborative" process between teachers and students, where both parties work together to improve learning outcomes.
- Wiliam (2007) underscores the importance of formative assessment in providing students with "high-quality feedback" that is timely, specific, and actionable, enabling them to make adjustments to their learning strategies.

Definitions of Various Educationist on Summative Assessment

Black and Wiliam (1998): "Assessment of learning: The process of gathering information to judge student understanding of the level of attainment, and of using this information
to plan the next stage of instruction"
Brookhart (2011): "A summary of student learning at a particular point in time" Chappuis and Stiggins (2009): "Assessment that focuses on what students know and can do at the end of an instructional period"

Heritage (2013): "Assessment that is used to measure student achievement against predetermined standards

Wiliam (2007): "Assessment that is used to provide evidence of student learning at the end of an instructional period"

3.   Needs for Formative and Summative Assessment

Both formative and summative assessment are necessary for effective teaching and learning. Formative assessment addresses the immediate needs of students by providing timely feedback and guidance, while summative assessment provides a snapshot of overall achievement and informs decisions about grading, promotion, and accountability.

Methods of Formative and Summative Assessment
A variety of methods can be employed for both formative and summative assessment. Formative assessment methods often involve informal techniques such as:
● Exit tickets: Brief questions or tasks given at the end of a lesson to assess understanding
● Observations: Watching students work individually or in groups to identify strengths and areas for improvement
● Quizzes and practice problems: Assessing students' grasp of specific concepts or skills
● Self-assessments: Providing students with opportunities to reflect on their learning and identify their own progress

Summative assessment methods typically involve more formal and structured approaches such as:
● Unit exams or tests: Measuring students' overall understanding of a topic or concept
● Final projects or presentations: Assessing students' ability to apply their knowledge and skills to a culminating task
● Standardized tests: Evaluating students' performance against external benchmarks

4.   Importance of Formative and Summative Assessment

Formative and summative assessment play crucial roles in enhancing student learning and improving teaching effectiveness. Formative assessment promotes active learning, deep understanding, and metacognitive skills development. Summative assessment provides evidence of student achievement, informs instructional decisions, and prepares students for high-stakes assessments.

5.   Advantages and Limitations of Formative and Summative Assessment

Formative assessment offers several advantages, including its ability to:
● Provide timely and specific feedback
● Promote student engagement and motivation
● Identify individual student needs and misconceptions
● Guide instructional decisions and adapt teaching strategies

However, formative assessment may also have limitations, such as:
● Potentially increasing student anxiety
● Requiring significant teacher time and effort
● Lacking standardized procedures and scoring

Summative assessment also presents advantages, including its ability to:
● Measure overall student achievement
● Provide evidence of learning for grading and promotion
● Inform program evaluation and improvement
However, summative assessment may also have limitations, such as:

● Not providing immediate feedback for learning
● Potentially causing stress and anxiety in students
● Overemphasizing rote memorization and test-taking strategies

6.   Conclusion

Formative and summative assessment are indispensable tools for effective teaching and learning. When used judiciously and in conjunction, they can provide comprehensive picture of student progress, inform instructional decisions, and promote student achievement. By leveraging the strengths of both approaches, educators can create a dynamic learning.

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Enhancing Road Safety: A Survey of Cost-Effective Machine Learning-Based Collision Prediction & Detection Methods

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ABSTRACT:

Today, many people die and suffer life-threatening injuries because of fatal car accidents. Sometimes people are alive, but due to delays in treatment, their lives can't be saved. To a certain extent, automatic car accident detection can reduce the time it takes for an automobile to arrive at the site and for rescue personnel to arrive, enhancing both the effectiveness of rescue efforts and the level of traffic safety. On this survey paper, we suggested a different technique to convey the message of the victim, like sending information to the nearby emergency service center and an alert alarm system ringing when two or more cars collided with each other, like a face-based drowsiness detection system, an ROI- based sleepiness detection system that uses the eyes and mouth and a smartphone notification system with the help of the IOT (Internet of Things) and GPS and GSM-based systems. Here are the most common and beneficial techniques for people. Some of them are cost-effective and easy to install. Based on these technologies, we can save many lives. That's why researchers are keener to develop these divides for the benefit of society because most of the unwanted deaths occur just because of road safety.

INDEX TERMS: Collision Prediction, Machine Learning, AI, Road Safety, GPS, CVIS, Deep Learning.

1.   INTRODUCTION:

India has the 2nd largest road network, with a total road length of over 62.1 lakh kilometers. Every year, approximately in India 1.5 lakh people die in road accidents. Every day, there are 1130 accidents, 422 deaths, and 18 deaths every hour. [1] As per the World Health Organization (WHO), every year, 1.3 million lives are lost worldwide as a result of traffic accidents. [2] The number of deaths in road accidents in the 2018–2022 periods stood at (4,303), (4,440), (2,979), (3,429), and (4,317), respectively. Approximately (3, 84,448) people were injured in road accidents last year. However, it has frequently been noted that the ambulance's late arrival at the scene of the accident contributed to the fatalities that resulted from the collision. Some accidents occur due to traffic collisions, drowsiness, drunk driving, and fatigue. So, we need quick treatment for the victim. Therefore, creating an effective accident detection mechanism is crucial.

Within this survey study, we evaluate a few methods for detecting traffic accidents and offering appropriate solutions. In these techniques, when an accident occurs, a system is employed to automatically detect it in a significantly shorter length of time and convey the essential details to the emergency center. These techniques are: CVIS (Cooperative Vehicle Infrastructure), DBD (Driving Behavior Detection), GPS (Global System for Mobile) and GPS (Goble Position System), ABE (Automatic Emergency Braking), MEN (Main Edge Node) and LEN (Local Edge Node), etc. In this survey paper, here is a brief overview of automatic car accident detection. This survey paper basically includes methodology, results and discussion, conclusion, conclusion and future work.

2.   LITERATURE SURVEY

The car accident detection and notification techniques are a difficult and very serious issue these days. That's why many researchers have focused on them. Many different methods are introduced to detect car accidents and crashes to save the lives of people. In this literature survey, we will discuss different types of methods:

A.   CVIS Based Car Accident Detection Method :

In this study, proposed a method for automatically identifying car accidents based on computer vision and cooperative vehicle infrastructure system (CVIS).First, a novel picture dataset called CAD- CVIS is created to increase the accuracy of employing intelligent roadside to detect accidents. Particularly, CAD-CVIS provide a verity of accident kinds, weather conditions, and accidents sites, which can improve the capacity of accident

detection algorithms to adapt to changing traffic conditions. Second, using CAD-CVIS and the deep neural network model YOLO- CA deep learning techniques for accident detection to improve the model's performance at detecting small objects, we use multi-scale feature fusion (MSFF) and loss functions with dynamic weights. The result of our experiment study, which assesses the effectiveness of YOLO-CA for detecting car accidents, demonstrates that with an average precision of 90.02%, our suggested approach may identify a car collision in 0.0461 seconds (21.6FPS). We also contrast YOLO-CA with various object identification models, and the outcomes show that the overall performance improves over other models in terms of accuracy and responsiveness.

B .Driver Drowsiness Detection Using Smart Edges in Mobile Crowdsourcing

In this paper, a smart edge computing-based two-stage driver drowsiness detection system is proposed. Without disclosing the data, in the car mobile devices are utilized to record and analyses the driver's current state. Where the sleepiness is validated when the smart edge is used as a decision-maker, the mobile client's information on the driver status and the actual car path match. Our approach is based on: A) a distributed edge architecture with two hierarchical levels, the main of which is to better control the region of the internet: edge nodes (MEN) and local edge nodes (LEN).And B) a data fusion technique. Offloading technique that considers:

- Facial formulation technology for drowsy driving detection with the help of the CNN model.
- The YOLOv5 algorithm is used for worldwide car path detection using acceleration readings .[22]
- Ultimately, LSTM a two- layer algorithm is used to diagnose drowsiness based on both local detection and global detection.

The suggested framework has a sleepiness observation accuracy of 97.7% on average.

C. IOT-assisted AI-enabled Drowsiness Detection framework:

In view of this paper, driving while intoxicated, weariness, and being drowsy are the three main factors that result in accidents and fatalities. In this study, we present a computer vision-based, real-time, Internet-of- Things-assisted system for tracking driver tiredness based on eye aspect ratio (EAR). An alert error is produced when the EAR ratio falls below 0. There is text to speech converter is used; vibrating seat belts notify the driver, and the information is transferred to a cloud server. If, after the warning mechanism, the driver doesn't get up or doesn't get enough rest for more than two seconds, the automobile may accelerate more quickly. Paraphrase without limits lowered to stop the mishap. Images can now be improved using a machine learning model and a camera without infrared technology. Without losing the ability to be seen well during both sunset and sunrise, testing on a Raspberry Pi 4B [23] graphics processing unit computer with several test scenarios involving various subjects confirms the effectiveness of the established model. The suggested method has thereby identified driver fatigue, increased awareness, and avoided accidents.

D. Smart Brake Control and Car Accident Prevention and Detection System Based On IOT:

One of the most devastating events is thought to be automobile accidents. Even though there are numerous causes for car accidents, the majority of incidents are caused by the unawareness and uncontrolled speed of the motorist. And it appears to be difficult due to the lack of information arrive at the scene of the crash in time. As a remedy, the development of technology based on the Internet of Things (IOT) helps lessen accidents. This study describes a smart system that alerts the public, restricts vehicle speed, and issues warnings in it subsequently after an incident. This system observes the distance between moving cars and stationary barriers. Using a distance sensor up front. The driver will receive a control alert. The pace will automatically slow down when a critical distance is reached. When there is an accident due to a hazard, the responsible person will receive an alert with the vehicle's information.

E. Car Accident Detection and Notification System Using Smartphones:

Only lately have improvements in smartphone processing power and sensor technology made it possible to utilize cell phones to detect road accidents. Most accident detection solutions for smartphones rely on the high the smartphone's GPS receiver was used to extract the vehicle's speed, and the G-force measurement was taken from the accelerometer sensor on the smartphone to identify an accident. According to numerous references, 90% of all traffic accidents on the road happen when a car is moving slowly. Considering this, in addition to high-speed collision detection, the article focused on the detection of low-speed auto accidents. The biggest challenge for

low-speed travel is determining whether a user is inside or outside of a car, walking, or otherwise, which can help prevent accidents running quite slowly. In this work, a proposed method that distinguishes between the speed fluctuation of a low-speed vehicle and a walking or slowly moving person is used to reduce the impact of this obstacle. The suggested technology is divided into two phases:

1. Detection Phase (used to identify car accidents at low and high speeds) after an accident is reported.

2. Notification Phase (used to send specific information to the emergency response for quick recovery) such as pictures, videos, the location of the accident, etc. The system underwent practical testing in a real-world simulated situation, and it performed admirably.

F. Investigation of the ABE Key Parameter for Making Two-Wheeler Collision Safety Better using Comprehensive Traffic Accident Data:

Automatic Emergency Braking (AEB) systems are crucial for preventing traffic accidents and reducing impact force, which raises the level of traffic safety. However, the focus of current AEB system research is mostly on how to prevent vehicle-to – vehicle and vehicle-to-pedestrian collisions. In the study of this article, the result of three important factors in the Chain-In-Depth Accident Study (CIDAS) database was based on cases of car-to-two-wheeler crashes.[24] Brake advance time, braking deceleration, the AEB system, and studying the detection window, accident frequency, and severity through virtual experimentation and accident reconstruction. The result indicates that the AEB System's 180-degree theoretical optimal detection range for car and two-wheeler collisions requires 35 meters. Furthermore, due to the present possible best detection range of 120 degrees, the braking advance time is 1s, and the detection is 35 meters away. The installation of an AEB system can avoid 22.3% of two- wheeler crash accidents. While this is happening, the average collision speed of the vehicle in the inevitable accidents drops from 33.93 to 21.34 km/h, effectively reducing the collision strengths. The study's findings may be useful to automakers, and the detection radar was chosen by the manufacturers of AEB hardware. Additionally, they can provide concepts and information to help draft pertinent AEB rules and promote future development of other driver assistance systems, such as AEB.

3.   METHODOLOGY

As mentioned above, the approached data collects all the important factors of a car accident detection system. Here are four to five methods to identify car crashes and accidents. In this paper, the most popular techniques are given below:

a.   A car accident detection system based on CAD- CVIS:
CAD (computer-aided design) and CVIS (cooperativevehicle infrastructure system) are advanced technologies designed to enhance road safety and emergency response. Here's a brief overview of how they work. A CAD system is used in a car accident detection system toreceive alerts from various sources. [13]

Data Collection and Annotation:
The two main difficulties in gathering information on auto accidents are:

Access: Data from roadside traffic cameras is frequently difficult to obtain. Additionally, the transportation administration frequently does not makeits accident statistics available for public use.

Fig 1: The CAD-CVIS Dataset's Data Collection and Annotation
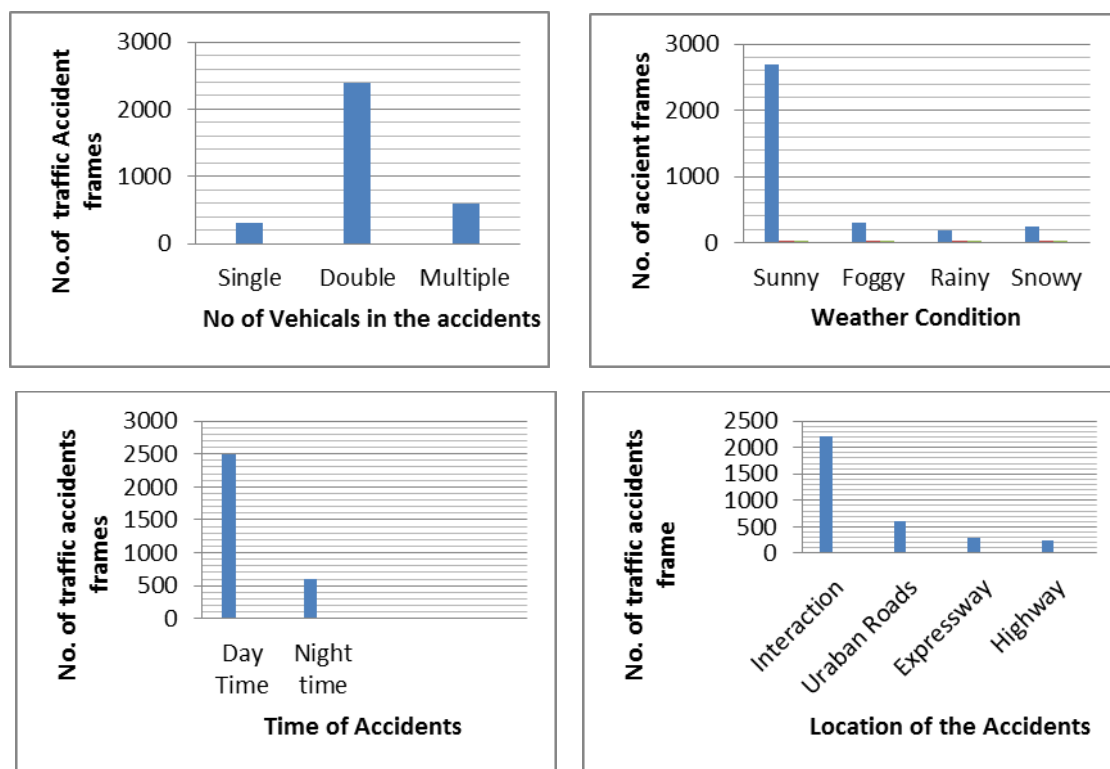
Fig 2: Different Indexes Are Used TO Categorize the Number of Accident Frames in CAD-CVIS (A) Weather (B) Accident (C) Time (D) Site of the accident. Due to a variety of legal factors.

Weirdness: Traffic collisions, when compared to typical traffic circumstances, are uncommon on the roads. In this work, we attempt to use video-sharing websites as a resource to search for films and photographs, including those of car accidents. Such as a documentary or news report. We only select the videos and photos taken from a traffic camera in order to increase the applicability of our suggested strategy to roadside edge devices CCTV images. [10]

By following the processes above, we are able to get 633 scenes of auto accidents, 3255 accident key frames, and 225206 regular frames. Additionally, only a minor portion of the scenario is devoted to the vehicle crash and the frame of each accident. Using Labellmg [11], we annotate images. The precise location of the collision in each frame improves the precision of the accident location. Due to its high accuracy, send an emergency message to all the vehicles in the same way to increase efficiency and lessen the impact of the disaster on the moving automobiles going the other way. The entire figure depicts the procedures involved in data gathering and annotation.

b. car accident prediction based on drowsiness detection in mobile:

The driver's side is where the local sleepiness detection is accomplished, and the edge side is where the drowsiness confirmation steps are accomplished.

Face- Based Drowsiness detection approach:

The first method of detecting tiredness employs facial features taken from the entire face. Five frames per second (FPS) image frames taken from movies are provided to the model during training in two scenarios: The raw data used to train the model without using facial detection frame photographs in one scenario method for cropping the face's area of internet (ROI). The second scenario investigates cropping approaches using facial detection. Before supplying the data to the face ROI from the frame model, there are examples for the input data in both circumstances. Figure 1: To identify the default dib face detector, cut the face area from the frame and use it as a source for the example. The VGG16 model, which was previously on the Image Net dataset, is used to create the face-based sleepiness detector.[12-25]

The VGG16 model's pre-trained convolutional layer is first frozen, and then the final entire layer is added .The frame using form the retrieved frames from the FC layer, videos from the NTHU dataset to prevent overfitting the model, the complete layer was followed by a dropout layer. Added to the FC and output were the L2 regularization layers. There are fewer trainable parameters now. A reduction of 1,180,161 parameters from 15,894,849 to pre-trained VGG16 network layer has been frozen, which shortened the training period and applied the deep VGG16 architecture.[26-32]
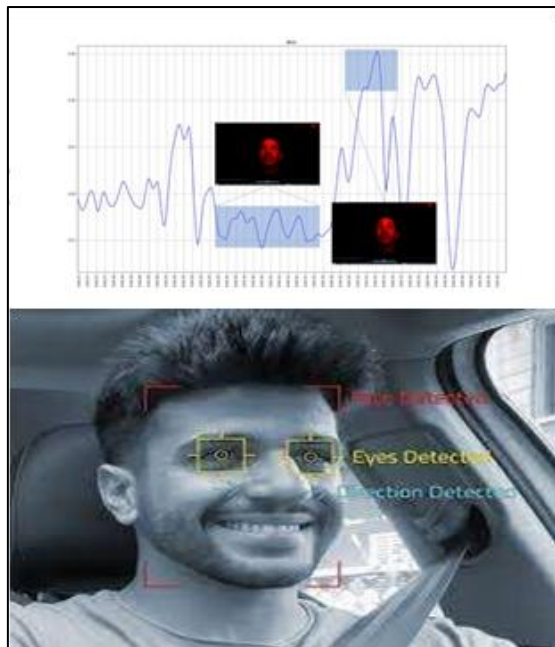
Fig 3: Input data sample for the Face–Based Drowsiness Detection Model

Approach for Detecting Drowsiness Using Eye And Mouth ROI:

A second method that makes use of features related to the eye and mouth on the face will further enhance the outcomes of the driver sleepiness detection implemented on the worker nodes. An area of interest is suggested. First, a pre-processing script is applied to the driver's video recording, where picture frames at 5 FPS are removed. The face and eye ROI are cut from the picture and given simultaneously to two classifiers.

Fig 4: Input data sample for the eye ROI classification model

Mouth and Eye, the only eye that is closest to the use of a camera, is thought to lessen computational detection sample of input data for the categorization model of the ocular ROI are shown in fig 1.Time without impacting the effectiveness of the model. An eye that classifier outputs one after receiving both the input and output of the eye ROI fall into one of two categories: closed or open eyes. The face ROI serves as the mouth classifier's input; its output is the yawn and normal classes. The degree of tiredness of the driver is assessed. The two classifiers' frame output tells the driver if his eye is closed and if he is yawning. He's yawning, he's drowsy, and he is regarded as typical. The classifier for eyes is implemented using a sample of the input and the CNN model (Fig 2). It depicts the data that was utilized to train the classification.[33-40]

B. Car Accident Detection Based on an IOT-Assisted AI- Enabled Drowsiness Detection Framework:

Much of the earlier research in this area has concentrated on behavioral data to noninvasively identify tiredness, blink frequently, head tilt, expression, yawning and other behavioral indicators. Eye closure rate is one sign of human fatigue. Driving for long periods of time, especially while intoxicated, can be stressful and exhausting, making drivers listless and even asleep.
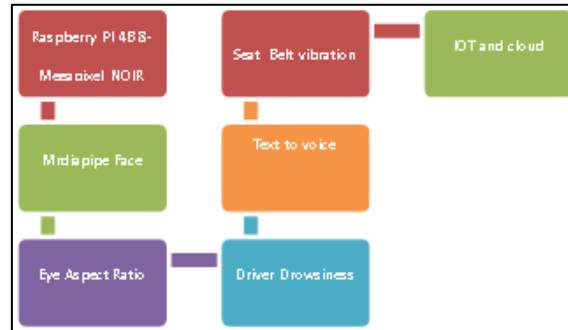
Fig5: Mesh and EAR are Faced with The Sleepiness Detection Workflow Employing media pipelines.

To address this issue, researchers created a technique for drowsy drivers, notifying the situation to the IOT cloud platform, and to produce the customer voice message to take corrective action, converting text to voice is done using face mesh from Media pipe and from this, the results of the EAR calculation are applied. Our aim is to produce software that is trustworthy and easy to use that can detect when a user's eyes have issued a warning and remain closed longer than usual. Fig1. Display the processes that make up the drowsiness detection process. Our objective is to develop dependable and understandable software that can recognize when a user's eyes have been closed for a prolonged period and issue a warning. Fig. 1 displays the processes that make up the drowsiness detection process.

An 8-megapixel No Infrared (NOIR) camera that produced flawless photos of things in low-light indoor settings was used to record the real-time films in Fig. 1. The produced model can be used to create a system that detects drivers sleeping by keeping track of how long their eyes are closed. Research methods include the EAR method for assessing ocular state and health. The subsequent graph demonstrates the utilization of several EAR points throughout the phases of training and development.

$$EAR = \frac{\|P_2 - P_6\| + \|P_3 - P_5\|}{2\|P_1 - P_4\|}$$

$$EAR = 0$$
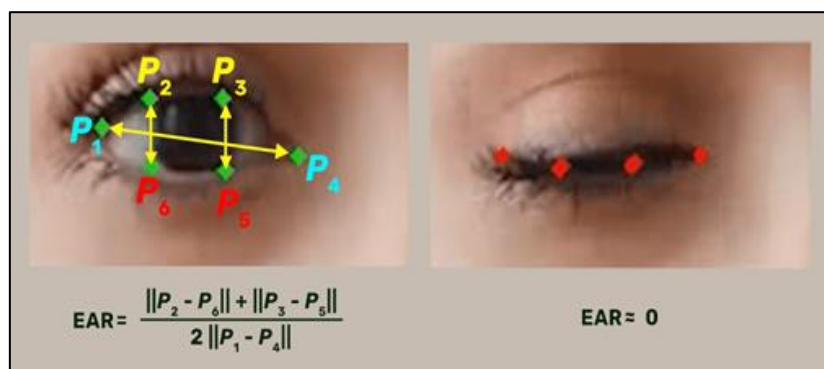
Fig 6: Representation of EAR

The EAR Right (EARR) and EAR Left (EARL) values in fig.2 are obtained by using six coordinates close to the eyes.

The eye aspect ratio (EAR) of the eyes does not vary when they are opened, but it quickly lowers to virtually nil when they are closed. Blink duration-based accident prevention system, and their system exhibited good accuracy on a dataset of yawning. While some researchers have indicated that a 0.2 threshold is ideal for the current attempt, they used an EAR threshold of 0.3. An EAR threshold was selected for the investigation based on real-time trials between 0.2 and 0.5 conducted on a wide group of test subjects in a range of circumstances and ages.

A seat belt vibration created with TTGO IOT hardware can be shown in Figure 3, sending information to a Raspberry Pi over Bluetooth. The vibrating belt-like gadget cautions drivers if they begin to fall asleep at the wheel. The impact of a seat belt vibrator is substantial. Since it lessens the possibility of accidents brought on by falling drivers driving while unconscious, according to studies, by utilizing a seat belt vibrator, you are 99% more likely to have an accident. This device is fantastic for preventing weariness on lengthy journeys or when driving at night. It helps maintain the alertness and focus of drivers; it lessens the possibility of accident brought on by tried drivers it is a security lifesaver.[40-47]
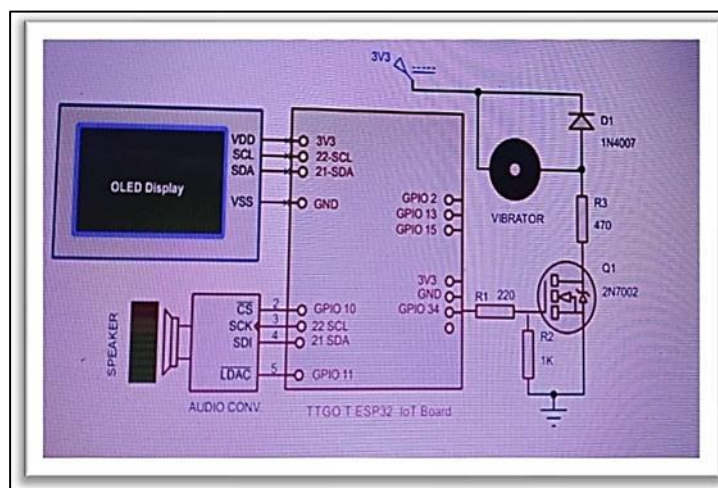
Fig 7: TTGO using Seat Belt Alert Mechanism TESP32 IOT Module

4.   RESULT AND DISCUSSION

In this survey paper, we will discuss the collective knowledge and methods of the different types of car accident detection systems and how they can be used and operated. The Smart Edge-Based Driver Drowsiness Detection in Mobile Crowdsourcing and the Inter-Of-Things-Assisted Artificial Intelligence-Enabled Drowsiness Detection Framework have less timing than car accident detection systems, have more accuracy than others, all are cost-effective, and we can use them easily just by installing them on a mobile device and in a car.

All the technology and methods are good based on their work. But the thing is which is more suitable for the public and more effective? With the help of these technologies, many lives will be saved, and the disabled population will decrease. According to the 2023 report of WHO (World Health Organization), an estimate of 1.3 billion people experiences significant disability. It represents 16% of the world's population.

5.   CONCLUSION AND FUTURE PLANS

In conclusion, our survey paper has explored various cost-effective machine learning-based collision prediction and detection methods aimed at enhancing road safety. The alarming statistics of road accidents and their grave consequences, including loss of life and delayed medical attention, underscore the urgent need for efficient accident detection systems. We have reviewed methods such as CVIS, drowsiness detection systems, IOT-assisted solutions, and smart brake control, each offering its own unique approach to accident detection. Our analysis has revealed that Smart Edge- Based Driver Drowsiness Detection and IOT-Assisted AI-Enabled Drowsiness Detection Frameworks have demonstrated remarkable accuracy and speed in accident detection while remaining cost-effective. These technologies hold significant promise for saving lives and reducing the overall impact of road accidents. While all the methods explored in this survey have their merits, advancements in AI, IOT, and edge computing are leading the way toward more effective and accessible accident detection systems. The deployment of these technologies, combined with further research and development, holds the potential to mitigate the devastating consequences of road accidents and contribute to a safer and more secure transportation ecosystem. As we move forward, we encourage ongoing collaboration between researchers, industry stakeholders, and policymakers to accelerate the implementation of these life-saving innovations and ultimately reduce the global toll of road accidents.

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A Comparative Study of Esther and Ruth in Bible: A Feminist Perspective

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1.   FEMINISM

Feminism is a social, political, and cultural movement that advocates for the equal rights and opportunities of all genders, with a particular focus on addressing historical and ongoing discrimination against women. It seeks to challenge and change the unequal power dynamics and gender-based stereotypes that have existed in societies for centuries.

2.   KEY ASPECTS AND GOALS OF FEMINISM:

Gender Equality: Feminism aims to achieve gender equality in all aspects of life, including political, economic, social, and cultural spheres. This means advocating for equal pay for equal work, equal access to education and healthcare, and equal representation in leadership roles and decision-making processes.

Women's Rights: Historically, feminism has focused on addressing women's rights, such as the right to vote, access to reproductive healthcare, and freedom from violence and harassment.

Intersectionality: Contemporary feminism recognizes the importance of intersectionality, which means acknowledging that people's experiences of discrimination and privilege are shaped by their intersecting identities, including race, class, sexual orientation, disability, and more. Intersectional feminism seeks to address the unique challenges faced by individuals with multiple marginalized identities.

Challenging Patriarchy: Feminism critiques and challenges patriarchal systems and structures that uphold male dominance and control over women's lives. It seeks to dismantle these systems to create a more equitable society.

Empowerment: Feminism encourages women and marginalized groups to assert their agency, self-determination, and self-confidence. It promotes the idea that individuals should have the freedom to make choices about their lives without being limited by societal expectations or gender norms.

Social Change: Feminism often involves activism and advocacy to bring about social change. This can include organizing protests, lobbying for policy changes, and raising awareness about issues affecting women and marginalized groups.

Feminism has evolved over time and encompasses a diverse range of perspectives and approaches. There are different waves of feminism, each with its own historical context and priorities. Some well-known types of feminism include liberal feminism, radical feminism, socialist feminism, and eco-feminism, among others. It's important to note that feminism is not a monolithic movement, and not all feminists agree on every issue or approach. However, at its core, feminism seeks to challenge and change the status quo to create a more just and equitable society for all genders.

3.   TYPES OF FEMINISM

Feminism is a diverse and evolving movement with various branches or types of feminism that have emerged over time. These different types of feminism often focus on distinct aspects of gender inequality and employ different strategies for addressing them.

Liberal Feminism: Liberal feminism is one of the oldest and most mainstream forms of feminism. It advocates for gender equality within existing societal structures and legal systems. Liberal feminists seek equal rights and opportunities for women, particularly in areas like education, employment, and politics. They often work within established political and legal frameworks to achieve these goals.

Radical Feminism: Radical feminism views patriarchy as the root cause of women's oppression and seeks to completely overthrow or radically transform existing societal structures. Radical feminists argue that patriarchy is so deeply ingrained that achieving gender equality requires a fundamental restructuring of society. They focus on issues like sexual liberation, reproductive rights, and combating violence against women.

Black Feminism: Black feminism, also known as womanism, specifically addresses the unique challenges faced by Black women. It highlights the intersectionality of race and gender and recognizes that mainstream feminism has often excluded the experiences and struggles of women of color. Prominent Black feminists like Audre Lorde and bell hooks have contributed significantly to this perspective.

Intersectional Feminism: Intersectional feminism builds on the idea that people's experiences of oppression and privilege are shaped by multiple intersecting identities, including race, class, sexuality, disability, and more. It emphasizes the importance of considering these intersections when addressing gender inequality and social justice issues.

Socialist Feminism: Socialist feminism argues that capitalism and patriarchy are interconnected systems that perpetuate gender inequality. It seeks to address both economic and gender-based disparities by advocating for a more equitable distribution of resources and power. Socialist feminists often focus on issues related to labor, economic justice, and social welfare.

Queer Feminism: Queer feminism challenges traditional notions of gender and sexuality. It emphasizes the inclusion of LGBTQ+ perspectives within the feminist movement and advocates for the dismantling of heteronormative and cisnormative structures that marginalize non-binary, transgender, and queer individuals.

Ecofeminism: Ecofeminism explores the connections between environmental and gender oppression. It suggests that both the exploitation of women and the exploitation of nature are rooted in a similar patriarchal mindset that objectifies and subjugates. Ecofeminists advocate for environmental sustainability and gender equality as intertwined goals.

Postcolonial Feminism: Postcolonial feminism examines how gender inequality is intersected with the legacy of colonialism and imperialism. It addresses issues such as the effects of Western feminism on non-Western societies, cultural imperialism, and the experiences of women in postcolonial contexts.

Transfeminism: Transfeminism focuses on the rights and issues of transgender and gender non-conforming individuals within the feminist movement. It seeks to include transgender perspectives and experiences and advocates for gender self-determination and transgender rights.

It's important to note that these categories are not mutually exclusive, and many feminists identify with multiple types or incorporate elements from different perspectives into their activism. Additionally, feminism is a dynamic and evolving field, and new branches and ideas continue to emerge as societal understanding of gender and inequality evolves.

4.   WAVES OF FEMINISM

Feminism has historically been divided into different "waves," each characterized by distinct goals, strategies, and concerns. These waves represent the evolving nature of the feminist movement over time. While the categorization of feminism into waves is a useful framework for understanding its history, it's important to recognize that these divisions are somewhat arbitrary, and the feminist movement is ongoing and dynamic. Here are the three main waves of feminism, along with a brief description of each:

First Wave Feminism (Late 19th and Early 20th Centuries):

Primary Focus: The first wave of feminism primarily focused on securing legal rights for women, particularly suffrage (the right to vote). It also addressed issues like property rights, access to education, and employment opportunities.

Key Achievements: The first wave of feminism culminated in women's suffrage victories in various countries. In the United States, the 19th Amendment to the Constitution (1920) granted women the right to vote.

Prominent Figures: Susan B. Anthony, Elizabeth Cady Stanton, Emmeline Pankhurst, and Alice Paul, among others.

5.   SECOND WAVE FEMINISM (1960S TO 1980S)

Primary Focus: The second wave of feminism emerged in the 1960s and 1970s and expanded its goals beyond legal rights to address issues of social and cultural inequality. It tackled issues such as reproductive rights, workplace discrimination, sexual liberation, and the dismantling of traditional gender roles.

Key Achievements: Second-wave feminists played a pivotal role in pushing for reproductive rights, including access to birth control and the landmark Supreme Court case Roe v. Wade (1973). They also raised awareness about issues like sexual harassment and domestic violence.

Prominent Figures: Betty Friedan, Gloria Steinem, bell hooks, Audre Lorde, and Germaine Greer, among others.

6. THIRD WAVE FEMINISM (1990S TO PRESENT)

Primary Focus: The third wave of feminism emerged in the 1990s and focuses on diversity and intersectionality. It recognizes that women's experiences are shaped by factors such as race, class, sexuality, and gender identity. Third-wave feminists advocate for individual empowerment, body positivity, and a broad range of social justice issues.

Key Themes: Intersectionality, sex positivity, challenging beauty standards, LGBTQ+ rights, and the recognition of diverse feminist voices and experiences.

Prominent Figures: Kimberlé Crenshaw, Judith Butler, Chimamanda Ngozi Adichie, and Roxane Gay, among others.

It's important to note that the categorization into waves doesn't capture all the complexities and nuances of the feminist movement. Additionally, there are ongoing debates about whether we are currently in a fourth wave of feminism, marked by digital activism and a renewed focus on issues like sexual harassment and gender violence.

Feminism continues to evolve and adapt to contemporary issues and challenges, with new generations of feminists addressing emerging concerns and advocating for gender equality and social justice in a changing world.

7. SUMMARY OF RUTH IN BIBLE

Ruth is one of the books in the Old Testament of the Bible, and it tells the story of a woman named Ruth and her journey of faith, loyalty, and redemption.

The story is set during the time of the judges in ancient Israel and begins with a woman named Naomi, her husband Elimelech, and their two sons, who leave Bethlehem during a famine and settle in the land of Moab. Tragically, Elimelech dies, and Naomi's sons marry Moabite women, one of whom is Ruth. However, both of Naomi's sons also die, leaving her a widow with her two daughters-in-law.

Upon hearing that the famine in Bethlehem has ended, Naomi decides to return to her homeland, and she encourages her daughters-in-law to stay in Moab and remarry. Orpah chooses to stay, but Ruth is determined to stay with Naomi and makes a famous vow: "Where you go, I will go; where you lodge, I will lodge; your people shall be my people, and your God my God" (Ruth 1:16).

So, Ruth accompanies Naomi back to Bethlehem, where they face challenges as widows without means of support. Ruth gleans in the fields of Boaz, a wealthy landowner who is related to Naomi's family. Boaz shows kindness to Ruth and ultimately redeems her, marrying her to continue the family lineage of Naomi and Elimelech.

Ruth and Boaz have a son named Obed, who becomes the grandfather of King David. The Book of Ruth is often seen as a story of loyalty, faithfulness, and the role of women in the biblical narrative. It highlights the theme of God's providence and care for those who are faithful.

The Book of Ruth in the Bible tells the story of Ruth's loyalty to her mother-in-law, Naomi, her marriage to Boaz, and their role in the lineage leading to King David. It emphasizes themes of faithfulness, kindness, and God's providence in the lives of ordinary people.

8. SUMMARY OF ESTHER

The Book of Esther is one of the books in the Old Testament of the Bible, and it tells the story of a Jewish woman named Esther who becomes the queen of Persia and plays a crucial role in saving her people from a plot to annihilate them.

The story is set in the Persian Empire during the reign of King Ahasuerus (also known as Xerxes I), and it begins with a grand banquet thrown by the king. During the celebration, the king orders Queen Vashti to appear before him and his guests, but she refuses, leading to her removal as queen.

In search of a new queen, the king holds a royal beauty pageant, and Esther, a young Jewish woman living in exile with her cousin and guardian Mordecai, is chosen as the new queen. However, Esther conceals her Jewish identity as advised by Mordecai.

The plot of the story revolves around a high-ranking official in the Persian court named Haman. Haman harbors a deep hatred for Mordecai, who refuses to bow down to him due to his allegiance to God. In

response to this perceived insult, Haman concocts a plan to exterminate all the Jews in the Persian Empire and casts lots (purim) to determine the day on which this would occur.

Mordecai learns of Haman's plot and implores Esther to intercede with the king on behalf of her people. Esther is initially hesitant, as approaching the king without an invitation could result in her death. However, she eventually agrees and invites the king and Haman to a series of banquets.

During one of these banquets, Esther reveals her Jewish heritage and exposes Haman's evil plan. The king, horrified by the plot and enraged by Haman's treachery, orders Haman to be hanged on the very gallows he had prepared for Mordecai.

To rectify the decree to annihilate the Jews, the king grants Mordecai the authority to issue a new decree allowing the Jews to defend themselves against their enemies on the appointed day. As a result, the Jews successfully defend themselves, and the day is celebrated as the festival of Purim.

The Book of Esther is a story of courage, faith, and the providence of God. It highlights the importance of individuals standing up against injustice and the celebration of deliverance and salvation. Purim, the festival that commemorates these events, remains an essential part of Jewish tradition.

The Book of Esther tells the story of Esther, a Jewish queen who risks her life to save her people from a plot to annihilate them, and how her courage and faith ultimately lead to their salvation.

9.   COMPARATIVE STUDY BETWEEN RUTH AND ESTHER IN THE BIBLE

Ruth and Esther are two prominent women in the Old Testament of the Bible, and while their stories are distinct, they share some common themes and differences.

1. Background and Setting:

Ruth: The Book of Ruth is set during the time of the judges in ancient Israel, primarily in the town of Bethlehem and the surrounding countryside.

Esther: The Book of Esther is set in the Persian Empire, during the reign of King Ahasuerus (Xerxes I). It takes place in the capital city of Susa.

Ethnicity and Identity:

Ruth: Ruth is a Moabite woman who marries into a Jewish family. After her husband's death, she becomes a loyal follower of the God of Israel and adopts the Jewish faith.

Esther: Esther is a Jewish woman who becomes the queen of Persia. She initially conceals her Jewish identity, following the advice of her cousin Mordecai, but later reveals it to save her people.

Loyalty and Faith:

Ruth: Ruth's story emphasizes her loyalty and faithfulness to her mother-in-law, Naomi. She famously declares, "Where you go, I will go; where you lodge, I will lodge; your people shall be my people, and your God my God" (Ruth 1:16).

Esther: Esther's story highlights her courage and faith in approaching the king to save her people, despite the risk to her own life.

Role and Action:

Ruth: Ruth's role is primarily as a faithful companion and provider for Naomi. She gleans in the fields and eventually marries Boaz, continuing the lineage of Naomi's family.

Esther: Esther's role is that of a queen with influence at the Persian court. She takes active steps to save the Jewish people by interceding with the king and exposing Haman's plot.

Theme of Deliverance:

Ruth: The Book of Ruth does not involve a specific threat or deliverance of a whole community but rather focuses on the individual story of Ruth and her relationship with Naomi and Boaz.

Esther: The Book of Esther revolves around the threat of a nation-wide massacre of the Jewish people and their ultimate deliverance through Esther's actions.

Festivals:

Ruth: There are no specific festivals associated with the Book of Ruth.

Esther: The Book of Esther is the basis for the Jewish festival of Purim, which celebrates the deliverance of the Jewish people from Haman's plot.

Message:

Ruth: Ruth's story emphasizes themes of loyalty, kindness, and the providence of God in the lives of individuals.

Esther: Esther's story underscores themes of courage, divine providence, and the importance of standing up against injustice.

While both Ruth and Esther are significant female figures in the Bible, their stories are distinct in terms of setting, background, and the challenges they face. Ruth's story focuses on individual relationships and loyalty, while Esther's story revolves around saving her people from a threat. Both stories contain important lessons about faith, courage, and God's providence.

10. HISTORICAL CONTEXT OF RUTH AND ESTHER

To understand the historical context of the biblical books of Ruth and Esther, it's essential to place these narratives within the broader historical and cultural framework of the ancient Near **East:**

Ruth:

The Book of Ruth is set during the time of the judges in ancient Israel. The period of the judges followed the Israelites' entry into the Promised Land, but before the establishment of the monarchy. This era was characterized by a lack of centralized leadership, with various local judges rising to power to deliver the Israelites from their enemies.

Key historical and cultural points for the Book of Ruth:

Famine and Migration: The story begins with a famine in the land of Bethlehem, which forces Naomi, her husband Elimelech, and their two sons to migrate to the land of Moab. This migration reflects the common occurrence of population movements and migrations due to environmental, economic, or political pressures in the ancient world.

Moabite Context: The Moabites were a neighboring people to the Israelites, and the relationship between these two groups was complex. Interactions and intermarriages between Israelites and Moabites were not uncommon.

Legal and Social Structures: The Book of Ruth also delves into the legal and social customs of the time, particularly the practice of gleaning in fields, which was a provision for the poor and vulnerable in society.

Esther:

The Book of Esther is set in the Persian Empire during the reign of King Ahasuerus (Xerxes I), which places it several centuries after the time of Ruth.

Key historical and cultural points for the Book of Esther:

Persian Empire: The Persian Empire was one of the largest and most powerful empires of the ancient world, stretching from modern-day Iran to Egypt and encompassing various cultures and ethnicities. Esther is one of the few books in the Bible set outside the borders of ancient Israel.

Royal Court: The story revolves around the royal court in Susa, the capital of the Persian Empire. This context is marked by opulence, decadence, and political intrigue.

Jewish Diaspora: The Book of Esther reflects the situation of the Jewish diaspora in the Persian Empire. Many Jews had been taken into captivity during the Babylonian exile and subsequently lived as a minority in various parts of the empire. Esther's story is situated within this context.

Cultural Exchange: Persian culture and customs influenced the Jewish community living in the empire, as seen in Esther's selection as queen and the use of the Persian name "Esther" (Hadassah is her Hebrew name).

The historical context of Ruth is within the period of the judges in ancient Israel, marked by migrations, societal customs, and interactions with neighboring peoples like the Moabites. On the other hand,

Esther's story takes place within the Persian Empire, highlighting the diaspora experience, cultural exchange, and the intrigue of the royal court. These distinct historical settings provide rich backgrounds for understanding the narratives and themes of these two biblical books.

11. A FEMINIST PERSPECTIVES ON RUTH AND ESTHER IN THE BIBLE

Feminist perspectives on the stories of Ruth and Esther in the Bible offer insights into the roles, agency, and experiences of women in these narratives.

Feminist interpretations of these biblical texts:

Ruth:

Agency and Independence: Feminist scholars often highlight Ruth's agency and independence in her story. She makes choices that are not dictated by male authority figures, such as her decision to stay with Naomi and her initiative in gleaning in Boaz's fields.

Female Solidarity: The relationship between Ruth and Naomi is seen as a powerful example of female solidarity and mutual support. It challenges the notion that women's primary roles are defined by their relationships with men.

Challenging Gender Roles: Ruth's story challenges traditional gender roles by depicting a woman who takes on active roles in providing for her family and, eventually, participating in the redemption of her family's land.

Inclusivity: Ruth, a Moabite woman, is embraced by the Jewish community, which challenges the exclusionary aspects of ancient Israelite society. This inclusivity is viewed as a feminist message of acceptance and breaking down cultural barriers.

Esther:

Strategic Use of Femininity: Esther's story is often analyzed through a feminist lens in terms of how she strategically uses her position as queen to influence King Ahasuerus and thwart Haman's plot. This highlights the power of femininity and agency within the constraints of a patriarchal society.

Hidden Strength: Esther initially hides her Jewish identity, and some feminists argue that this was a survival strategy in a hostile environment. Her eventual revelation of her identity to save her people is seen as a powerful assertion of her true self.

Resistance to Objectification: Esther's resistance to becoming an object for the king's pleasure is noted by feminist scholars. She takes calculated risks and navigates the male-dominated court to achieve her goals.

Collective Action: Esther's call for a collective fast and her leadership in the resistance against Haman's plan demonstrate her ability to mobilize her community, emphasizing the importance of collective action in feminist thought.

Overall, feminist perspectives on Ruth and Esther in the Bible highlight the strength, agency, and resilience of these women within the confines of their respective societies. These stories are seen as examples of women challenging traditional gender roles, supporting one another, and using their unique positions and strengths to navigate and influence their circumstances. They offer valuable lessons on female empowerment and solidarity.

12. CONCLUSION

Feminist perspectives on the biblical stories of Ruth and Esther offer a nuanced and empowering view of these women's experiences and roles within their respective narratives. Ruth and Esther emerge as strong, independent figures who navigate complex social and political contexts, challenge traditional gender roles, and demonstrate agency in their actions.

Ruth's story emphasizes themes of loyalty, female solidarity, and inclusivity, showcasing a woman who actively shapes her destiny and contributes to her family's redemption. Her journey challenges conventional expectations of women in ancient Israelite society and underscores the importance of individual agency and choice.

Esther's narrative highlights the strategic use of femininity, the power of hidden strength, and the ability to resist objectification within a patriarchal environment. Her courage in revealing her Jewish identity and her

leadership in mobilizing her community for collective action exemplify feminist ideals of empowerment and resistance.

In both stories, feminist perspectives underscore the significance of female relationships, resilience, and resourcefulness. Ruth and Esther emerge as inspirational figures who defy societal norms, advocate for their people, and, ultimately, shape the course of history through their actions. Their stories continue to resonate with contemporary feminist thought, emphasizing the importance of agency, solidarity, and the potential for women to effect positive change within their communities and societies.

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A Study of Women Education in India: A Modern Perspective

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ABSTRACT

Education is a multifaceted process that involves the acquisition of knowledge, skills, values, and attitudes through various formal and informal methods. Women's education, also known as female education or girls' education, refers to the education and empowerment of girls and women.Efforts to promote women's education often involve policy changes, investments in educational infrastructure, initiatives to combat gender discrimination and stereotypes, and community outreach programs. Women's education in India has come a long way, but challenges and disparities still exist.

1.   INTRODUCTION

Education is a multifaceted process that involves the acquisition of knowledge, skills, values, and attitudes through various formal and informal methods. It is a lifelong journey that empowers individuals to develop their intellectual, social, emotional, and physical capabilities, enabling them to participate effectively in society and improve their quality of life.

2.   KEY ASPECTS OF EDUCATION INCLUDE

Knowledge Transfer: Education involves the imparting of information, facts, and concepts. This can happen through formal instruction in schools and universities, but also through self-directed learning, mentorship, or experiential learning.

Skill Development: Education helps individuals acquire practical skills that are relevant to their personal and professional lives. These skills can be specific, like learning to operate machinery, or more general, like critical thinking and problem-solving.

Cultural and Socialization: Education often includes socialization into the values, norms, and traditions of a particular society or community. It helps individuals understand their cultural heritage and encourages tolerance and respect for diversity.

Personal Development: Education fosters personal growth by promoting qualities such as discipline, responsibility, creativity, and adaptability. It also helps individuals develop their self-esteem and self-confidence.

Preparation for Future Roles: Education prepares individuals for various roles in society, including careers, citizenship, and family life. It equips them with the knowledge and skills needed to contribute to their communities and the broader world.

Problem-Solving and Critical Thinking: Education encourages individuals to think critically, analyze information, and solve problems. These skills are essential for making informed decisions and addressing complex issues.

Education can take place in formal settings like schools and universities, but it also occurs informally through experiences, interactions, and self-directed learning. It can be categorized into different levels, such as primary, secondary, and higher education, each with its objectives and curriculum. Lifelong learning is increasingly emphasized as individuals need to adapt to evolving technologies and societal changes throughout their lives.Overall, education plays a crucial role in shaping individuals and societies, fostering personal and collective growth, and advancing human progress.

3.   WOMEN EDUCATION

Women's education, also known as female education or girls' education, refers to the education and empowerment of girls and women. It encompasses the formal and informal processes through which females acquire knowledge, skills, values, and attitudes. Historically, in many societies, women and girls have faced barriers to education, but efforts have been made globally to promote gender equality in education. Here are key aspects of women's education:

Access to Education: Women's education involves ensuring that girls and women have equal access to educational opportunities as their male counterparts. This includes access to primary, secondary, and higher education.

Literacy: Promoting female literacy is a fundamental aspect of women's education. Literacy is a foundational skill that empowers women to access information, participate in the workforce, and engage in civic and community activities.

Health Education: Women's education often includes health education, focusing on topics such as reproductive health, family planning, nutrition, and hygiene. This knowledge is crucial for the well-being of women and their families.

Empowerment: Education empowers women by increasing their knowledge, skills, and confidence. Educated women are better equipped to make informed decisions about their lives, including their careers, families, and health.

Economic Opportunities: Women's education can improve economic opportunities for women by increasing their employability and income-earning potential. Educated women are more likely to participate in the workforce and contribute to economic growth.

Gender Equality: Education plays a significant role in promoting gender equality. It challenges traditional gender roles and stereotypes and encourages women to pursue careers and leadership roles traditionally dominated by men.

Social and Political Participation: Educated women are more likely to be actively engaged in their communities and participate in the political process. They can advocate for their rights and contribute to social and political change.

Reduction of Gender-Based Violence: Education can help reduce gender-based violence by empowering women with knowledge and skills to protect themselves and seek support when needed.

Efforts to promote women's education often involve policy changes, investments in educational infrastructure, initiatives to combat gender discrimination and stereotypes, and community outreach programs.

4. WOMEN'S EDUCATION IN INDIA

Women's education in India has come a long way, but challenges and disparities still exist. Here's an overview of the status and developments in women's education in India:

Historical Context: Historically, women in India had limited access to education, primarily due to societal norms and gender biases. Early reformers like Raja Ram Mohan Roy and Jyotirao Phule advocated for women's education in the 19th century.

Legislation and Policies: India has enacted several laws and policies to promote women's education, including the Right to Education Act, which ensures free and compulsory education for all children aged 6 to 14, and the National Policy on Education.

Gender Disparities: Despite progress, gender disparities persist in Indian education. Girls often face greater barriers to access, retention, and completion of schooling, particularly in rural areas.

Access and Enrollment: In recent years, there has been a significant increase in the enrollment of girls in primary and secondary education. Government schemes like "Beti Bachao, Beti Padhao" (Save the Daughter, Educate the Daughter) aim to promote girls' education.

Dropout Rates: Despite improved enrollment, dropout rates among girls, especially in secondary education, remain a concern. Factors like early marriage, lack of sanitation facilities, and distance to schools contribute to dropouts.

Quality of Education: Quality of education, especially in government schools, is a concern. Ensuring that girls receive a quality education is essential for their empowerment.

Higher Education: Access to higher education for women has improved, with many women pursuing undergraduate and postgraduate degrees. Women have excelled in various fields, including science, technology, politics, and business.

Technical and Vocational Education: Initiatives like the National Skill Development Mission aim to provide skill training to women, enhancing their employability and economic independence.

Gender Parity in Literacy: India has made progress in reducing the gender gap in literacy rates. According to Census 2011, the female literacy rate increased from 53.7% in 2001 to 65.5% in 2011.

Challenges and Barriers: Challenges to women's education in India include child marriage, gender-based violence, poverty, and cultural norms. Addressing these challenges requires a multifaceted approach.

Digital Divide: Bridging the digital divide is crucial for women's education in the digital age. Initiatives like "Digital India" aim to provide digital literacy and connectivity to rural areas.

Women's Empowerment: Women's education in India is not just about academic achievement; it's a means of empowerment. Educated women tend to have smaller families, better health outcomes, and greater economic independence.

Women in Leadership Roles: Women in India have achieved leadership positions in various sectors, breaking traditional barriers. This includes political leaders, business executives, scientists, and more.

NGO and Civil Society Initiatives: Numerous non-governmental organizations and civil society initiatives work tirelessly to promote women's education, address barriers, and empower women and girls.

women's education in India has made significant progress, but challenges like gender disparities, dropout rates, and cultural norms still pose obstacles. The government, civil society, and educational institutions continue to work towards ensuring equal access to quality education for women, recognizing the critical role it plays in the country's development and gender equality.

5.   THE BENEFITS OF WOMEN'S EDUCATION:

The benefits of women's education are far-reaching and have positive impacts on individuals, families, communities, and societies as a whole. Here are some of the key benefits of women's education:

Empowerment: Education empowers women by increasing their knowledge, skills, and self-confidence. This empowerment enables them to make informed decisions about their lives, including their careers, family planning, and health.

Improved Health: Educated women are more likely to have better health outcomes for themselves and their children. They are more knowledgeable about nutrition, healthcare, and disease prevention, leading to healthier lifestyles.

Economic Opportunities: Women's education enhances their employability and income-earning potential. Educated women are more likely to participate in the workforce and access higher-paying jobs, contributing to economic growth and poverty reduction.

Gender Equality: Education plays a crucial role in promoting gender equality. It challenges traditional gender roles and stereotypes, advocating for equal rights and opportunities for women in all aspects of life.

Child Education: Educated mothers tend to prioritize their children's education, leading to better educational outcomes for the next generation. They are more likely to provide a stimulating and supportive home environment for their children's learning.

Reduced Fertility Rates: There is a strong correlation between women's education and reduced fertility rates. As women gain access to education and economic opportunities, they tend to have fewer children, contributing to population control efforts.

Social and Political Participation: Educated women are more likely to be actively engaged in their communities and participate in the political process. They can advocate for their rights, influence policy decisions, and contribute to social and political change.

Reduction of Gender-Based Violence: Education can help reduce gender-based violence by empowering women with knowledge and skills to protect themselves and seek support when needed.

Improved Quality of Life: Women's education contributes to an improved quality of life for women and their families. It leads to better living standards, increased access to resources, and enhanced social well-being.

Community Development: Educated women often play leadership roles in their communities, contributing to community development initiatives, and promoting positive social change.

National Development: The education of women is essential for a nation's development. It leads to a more skilled and productive workforce, which can drive economic growth and innovation.

Global Development: On a global scale, promoting women's education is essential for achieving Sustainable Development Goals (SDGs), such as gender equality, poverty reduction, and access to quality education.

In summary, women's education is a powerful catalyst for personal and societal transformation. It empowers women to lead healthier, more fulfilling lives while simultaneously contributing to the social and economic development of communities and nations. As a result, investing in women's education is widely recognized as a critical strategy for advancing human progress and achieving gender equality.

6.   TYPES OF WOMAN EDUCATION

Women's education encompasses a wide range of educational opportunities and initiatives designed to empower and educate women and girls. These initiatives can vary depending on the cultural, societal, and economic contexts in different regions of the world. Here are some types of women's education:

Formal Education: This includes primary, secondary, and tertiary education provided in schools and universities. Efforts to promote gender equality in formal education include ensuring equal access for girls and women, developing curricula that are gender-sensitive, and creating safe and supportive learning environments.

Vocational and Technical Training: Women can receive specialized training in vocational and technical fields to acquire practical skills that enhance their employability. This type of education is often tailored to local labor market needs.

Adult Literacy Programs: Adult literacy programs are designed to teach women and girls how to read, write, and perform basic mathematical calculations. These programs are essential for women who have not had the opportunity to receive formal education.

Health Education: Health education programs focus on women's reproductive health, family planning, nutrition, hygiene, and disease prevention. These programs empower women to make informed decisions about their health and that of their families.

Life Skills and Financial Literacy: Life skills programs equip women with essential skills such as communication, problem-solving, and decision-making. Financial literacy programs teach women about managing finances, budgeting, and entrepreneurship.

Online and Distance Learning: In the digital age, online and distance learning programs offer flexible educational opportunities for women. They can access courses and resources from anywhere, making education more accessible.

Empowerment Workshops and Seminars: These workshops and seminars focus on topics such as leadership, self-esteem, confidence-building, and assertiveness. They aim to empower women to take on leadership roles in their communities and workplaces.

Community-Based Education: Many initiatives involve community-based education, where women and girls can learn in a familiar and supportive environment. Community centers and NGOs often facilitate these programs.

Non-Formal Education: Non-formal education includes educational activities that are not part of the formal school system. These can be literacy classes, skills training, or workshops conducted outside traditional educational institutions.

Gender-Sensitive Curricula: Gender-sensitive curricula are designed to challenge gender stereotypes and biases in education. They promote gender equality and ensure that educational materials and teaching methods are inclusive and sensitive to gender issues.

Girls' Education Initiatives: Many organizations and governments run special initiatives focused on girls' education, to increase enrollment and retention rates among girls, particularly in regions where they face significant barriers to education.

Scholarships and Financial Support: Scholarships and financial aid programs specifically target women and girls, making it easier for them to access higher education and pursue advanced degrees.

Educational Advocacy and Awareness Campaigns: Advocacy and awareness campaigns seek to change societal attitudes and policies related to women's education. They highlight the importance of girls and women's education and work to eliminate gender-based discrimination in education.

These various types of women's education programs and initiatives contribute to empowering women and girls, promoting gender equality, and improving the overall well-being of communities and societies. They recognize the importance of education as a tool for personal and societal development.

7. STRATEGIES FOR WOMAN EDUCATION

Promoting women's education and gender equality in education requires a combination of strategies at various levels, including policy, community, and individual efforts. Here are some key strategies for advancing women's education:

Gender-Sensitive Policies and Legislation: Develop and enforce laws and policies that eliminate gender-based discrimination in education. Ensure equal access to educational opportunities and resources for girls and women.Establish mechanisms for reporting and addressing gender-related issues in educational settings.

Financial Support and Scholarships: Provide scholarships and financial aid specifically targeting women and girls, particularly those from marginalized backgrounds. Offer incentives to families to encourage them to send their daughters to school, such as conditional cash transfer programs.

Access to Safe and Inclusive Learning Environments: Build and maintain schools and educational facilities that are safe, well-equipped, and accessible to all, including those with disabilities. Implement measures to prevent and address gender-based violence in educational settings.

Teacher Training and Gender Sensitization: Train teachers and educators in gender-sensitive teaching methods and classroom management. Promote the recruitment and retention of female teachers as role models.

Curriculum Reform: Develop and implement gender-sensitive curricula that challenge stereotypes and promote gender equality. Include women's contributions and achievements in various fields in the curriculum.

Community Engagement and Awareness: Raise awareness about the importance of women's education within communities and among parents, emphasizing the long-term benefits. Encourage community involvement in education, such as through parent-teacher associations.

Girl-Friendly Schools: Establish "girl-friendly" schools that provide a supportive and nurturing environment, including separate sanitation facilities, menstrual hygiene support, and gender-responsive teaching approaches.

Life Skills and Health Education: Include life skills and health education in the curriculum, covering topics like reproductive health, financial literacy, and decision-making.

Educate girls and women about their rights and available support services.

Flexible Learning Models: Implement flexible learning models, such as distance education or evening classes, to accommodate the needs of women and girls who may have care-giving responsibilities or work commitments.

Peer Mentoring and Support Groups: Establish peer mentoring programs and support groups for girls and women, providing them with guidance and emotional support. Encourage female role models from the community to mentor girls and share their experiences.

Partnerships and Collaboration: Collaborate with NGOs, civil society organizations, and international agencies to leverage resources and expertise in promoting women's education.

Partner with businesses and employers to create opportunities for women's skills development and employment.

Monitoring and Evaluation: Collect and analyze gender-disaggregated data to track progress and identify areas where interventions are needed. Conduct regular evaluations to assess the impact of educational programs on girls and women.

Advocacy and Media Campaigns: Advocate for women's education through media campaigns, public awareness initiatives, and social media platforms. Highlight the achievements of educated women as role models.

Policy Implementation and Accountability: Ensure that gender-sensitive policies are effectively implemented and enforced. Hold institutions and authorities accountable for addressing gender disparities in education.

Research and Knowledge Sharing: Support research on gender-related educational issues and share best practices and findings to inform policy and program development.

Promoting women's education is not only a matter of social justice but also contributes significantly to economic growth, social stability, and the overall well-being of communities and nations. These strategies, when implemented collectively and comprehensively, can help break down barriers and create a more equitable and inclusive educational system for women and girls.

8. SOCIAL REFORMERS FOR WOMAN EDUCATION

Women's education in India has been a critical social issue, and there have been several fighters and advocates who have played pivotal roles in promoting and advancing the cause of women's education. These individuals and organizations have worked tirelessly to break down barriers and create opportunities for girls and women to receive quality education in India. Here are some notable fighters for women's education in India:

Raja Ram Mohan Roy (1772-1833): Often referred to as the "Father of the Indian Renaissance," Raja Ram Mohan Roy was a social reformer who advocated for women's education and their rights. He founded the Brahmo Samaj, which encouraged female education and fought against child marriage and the practice of Sati.

Savitribai Phule (1831-1897): Savitribai Phule was one of the first female teachers in India and a pioneer in women's education. Along with her husband, Jyotirao Phule, she established the first girls' school in Pune in 1848. She also campaigned against caste discrimination and worked towards the upliftment of marginalized communities.

Pandita Ramabai (1858-1922): Pandita Ramabai was a scholar and social reformer who championed women's education. She founded the Arya Mahila Samaj and the Mukti Mission, which provided education and support to widows and women in distress.

Dr. Annie Besant (1847-1933): An Irish-born theosophist and social reformer, Annie Besant was actively involved in promoting women's education in India. She founded the Central Hindu School in Varanasi and played a significant role in the promotion of Theosophical education for Indian women.

Dr. Sarvepalli Radhakrishnan (1888-1975): Dr. Radhakrishnan was not only the second President of India but also a prominent philosopher and advocate for education. He believed in the importance of women's education and worked towards gender equality in educational institutions.

Kasturba Gandhi (1869-1944): The wife of Mahatma Gandhi, Kasturba played a vital role in the Indian independence movement and also supported the cause of women's education. She was actively involved in campaigns for girls' schools and vocational training centers.

Kamaladevi Chattopadhyay (1903-1988): Kamaladevi Chattopadhyay was a social reformer and freedom fighter who worked tirelessly for the promotion of women's education and empowerment. She was instrumental in setting up the All India Women's Conference and the National Council of Women in India.

Dr. A.P.J. Abdul Kalam (1931-2015): Dr. Kalam, the former President of India, was a strong advocate of education and believed in equal opportunities for all. He promoted education for girls and women as a means to empower them and transform society.

Malala Yousafzai: Although not Indian, Malala Yousafzai's advocacy for girls' education has had a significant impact in India and around the world. Her courage and determination to promote education for girls, even in the face of adversity, have inspired many in India to work towards similar goals.

These individuals and organizations have made significant contributions to the cause of women's education in India, and their efforts continue to inspire and shape educational policies and initiatives in the country.**Girls' Education Advocacy Organizations:** Various organizations, such as Plan International, Girl Rising, and the Malala Fund, work tirelessly to advocate for and support girls' education globally. They raise awareness, provide resources, and implement programs to advance girls' access to education.These fighters for women's education, along with countless others at the grassroots level, in communities, and government, have made significant contributions to the cause of women's education and gender equality in educational opportunities. Their dedication and advocacy have helped break down barriers and create greater opportunities for girls and women to access quality education.

9. **WHAT ARE THE BARRIERS FOR THE WOMAN EDUCATION AND HOW TO OVERCOME ?**

There are several barriers to women's education, and overcoming these barriers is essential to promoting gender equality in education. These barriers can vary depending on cultural, economic, and social factors in different regions and communities. Here are some common barriers to women's education and strategies to overcome them:

Socioeconomic Barriers:

Poverty: Poverty is a significant barrier to education for many girls and women. Families facing financial constraints may prioritize the education of boys over girls.

Solution: Implement scholarship and financial aid programs targeting girls and women. Conditional cash transfer programs can incentivize families to send their daughters to school.

Cultural and Social Norms:

Gender Stereotypes: Deep-rooted gender stereotypes may discourage families and communities from supporting girls' education. Traditional gender roles may limit girls' opportunities.

Solution: Launch public awareness campaigns to challenge stereotypes and promote the benefits of girls' education. Engage community leaders and influencers to advocate for gender equality in education.

Early Marriage and Childbearing:

Child Marriage: Early marriage often leads to girls dropping out of school. Childbearing responsibilities can further hinder their educational progress.

Distance to Schools: In many rural areas, girls may have to travel long distances to reach the nearest school, which can be unsafe and impractical.

Limited Female Teachers: The absence of female teachers can limit girls' access to education, especially in conservative communities.

Gender-Based Violence: Girls may face harassment and violence while traveling to school or within school premises.

Menstrual Taboos: Cultural taboos around menstruation can lead to girls missing school during their periods if there are no proper facilities.

Language of Instruction: In some regions, the language of instruction in schools may not be the one spoken at home, making learning difficult.

Gender-Biased Curricula: Outdated or gender-biased curricula may reinforce stereotypes and hinder girls' educational experiences.

Limited Access to Higher Education: Many girls face barriers when pursuing higher education due to financial constraints or limited opportunities.

10. SOLUTIONS

Enforce laws against child marriage and raise awareness about its detrimental effects. Provide reproductive health education and services to delay early pregnancies.Build more schools and improve infrastructure, particularly in rural and remote areas. Provide transportation options or dormitory facilities for girls who must travel long distances.Implement and enforce policies to prevent and address gender-based violence in schools. Raise awareness about safe reporting mechanisms and support services.Lack of Female Teachers and Encourage the recruitment and retention of female teachers. Provide incentives and training to attract more women to the teaching profession. Create menstrual hygiene facilities in schools, including clean and private toilets and access to sanitary products. Conduct menstrual hygiene awareness campaigns. Provide bilingual or multilingual education to accommodate linguistic diversity. Ensure that educational materials are available in local languages.Revise curricula to be gender-sensitive and inclusive. Promote diverse role models and achievements of women in textbooks and teaching materials.Offer scholarships and financial support for higher education. Create pathways for girls to transition from secondary to tertiary education.Overcoming these barriers to women's education requires a coordinated effort involving governments, communities, civil society organizations, and international partners. By addressing these barriers systematically, societies can work toward achieving gender equality in education and unlocking the full potential of girls and women.

11. WHAT IS THE MODERN PERSPECTIVES ON WOMAN EDUCATION?

Modern perspectives on women's education have evolved to reflect changing societal norms, economic dynamics, and educational needs. These perspectives emphasize the importance of gender equality, women's empowerment, and the role of education in addressing contemporary challenges. Here are some key modern perspectives on women's education:

Gender Equality as a Fundamental Right: Modern perspectives firmly recognize gender equality as a fundamental human right. Education is seen as a key avenue to achieving this equality, with a focus on ensuring equal access to educational opportunities for people of all genders.

Empowerment and Agency: Women's education is viewed as a means to empower women and girls, enabling them to make informed choices about their lives, participate actively in society, and exercise agency in their personal and professional decisions.

Economic Empowerment: Education is seen as a pathway to economic empowerment for women. Modern perspectives emphasize the importance of equipping women with the skills and knowledge needed to access better job opportunities, improve income-earning potential, and contribute to economic growth.

Breaking Gender Stereotypes: Contemporary perspectives on women's education challenge traditional gender roles and stereotypes. The aim is to provide girls and women with a diverse range of educational and career options, including those traditionally dominated by men, such as STEM (Science, Technology, Engineering, and Mathematics) fields.

Health and Well-Being: Education is recognized as a tool for improving the health and well-being of women and their communities. Modern perspectives include comprehensive health education and reproductive health awareness as integral components of women's education.

Digital Literacy: In the digital age, digital literacy and technology-related skills are considered essential for women. Modern perspectives highlight the importance of providing girls and women with access to technology and digital education to bridge the digital gender divide.

Lifelong Learning: The concept of lifelong learning is emphasized, recognizing that education should be an ongoing process that continues throughout a woman's life. This perspective is crucial for adapting to rapid technological advancements and evolving societal needs.

Community and Global Engagement: Modern perspectives on women's education stress the importance of community and global engagement. Women are encouraged to actively participate in community development initiatives, advocate for their rights, and engage in global issues.

Intersectionality: A modern perspective on women's education takes into account intersectionality, recognizing that women's experiences and needs vary based on factors such as race, ethnicity, socioeconomic status, sexual orientation, and ability. Education programs aim to be inclusive and responsive to diverse identities and experiences.

Sustainable Development Goals (SDGs): Women's education is closely aligned with the United Nations Sustainable Development Goals, particularly Goal 4 (Quality Education) and Goal 5 (Gender Equality). Modern perspectives emphasize the role of education in achieving these global goals.

Environmental and Social Responsibility: Women's education includes an emphasis on environmental and social responsibility. Education programs may incorporate sustainability education and promote awareness of social justice issues.

Global Citizenship: Women are encouraged to become global citizens, fostering a sense of responsibility and engagement with global challenges, including climate change, human rights, and peace-building.

Modern perspectives in women's education reflect a holistic approach that recognizes the interconnectedness of gender equality, education, and broader societal goals. These perspectives aim to empower women and girls to thrive in the contemporary world, contribute to positive social change, and address the challenges of the 21st century.

12. CONCLUSION

The modern world, women's education stands as a beacon of hope and progress, illuminating the path toward a more equitable, just, and prosperous society. As we conclude our exploration of women's education in this context, it becomes abundantly clear that investing in the education of women and girls is not merely a matter of social justice; it is an imperative for the advancement of humanity as a whole.In conclusion, women's education in the modern world is a transformative force that transcends borders and boundaries. It empowers women to overcome challenges, lead meaningful lives, and contribute to the betterment of society. As we continue to strive for gender equality and a more equitable world, investing in women's education remains one of the most effective and morally imperative actions we can take. It is a promise of a brighter and more equitable future, not just for women but for all of humanity.

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Impact of Technological Advancement on Job Satisfaction of Prospective Academic Intrapreneurs in Higher Educational Institutions

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ABSTRACT

A contemporary illness known as "technostress" is brought on by an incapacity to adapt to new technology and manifests as symptoms such as headache, irritation, anxiety, and nightmares. Technostress is a modern disease caused by an inability to cope up with new technologies, leading to symptoms like headache, irritability, anxiety, and nightmares. The need for ICT has increased phenomenally post Covid 19 outbreak as many people have adapted to work from home culture and excess use of technology. Post the outbreak, there has been an adverse moment in the economic lifecycle for Institutions. The Institutions to withstand this situation exert pressure on Prospective Academic Intrapreneurs to overcome this crisis and sustain in the market. The Prospective Academic Intrapreneurs in their process of innovation will have to adopt new ICT, and this may result in technostress among them. The current study was to investigate the effects of technostress on demographic factors, evaluate the degree of job satisfaction, and examine the effects of technostress on the job satisfaction of potential academic intrapreneurs at institutions. The random sampling method was used for selecting the sample and the sample size consisted of 60 Prospective Academic Intrapreneurs from Educational Institutions. Technostress creator scale developed by Tarafdar (2007) was modified and used for data collection. Descriptive statistics and inferential statistics were used for analysing the data, using SPSS software. The results of the study indicated that the male Prospective Academic Intrapreneurs experienced more technostress in Institutions to their female counterparts. With regard to age, duration of service, and location, there was no significant difference in the technostress. The majority of the Prospective Academic Intrapreneurs experienced moderate to a high level of job satisfaction. A linear regression established that technostress accounted for 10.1% of the explained variability in job satisfaction.

Keywords: Technostress, Prospective Academic Intrapreneurs, Job satisfaction, Educational Institutions.

1. INTRODUCTION

Technology has become an integral part of society. In Institutions, academicians spend their entire day working in front of screens which is affecting their mental and physical health. According to Craig Brod (1984), Technostress is "a modern disease of adaptation caused by an inability to cope with the new technologies in a healthy manner". He further explained the main symptom of technostress of an individual who is terrified with Information Technology is anxiety which is expressed in different forms like headaches, irritability, nightmares, or rejection of the technology. Tarafdar et al., (2007) has recognized five components of technostress which are also known as technostress creators, they are:

- Techno-overload: When people using information and communication technology are compelled to work longer and faster, this is known as techno-overload.
- Techno-invasion: When people who utilise information and communication technology feel like they are always "connected" or can be reached at any time, it can become difficult to distinguish between their personal and work lives.
- Techno-complexity: This is the state in which people who utilise information and communication technology believe that their level of expertise is insufficient because of the complexity of ICT. They must therefore invest more time and energy in learning about and comprehending the various ICT facets.
- Techno-insecurity: When people who utilise information and communication technology feel as though their jobs are in danger of disappearing because they are being replaced by new ICT.
- Techno-uncertainty: This refers to a state in which users of information and communication technology experience anxiety and uneasiness as a result of ICT's rapid and ongoing change.

Since the Covid 19 epidemic, there has been a tremendous surge in the need for ICT as more academicians use technology. Over time, researchers have discovered that technostress is a normal response to technology rather than something that is caused by technology. Therefore, in order to lessen their technological stress, all faculty members who use ICT should begin adjusting to new technologies.

Employee emotional reactions to their work are referred to as job satisfaction. According to research data, a contented worker performs their job well. Improving job happiness plays a significant role in raising institutional

productivity. The following are some of the key factors that affect job satisfaction: pay, perks, advancement, and working conditions.

An academic Intrapreneur is an employee who has been given the authority and support to create or work on a special idea or project. They are given time and freedom to develop a program or a project asan entrepreneur would. However, academic intrapreneurs are not working individually, but they work as a part of the institution where they access the resources and capabilities of the Educational Institution and seek to improve the existing Institution.

Post Covid 19 outbreak it has been showcasing an adverse moment in the economic lifecycle for Institutions which has negatively impacted both internally and externally. The Prospective academic Intrapreneurs of the Institution come to the rescue in such a crisis and rapidly help in building a unique set of rules andofferings to the market. The Prospective Intrapreneurs in their process of creating impact will have to adapt to new ICT, and this may result in Technostress among them.

2.   REVIEW OF LITERATURE

Jena (2015) carried out research on the relationship between job satisfaction and technostress among Indian academics. To gather information on technostress and job satisfaction from instructors employed at various Indian institutions and colleges, the researcher employed the survey approach. A 5-point Likert scale questionnaire was utilised to gather information on five aspects of technostress and job satisfaction from the study's sample of 216 respondents. The Tarafdar et al. (2007) scale was employed by the researcher to gauge the level of technostress experienced by Indian academics. The study's findings showed that technostressors had a detrimental effect on academicians' job satisfaction in India.

Kumar et al (2013) carried out research on how IT professionals' levels of job satisfaction and organisational commitment are affected by technostress. Eighty IT experts, aged between twenty and thirty, who were employed at Chandigarh IT Park made up the sample. The Computer Hassles Scale (Hudiburg), the Job Satisfaction Scale (Singh and Sharma, 1971), and the Organisational Commitment Scale (Dhar et al., 2001) were the instruments the researcher utilised to gather data through the survey approach. The study's findings showed a negative relationship between technostress and organisational commitment and work satisfaction.

Marchiori et al (2020) examined the connection between Brazil's demography, organisational commitment, work satisfaction, and technostress. The study's goal was to find out if public employees' job happiness and organisational commitment were impacted by technostress. The study also discovered a connection between demographic factors and technostressors. The survey included 263 respondents in its sample. The job happiness scale created by Ragu-Nathan et al. and the technostress creator scale developed by

Taylor and Im et al.'s scale of organisational commitment. The study's findings showed that employees' job happiness was negatively impacted by technostress, and that employees' job satisfaction was favourably correlated with their organisational commitment. The study also showed how the demographic factors and technostress related to one other.

Ngozi et al (2018) carried out a study on employee performance, service delivery, and technostress in a few Anambra state deposit money institutions. The current study set out to investigate the association between technostress and worker performance as well as the relationship between information overload and job happiness. The researcher employed a 5-point Likert Scale questionnaire with 10 items, with 260 responses making up the sample. The current study's findings showed a favourable relationship between job satisfaction and information overload.

Pullins et al (2020) examined the impact of sales technology adoption on technostress among sales professionals. Studying changes in role stress, job satisfaction, and potential mitigating techniques was the aim of the current investigation. Sales professionals were surveyed in order to gather statistics. Data were gathered using the following instruments: the job satisfaction survey scale created by Spector; the job commitment scale made by Meyer and Allen; the items of role stress developed by Rizzo et al.; and the technostress creator scale developed by Ragu-Nathan et al. 237 respondents made up the sample. The study's findings showed that role stress rises in response to technostress and job satisfaction falls.

Manimala, M. J., Jose, P. D., & Thomas, K. R. (2006). The processes and procedures essential to enable innovation have yet to be implemented in Indian firms. Despite the fact that many of these companies have formal R&D departments or divisions, it appears that R&D is more of a ritual than a proactive innovation strategy without the essential organisational backing. R&D facilities and organisational innovation support should not be considered as separate entities, but rather as complementary systems that support each other as part of a larger

innovation strategy. In Indian public sector enterprises, the lack of such an integrative perspective and strategy appears to be the underlying limitation to innovation.

3. STATEMENT OF PROBLEM

Due to Covid 19 outbreak, there has been an adverse moment in the economic lifecycle forInstitutions. The Institutions to withstand this situation exert pressure on Prospective Academic Intrapreneurs to overcome this crisis and sustain in the market. The Prospective Academic Intrapreneurs in the process of innovation will have to adopt new ICT, and this may result in Technostress among them. Therefore,

this research aims to study the "Impact of Technostress on job satisfaction of Prospective Academic Intrapreneurs in Educational Institutions post the Pandemic Covid- 19".

4. OBJECTIVES

- To study how demographic factors are impacted by technostress
- To evaluate prospective academic intrapreneurs' employment satisfaction levels after the pandamic
- To examine how prospective academic intrapreneurs' job satisfaction is affected by technological stress.

5. HYPOTHESIS

- **H1:** There is no discernible link between gender and technological stress in prospective Academic Intrapreneurs working in Educational Institutions Post Covid- 19 pandemic.
- H2: The age of Prospective Academic Intrapreneurs working in Educational Institutions does not significantly correlate with technostress.
- **H3:** Among prospective academic intrapreneurs employed in educational institutions following the COVID-19 epidemic, there is no discernible correlation between technostress and length of service.
- **H4:** Technostress and Prospective's location do not significantly correlate among Prospective Academic Intrapreneurs working in the Educational Institutions post Covid- 19 pandemic.
- **H5:** Technostress of Prospective Academic Intrapreneurs is not a significant predictor of their Job Satisfaction.

6. SAMPLE SIZE

The sample comprised of 60 Prospective academic Intrapreneurs who were a part of this survey, out of which 20 were females and 40 were males working in Higher Educational Institutions in Bangalore.

TOOLS USED FOR STUDY

Technostress creator scale developed by Tarafdar et al., (2007) was used to study the technostress levels among the Prospective Academic Intrapreneurs post the Covid 19 Pandemic period. The statements in the scale were modified in the questionnaire according to the post Covid 19 situation. The modified questionnaire consisted of 20 questions on a 5- point Likert scale.

PROPOSED MODEL

Impact of Technostress on Academic Intrapreneurs
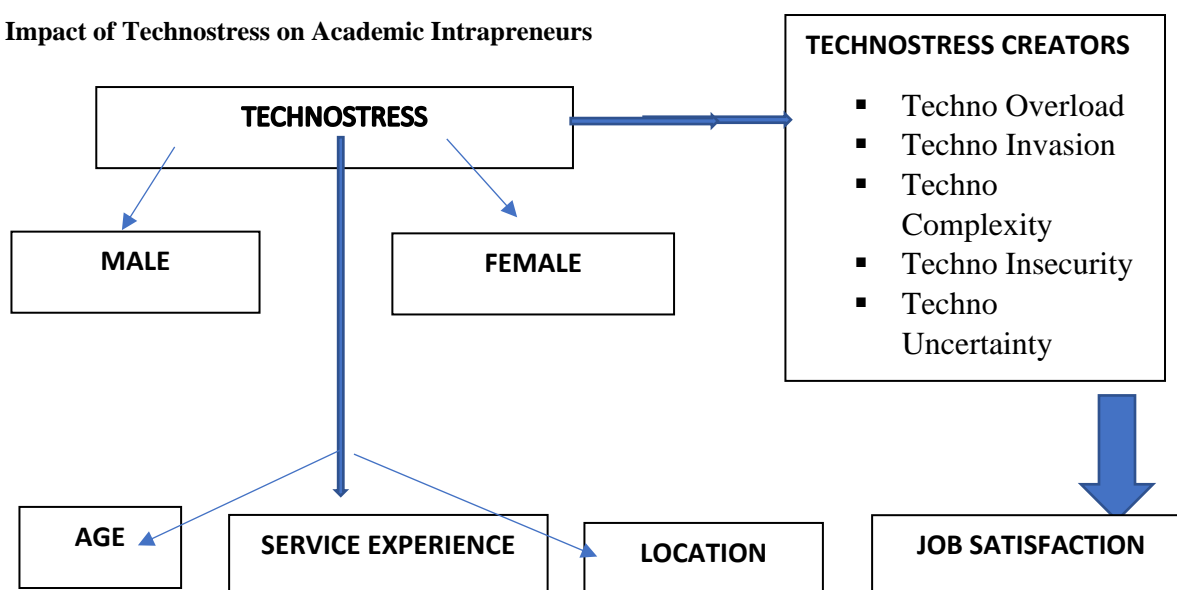
DATA ANALYSIS AND INTERPRETATION
The results of the study are presented in the form of descriptive and inferential statistics.

INFLUENCE OF TECHNO-STRESS CREATORS ON DEMOGRAPHIC VARIABLES
Table 1: Demographic information of Prospective Intrapreneurs

Attribute	Characteristics	N	Percentage
Gender	Male	40	66.67%
	Female	20	33.33%
Age	Below 35 years	20	33.33%
	35 years and Above	40	66.67%
Duration of Service	≤ 5 years	11	18.33%
	6 to 15 years	24	40%
	≥ 16 years	25	41.67%
Location	Urban	50	83.33%
	Rural	10	16.67%

From the above table, it is observed:

i.   **Gender:** 66.67% of the sample were male Prospective academic Intrapreneurs and 33.33% of sample were female Prospective academic Intrapreneurs.
ii. **Age:** 33.33% of the sample were below the age of 35 years and 66.67% of the sample wereof the age group 35 years and above.
iii. **Duration of service:** 18.33% of the sample had an experience of 5 years or below, 40% of the sample had an experience in the range of 6 to 15 years and 41.67% of the sample had an experience of 16 years and above.
iv. **Location:** 83.33% of the respondents belong to the urban population and 16.67% of the respondents belong to rural population.

Table 2: Result of Descriptive Statistics.

Technostress Creator	Mean	Standard Deviation	Cronbach's Alpha
Techno Overload	3.33	1.22	0.887
Techno Invasion	3.42	1.11	0.695
Techno Complexity	2.64	1.02	0.737
Techno Insecurity	2.96	0.92	0.633
Techno Uncertainty	3.45	0.91	0.704

The reliability score (Cronbach's Alpha value), mean value and standard deviation of the different technostress creators of Prospective Academic Intrapreneurs are shown in the Table 2. According to Hulin et al., (2001) the general acceptable rule of reliability is that, above 0.6 indicates acceptable level of reliability, whereas 0.8 or greater indicates a very good level of reliability. In the present study, the Cronbach's Alpha values obtained for the different technostress creators ranged between 0.6 to 0.9, which indicates that the reliability is within the acceptable range.

Table 3: Association between the demographic variables and technostress among prospective Academic intrapreneurs post Covid- 19.

Attributes	Test Statistics (t, F)	df	Sig. (p)
Gender	2.262	58	0.027
Age	1.912	58	0.061
Duration of service	0.359	2	0.700
Location	1.623	58	0.110

The researcher carried out the Independent Sample t- test to measure the difference between two subgroups and one-way ANOVA to measure the difference between three or more than three sub groups.

From the above table, it is observed that:

1. Technostress differs significantly based on the gender (male and female) of Prospective Academic Intrapreneurs (t=2.262, p<0.05) at 5% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, there is a significant difference between male and female Prospective academic Intrapreneurs with respect to their technostress. So, the H1 is rejected. The study indicated that the male Prospective   Academic Intrapreneurs experienced more technostress in comparison to their female counterparts.

2. Technostress does not differ significantly based on age (below 35 years, 35 years and above)of Prospective Academic Intrapreneurs (t=1.912, p>0.05) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. So, the H2 is accepted. It meansthat, there is no significant difference between age group of Prospective Academic Intrapreneurs with respect to the technostress experienced by them.

3. Technostress does not differ significantly based on duration of service (≤ 5 years, 6 to 15 years, ≥ 16 years) of Prospective Academic Intrapreneurs (F=0.359, p>0.05) at 5% level of significance.Hence, the null hypothesis is accepted and alternative hypothesis is rejected. So, the H3 is accepted. It means that, there is no significant difference between duration of service of Prospective Academic Intrapreneurs with respect to the technostress experienced by them.

4. Technostress does not differ significantly based on location (rural and urban) of Prospective Academic Intrapreneurs (t=1.623, p>0.05) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. So, the H4 is accepted. It means that, there isno significant difference between location of Prospective Academic Intrapreneurs with respect to the technostress experienced by them.

LEVEL OF JOB SATISFACTION AMONG PROSPECTIVE ACADEMIC INTRAPRENEURS WORKING POST COVID-19

The level of job satisfaction among Prospective Academic Intrapreneurs working in Educational Institutions post Covid 19 is categorized into three groups based on the job satisfaction scores. The level of job satisfaction among the Prospective Academic Intrapreneurs working in Educational Institutions post Covid 19 were in the following range: Low level of job satisfaction (0-8), Moderate level of job satisfaction (9- 17)and high level of job satisfaction (18- 25).

Table 4: Level of Job satisfaction among Prospective Academic Intrapreneurs

Level of Job Satisfaction	Number of Prospective Intrapreneurs	Percentage
Low	0	0.00%
Moderate	47	78.33%
High	13	21.67%
Total	60	100%

Table 4 shows the level of job satisfaction among 60 Prospective Academic Intrapreneurs working in Educational Institutions. Among 60 Prospective Academic Intrapreneurs working in Educational Institutions post Covid-19, none of them experienced low level of job satisfaction, 78.33% experienced Moderate level of job satisfaction, and 21.67% experienced High level of job satisfaction.

IMPACT OF TECHNOSTRESS ON JOB SATISFACTION OF PROSPECTIVE ACADEMIC INTRAPRENEURS

Table 5: Model Summary – Technostress and job satisfaction

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.318[a]	.101	.086	2.10839

a. Predictors: (Constant), Technostress

The R value of 0.318 indicates a moderate degree of correlation between the dependent variable job satisfaction and independent variable technostress.

The R square value is 0.101, which indicates that 10.1% of the variation of job satisfaction is caused by technostress.

The adjusted R^2 value is 0.086.

From the above result, it indicates that the technostress explains 10.1% of the variability of job satisfaction in the sample. This shows that some other factors which are not captured in the present study also contribute to the job satisfaction of the Prospective Academic Intrapreneurs working in Educational Institutions.

Table 6: ANOVA[a] -Technostress and job satisfaction

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	29.105	1	29.105	6.547	.013[b]
	Residual	257.829	58	4.445		
	Total	286.933	59			

a. Dependent Variable: Job Satisfaction

b. Predictors: (Constant), Technostress

F (1,58) = 6.547, p<0.05. The regression model significantly predicts the outcome variable. It means it is a good fit for the data.

Table 7: Coefficients[a] - Technostress and job satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.307	1.648		3.826	.000
	Technostress	.082	.032	.318	2.559	.013

a. Dependent Variable: Job Satisfaction

Regression equation:
Job satisfaction = 6.307 + (0.082 x Technostress)

A unit change in the technostress will have an impact on the job satisfaction to an extent of 0.082 units. The results indicate that a linear regression established that technostress could significantly predict the job satisfaction, F (1,58) = 6.547, p<0.05 and technostress accounted for 10.1% of the explained variability of job satisfaction. Therefore, it was found that the predictor factor technostress influences the job satisfaction of the Prospective Academic Intrapreneurs. Hence, the null hypothesis H5 stating that "Technostress of Prospective Academic Intrapreneurs is not a significant predictor of their Job Satisfaction" is rejected and the alternative hypothesis is accepted based on the above result.

7. FINDINGS OF THE STUDY

1. There is a significant difference between the male and female Prospective Academic Intrapreneurs working in the educational Institution with respect to technostress experienced by them post Covid-19.
2. The study indicated that male Prospective Academic Intrapreneurs experienced more technostress in

comparison to their female counterparts.

3. There is no significant difference between age, duration of service, and location of Prospective Academic Intrapreneurs with respect to the technostress experienced by them post Covid 19.

4. Among 60 Prospective Academic Intrapreneurs working in the Educational Institution post Covid-19, none of them experienced a low level of job satisfaction, 78.33% experienced a Moderate level of job satisfaction, and 21.67% experienced a High level of job satisfaction.

5. Technostress explains 10.1% of the variability of job satisfaction. The predictor factor technostress influences the job satisfaction of the Prospective Academic Intrapreneurs post Covid 19.

8. LIMITATIONS OF THE STUDY

1. The present study is limited to 60 Prospective Academic Intrapreneurs.
2. The present study is limited to Bangalore city.
3. The participants for this study include Prospective Academic Intrapreneurs working in different Institutions experiencing different work cultures.

9. CONCLUSION

Recently, technostress has become an area of interest among many researchers and practitioners. The technostress among female Prospective Academic Intrapreneurs is less in comparison to male Prospective Academic Intrapreneurs which indicates that women find technology easy to use than men. The present study has indicated that the job satisfaction levels among Prospective Academic Intrapreneurs working in the Educational Institution post Covid-19 is ranging from moderate to high levels. Post Covid 19, there has been excessive use of ICT because of which Prospective Academic Intrapreneurs are experiencing technostress, hence the job satisfaction level among the Prospective Academic Intrapreneurs is seen to move from high level to moderate level. Technostress contributes to job satisfaction to a considerable extent, but several other factors influence the job satisfaction of Prospective Academic Intrapreneurs working in the Educational Institutions

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Impact of Hybrid Workforce Strategies: GenZ vs Millennials

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ABSTRACT
This research study is based on the study of Hybrid Workforce Strategies among GenZ and Millennials. This research would focus and study the shift of working culture with hybrid work model. It would focus on understanding the preferences of different employees and approach followed by the organisation to manage the hybrid workforce. The data collected was tabulated, analysed and presented through graphs and charts.

Key words: Hybrid Workforce Strategies, Hybrid Workforce Model, Employees, GenZ, Millennials.

1. INTRODUCTION

Today's environment of rapid change and uncertainty is putting more pressure on HR to ensure organizations have the talent they need to support changing business priorities. Strategic workforce planning establishes HR to identify talent needs related to the organization's future goals and develops a strategy to ensure that the organization has the right mix of talent, skills and employment models to achieve these goals. The purpose of workforce planning is to help organizations succeed by having a workforce of the right size, shape, cost, and ability. Proper organizational size means less friction, no job vacancies and no staff bloat. The right form consists of succession management and focuses on critical competencies.

Workforce planning is a tool that business owners can use to effectively plan their workforce within budget. A plan calculates the right number of employees for your business and the right skill set to achieve your company goals. Workforce planning is an ongoing process that ensures a company always has the right level of staff.

The three major key elements to successful workforce strategies are-Work with business to identify the changing needs, gather external labor market information and build HR capabilities to use and interpret talent data.

2. PURPOSE OF RESEARCH

The new work era post covid-19 brought in a lot of changes which proved to be a boon to some and to some a bane. The importance of time saving and work life balance was a major issue in the pre covid era and this research aims to find out whether the introduction of new hybrid working model has resolved the issue and made the organisation more effective and dynamic or not. This research would find out about the benefits and challenges the employees faced across various levels of the organisations and the strategies they devised.

3. RESEARCH GAP

From the past references taken it was observed that there were very few studies conducted by classifying the sample size into generational sets and then knowing their perspectives which have been incorporated in the project. Further studies can be conducted by classifying the population on the basis of gender as the female sect of gender had to face more difficulties while managing hybrid work model.

2. OBJECTIVES

1. To understand the benefits enjoyed by employees while working under hybrid model.
2. To identify the concerns while working under hybrid model.
3. To analyse the best strategies adopted by the organisation to implement the hybrid model.
4.

5. RESEARCH METHODOLOGY

The methodology followed for conducting the study included the specification of research design, sample design, questionnaire design, data collection and statistical tools used for analyzing the collected data. The research was conducted and analyzed in a Descriptive way. There questionnaires were circulated among 150 employees in Bengaluru out of which only 130 responded.

6. LIMITATIONS

❖ The data was collected only from the employees in Bengaluru.
❖ There was less face to face interaction.

- ❖ The questionnaire was circulated to 150 employees in Bengaluru city, out of which only 130 employees responded.
- ❖ Since the novelty of the concept, there were limited references.
- ❖ The time given to conduct the research was limited.

7. DATA ANALYSIS AND INTERPRETATION
TABLE NO.1: TABLE SHOWING BENEFITS OF HYBRID WORK MODEL AS SHARED BY GENZ Vs MILLENNIALS

PARTICULARS	GENZ	PERCENTAGE (%)	MILLENNIALS	PERCENTAGE (%)
Burnout Mitigation	1	1	7	4
Cost Effectiveness	12	9	20	13
Efficient Use of Time	32	25	27	17
Higher Productivity	22	17	18	11
Improved Job Satisfaction	1	1	1	1
Improved Work Life Balance	10	8	19	12
Increased Flexibility	37	29	45	28
New Opportunities	13	10	23	14
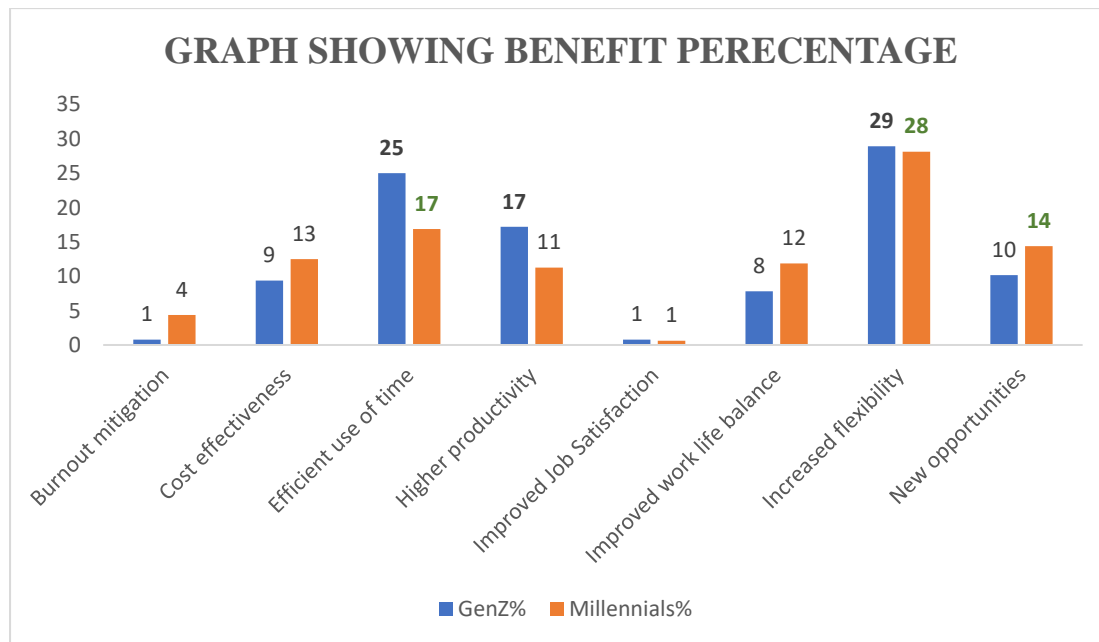
TABLE NO.2: TABLE SHOWING CONCERNS OF HYBRID WORK MODEL AS IN COMPARISON WITH GENZ AND MILLENNIALS

CONCERNS	GENZ	PERCENTAGE (%)	MILLENNIALS	PERCENTAGE (%)
Communication Glitches	20	19	19	9
Work Life Balance	2	2	2	6
Delegation Of Work	5	5	5	22
Designated Workplace	28	26	26	14
Managing Split Teams	2	2	2	4
Positive Work Culture	12	11	11	9

Technical Glitches	33	31	31	20
Time Management	6	6	6	16

GRAPH SHOWING CONCERNS COUNT : GENZ VS MILLENNIALS

	Commun ication Glitches	Work Life Balance	Delegati on of Work	Designat ed Workpla ce	Managin g Split Teams	Positive Work Culture	Technical Glitches	Time Mgt
Gen Z	20	2	5	28	2	12	33	6
Millenials	12	8	30	20	6	13	27	22

Responses Count

GRAPH SHOWING CONCERN PERCENTAGE: GENZ VS MILLENNIALS
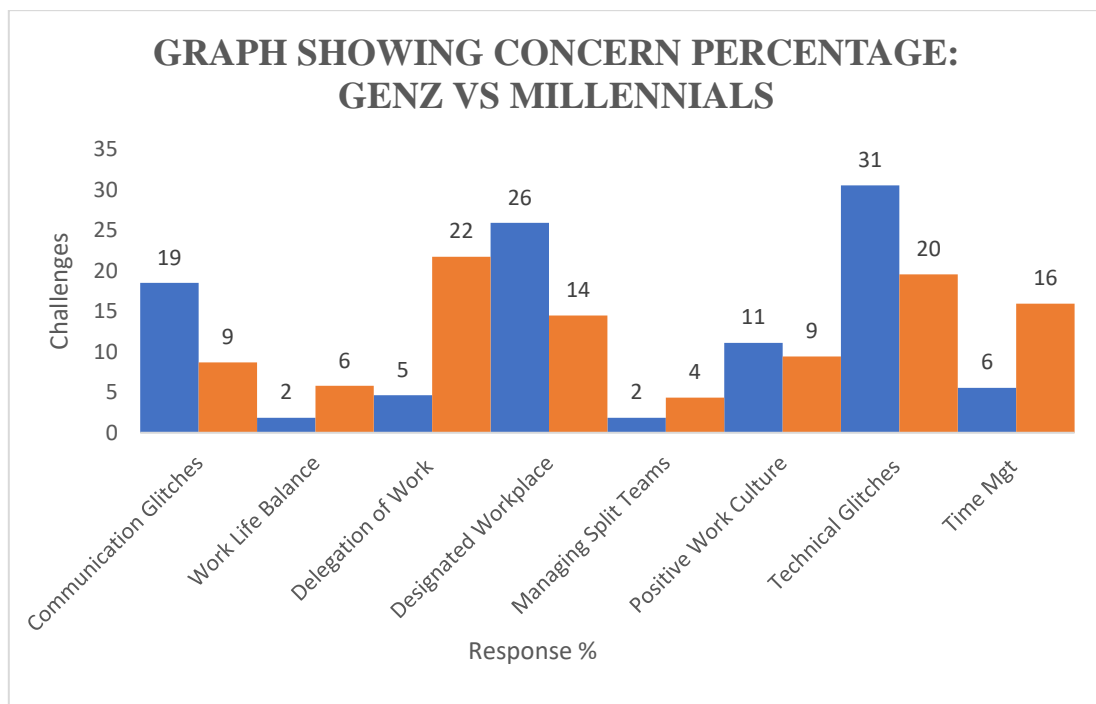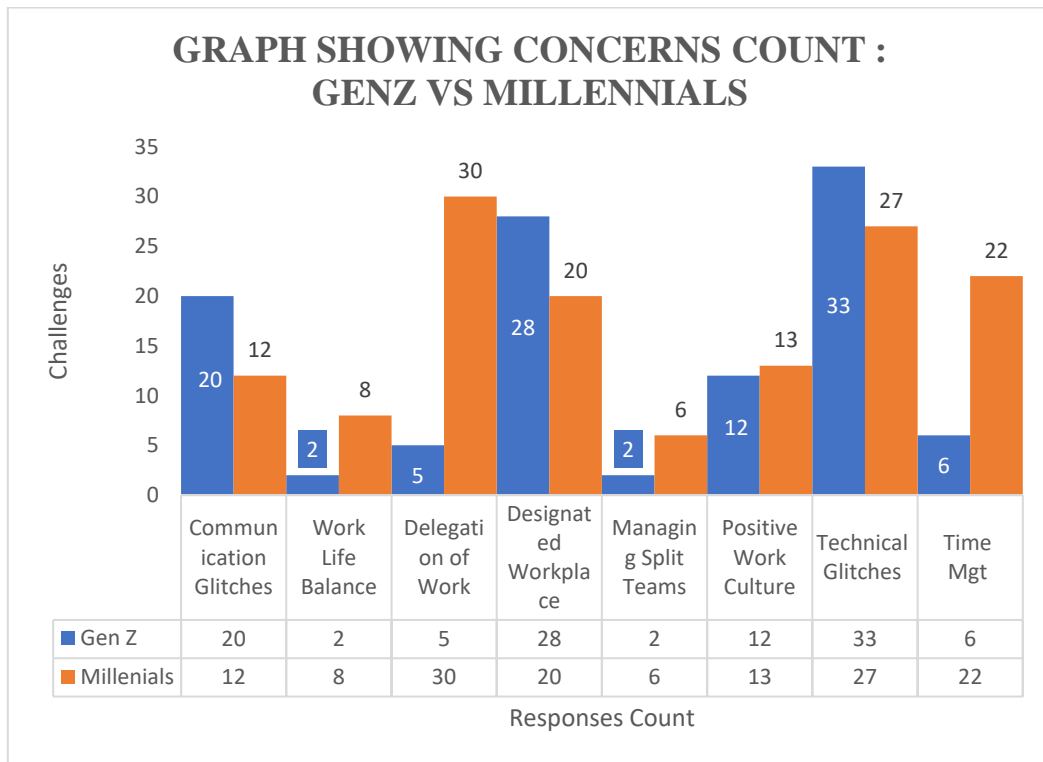
Response %

TABLE NO.3: TABLE SHOWING BEST STRATEGIES USED TO MANAGE HYBRID WORK MODEL IN COMPARISON OF GENZ Vs MILLENNIALS

PARTICULARS	GENZ		MILLENNIALS	
	RESPONSES	PERCENTAGE (%)	RESPONSES	PERCENTAGE (%)
Adaptability & Flexibility	10	10	7	5
Clear Strategy	6	6	13	9
Empathy & Listening	3	3	15	10
Planning & Time Management	22	21	24	16
Positive Culture	5	5	1	1
Regular Communication	--	--	30	20
Regular Review & Follow-Up	4	4	16	11
Regular Manager Interaction	23	22	23	15
Set Clear Expectations	7	7	21	14
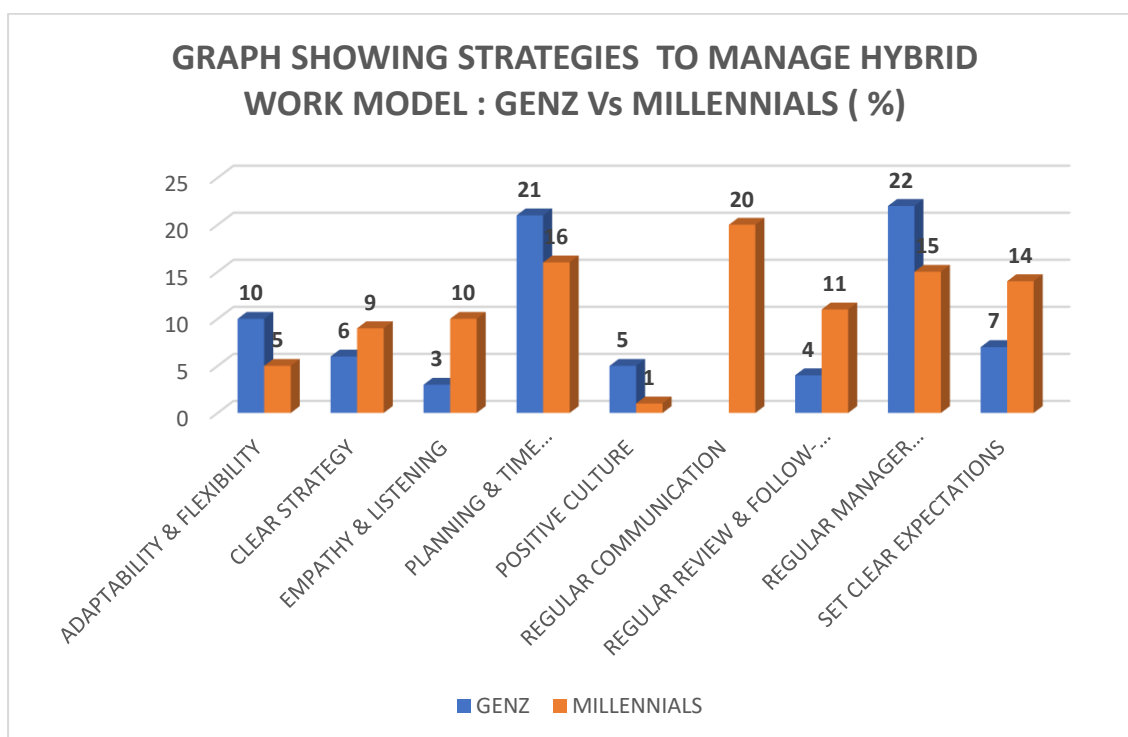
8. FINDINGS

The first part of the questionnaire consists of demographic profile which summarizes the personal questions provided to the respondents. The personal questions include information such as name, age, gender, marital status, employment status, education qualification. It showed that most of the respondents were from the age group of 31- 40 years. There were equal numbers of male and female respondents. 56.9% of the respondents are post graduate. 35.4% of the respondents preferred working model of 20% from office and 80% from home. There is a shift in the level of satisfaction among the employees as they feel that the introduction of hybrid work model has not hindered their development and career progression. The minor part of the employees feels that there is a little hindrance in their development and career progression. Higher productivity, efficient use of time and new opportunities were the top three benefits enjoyed while managing the hybrid workforce, whereas cost effectiveness, improved work life balance and improved job satisfaction were the least three benefits enjoyed by the respondents. There were certain concerns related to working with the hybrid work model such as

communication glitches, building group culture, team bonding and others. The best strategies followed by the employees while managing hybrid workforce were clear communication, setting clear expectations and planning. The employees strongly agree that the hybrid workforce model defines the new age workforce model. The employees strongly agree that the hybrid workforce model is a path that matches the ideologies of GenZ and Millennials.

9. CONCLUSION

From the above study we can conclude that, though the hybrid work model and hybrid workforce define the new era workforce model but still there are some hinderances that need to be identified and resolved. Technical and Communication glitches were the major concerns while improved work life balance and new opportunities were the benefits enjoyed equally by the respondents. It has also been observed that both GenZ and the Millennials agree that hybrid work model is the new way of working. They have been able to balance the virtual and in-person working environment but there are some differences in their expectations from the organization. While GenZ want more flexibility, the Millennials want the organization to focus on regular communication, both agree that the Hybrid work model doesn't hamper their career growth and development. In conclusion, we can say that though the introduction of hybrid work model was ones seen as a herculean task but the GenZ and Millennials with their knowledge and experience have made it one of the most effective styles for the coming future years.

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A Study of the Exploration themes of Isolation and Beauty in Snow Country by Kawabata Yasunari : A Spiritual Perspective

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ABSTRACT:
Asian aquatic literature encompasses a diverse range of literary works that explore themes related to water, rivers, oceans, and aquatic environments. "Snow Country" (Yukiguni) is a novel written by the Japanese author Yasunari Kawabata. It was first published in 1947 and is considered one of Kawabata's most famous and important works. The novel is often associated with the Japanese literary movement known as "shinsho," or "new writing," which emerged in the early 20th century."Snow Country" by Yasunari Kawabata provides several insights into the relationship between Asian cultures, particularly Japanese culture, and aquatic environments, as the story is set in a remote hot spring village in a snow-covered mountainous region.
Keywords: Aquatic Literature, Snow Country, Environmental, Isolation, Beauty

1. ASIAN AQUATIC LITERATURE:

Asian aquatic literature encompasses a diverse range of literary works that explore themes related to water, rivers, oceans, and aquatic environments. These works often reflect the cultural, social, and environmental significance of water in Asian societies.

2. SOME EXAMPLES AND THEMES ASSOCIATED WITH ASIAN AQUATIC LITERATURE:

River Novels in China: Chinese literature has a rich tradition of river novels (also known as "shuihuzhuan" or "water margin novels"). One of the most famous examples is "Water Margin" (Shuihuzhuan), attributed to Shi Nai'an. These novels often depict the lives of outlaws who seek refuge along rivers, exploring themes of rebellion, justice, and societal norms.

Poetry and Water in Japan: Japanese poetry, particularly in the form of haiku and tanka, frequently features references to water and nature. Poets like Matsuo Basho are known for their evocative verses that capture the beauty and serenity of water bodies, such as ponds and streams. These poems often reflect themes of transience and contemplation.

Maritime Literature in Southeast Asia: Southeast Asian countries with coastlines, such as Indonesia and the Philippines, have a rich tradition of maritime literature. These works often revolve around seafaring adventures, legends of the sea, and the significance of the ocean in trade and cultural exchange.

Folklore and Water Spirits: Many Asian cultures have folklore and myths centered around water spirits, river deities, and sea creatures. These stories often blend the spiritual and natural worlds, emphasizing the respect and reverence for aquatic environments.

Environmental Concerns: Contemporary Asian literature increasingly explores environmental concerns related to water. Authors address issues such as pollution, overfishing, and the impact of climate change on aquatic ecosystems. These works shed light on the urgent need for conservation and sustainable practices.

Historical Narratives: Historical novels set against the backdrop of rivers or oceans often delve into themes of exploration, trade, and conflict. These narratives provide insights into the role of water in shaping the course of history in Asia.

Water as Metaphor: Water is frequently used as a metaphor in Asian literature to represent the flow of time, emotions, and life itself. Its fluidity and ever-changing nature make it a powerful symbol for a range of human experiences.

Contemplative Writing: Asian aquatic literature often includes contemplative writing that encourages readers to reflect on the relationship between humans and the natural world. These works offer moments of stillness and introspection.

Water and Identity: In many Asian cultures, water is closely tied to cultural identity. Literature often explores how people's relationships with water contribute to their sense of self and community.

Rituals and Ceremonies: Water plays a central role in various Asian rituals and ceremonies, from purification rituals to traditional celebrations like the Thai Songkran festival. Literature sometimes provides insights into the cultural significance of these practices.

3.   ABOUT "SNOW COUNTRY":

Asian aquatic literature, like literature from any region, reflects the unique perspectives and experiences of its authors and societies. It encompasses a wide range of genres and styles, offering readers an opportunity to explore the multifaceted relationship between humans and the aquatic world in Asian contexts.

"Snow Country" (Yukiguni) is a novel written by the Japanese author Yasunari Kawabata. It was first published in 1947 and is considered one of Kawabata's most famous and important works. The novel is often associated with the Japanese literary movement known as "shinsho," or "new writing," which emerged in the early 20th century.

"Snow Country" is a beautifully written and lyrical novel that tells the story of a love affair between a Tokyo dilettante named Shimamura and a geisha named Komako. The novel is set in a remote hot spring village in the snow-covered mountains of western Japan. It explores themes of love, desire, isolation, and the transitory nature of human existence.

The novel is known for its evocative descriptions of the natural landscape, particularly the snow-covered countryside, and its portrayal of the complex emotions and relationships of its characters. Kawabata's prose is often characterized by its subtlety and sensitivity to the inner lives of his characters.

"Snow Country" is considered a classic of Japanese literature and has been translated into many languages. It won the Nobel Prize in Literature for Yasunari Kawabata in 1968, making him the first Japanese author to receive the prestigious award. The novel continues to be widely read and studies both in Japan and around the world for its literary excellence and its exploration of universal human themes.

4. ABOUT KAWABATA YASUNARI BIOGRAPHY:

Yasunari Kawabata was a prominent Japanese novelist and short story writer known for his lyrical and evocative prose. He was born on June 14, 1899, in Osaka, Japan, and he grew up in a traditional Japanese household. His father died when he was just two years old, and this early loss had a significant impact on his life and literary work.

Early Life: Yasunari Kawabata was raised by his mother and maternal grandfather after the early death of his father. He developed a deep appreciation for Japanese culture and literature from a young age. He attended the Tokyo Imperial University (now the University of Tokyo), where he studied literature.

Literary Career: Kawabata's literary career began in the 1920s when he started publishing short stories in literary magazines. He was part of the literary movement known as "shinsho," which sought to create a new form of Japanese literature. His early works were influenced by modernist European literature.

Notable Works: Some of his most famous works include "Snow Country" (Yukiguni), "Thousand Cranes" (Senbazuru), "The Sound of the Mountain" (Yama no Oto), and "The Master of Go" (Meijin). These works often explored themes of love, desire, solitude, and the intricacies of human relationships.

Nobel Prize: In 1968, Yasunari Kawabata was awarded the Nobel Prize in Literature, becoming the first Japanese author to receive this prestigious honor. The Nobel committee cited his "narrative mastery, which with great sensibility expresses the essence of the Japanese mind."

Personal Life: Kawabata was known as a private and introspective individual. He was deeply affected by the traumas of World War II, and themes of impermanence and loss are prevalent in his works. He never married and did not have any children.

Later Life and Death: Yasunari Kawabata continued to write prolifically throughout his life. However, on April 16, 1972, at the age of 72, he tragically took his own life by carbon monoxide poisoning in his Tokyo apartment. The reasons for his suicide remain a subject of speculation and debate among scholars.

Yasunari Kawabata's literary legacy endures through his novels, short stories, and contributions to Japanese literature. His ability to capture the nuances of human emotions and the beauty of the Japanese landscape has left a lasting impact on readers both in Japan and around the world.

3.   SUMMARY OF SNOW COUNTRY:

"Snow Country" (Yukiguni) by Yasunari Kawabata is a novel that explores themes of love, desire, isolation, and the fleeting nature of human existence. Set in a remote hot spring village in the snow-covered mountains of western Japan, the story revolves around the complicated love affair between the protagonist, Shimamura, and a geisha named Komako.

Setting: The story is primarily set in a small, isolated hot spring village in the snowy mountains of western Japan. The village is known for its beauty and tranquility, making it a popular destination for visitors seeking solace and relaxation.

Characters:

Shimamura: The central character, Shimamura, is a wealthy dilettante from Tokyo who travels to the village to enjoy its hot springs and scenic beauty. He is a complex character who is introspective and somewhat detached from the world around him.

Komako: Komako is a young and beautiful geisha who works in the village. She becomes emotionally involved with Shimamura and is deeply in love with him. Her character is marked by her passion, vulnerability, and tragic circumstances.

Yoko: Yoko is another geisha in the village and Komako's friend. She has her own romantic entanglements and adds depth to the story.

Plot:

The novel begins with Shimamura's visit to the village during the winter season. He frequents the hot springs, where he encounters Komako and becomes entranced by her beauty and charm.

Shimamura and Komako's relationship is marked by a mix of desire, longing, and emotional distance. While Shimamura is fascinated by Komako, he remains somewhat aloof and hesitant to fully commit to her.Throughout the story, the characters grapple with their own emotions and the challenges posed by societal expectations, particularly in the context of traditional Japanese geisha culture.

The novel explores themes of transience, both in terms of the changing seasons and the fleeting nature of human relationships. It also delves into the idea of unattainable desires and the consequences of pursuing them.As the narrative unfolds, we see the characters' inner turmoil and the tragic consequences of their choices. The story ultimately concludes with a sense of melancholy and the realization that some desires can never be fulfilled.

"Snow Country" is celebrated for its lyrical prose and evocative descriptions of the snowy landscape, as well as its exploration of the inner lives of its characters. It is a classic work of Japanese literature that delves into the complexities of human emotions and the beauty of the natural world while examining the profound impact of unfulfilled desires.

4. **THE INSIGHTS INTO THE RELATIONSHIP BETWEEN ASIAN CULTURES AND AQUATIC ENVIRONMENTS IN SNOW COUNTRY:**

"Snow Country" by Yasunari Kawabata provides several insights into the relationship between Asian cultures, particularly Japanese culture, and aquatic environments, as the story is set in a remote hot spring village in a snow-covered mountainous region.

Hot Springs and Onsen Culture: The hot spring village in "Snow Country" is known for its onsen, or hot springs. Onsen culture is deeply ingrained in Japanese society, and it has historical and cultural significance. People visit onsens not only for physical relaxation but also for spiritual rejuvenation. The hot springs symbolize the healing and cleansing power of water, which is a common theme in Asian cultures. The tranquil, snow-covered landscape surrounding the onsen adds to the sense of purity and serenity associated with water.

Seasonal Changes and Water: The novel vividly portrays the changing seasons, with a particular emphasis on the heavy snowfall in the winter. Snow is a vital source of water for the region, and its arrival and departure mark significant transitions in the characters' lives. The constant interaction between water (in the form of snow and hot springs) and the characters' experiences underscores the theme of impermanence, which is central to many Asian philosophies.

Nature and Human Connection: In Asian cultures, there is often a deep reverence for nature and a sense of interconnectedness with the natural world. "Snow Country" reflects this connection through its descriptions of the landscape, the hot springs, and the characters' interactions with the environment. Nature is not just a backdrop but an active participant in the story, influencing the characters' emotions and actions.

Symbolism of Water: Water holds symbolic significance in many Asian cultures. It can represent purification, renewal, and the flow of life. In the novel, the hot springs serve as a place of physical and emotional cleansing for the characters. The act of bathing in the onsen is not just about cleansing the body but also about purifying the soul, which is a common belief in Asian cultures.

Contrast Between Water and Snow: The contrast between the flowing, warm water of the onsen and the cold, still snow outside is a recurring motif in the story. This duality represents the tension between desire and restraint, life and death, and the transient nature of existence. It highlights the idea that life, like water, is ever-changing and impermanent.

Cultural Traditions and Rituals: The novel also explores the traditional rituals associated with onsen culture, such as the etiquette of bathing and the exchange of gifts between guests and geishas. These customs reflect the deep respect for tradition and the role of water in these rituals.

In "Snow Country," Yasunari Kawabata skillfully weaves together elements of nature, culture, and human experience to provide insights into the complex relationship between Asian cultures and aquatic environments. The natural landscape and the presence of water serve as both a backdrop and a powerful symbol that enhances the depth and meaning of the narrative.

5.   THEMES OF LOVE IN SNOW COUNTRY:

"Snow Country" by Yasunari Kawabata explores the theme of love in various complex and nuanced ways. Love is a central element of the novel, but it is depicted with subtlety and often accompanied by a sense of melancholy. Here are some of the key themes related to love in "Snow Country":

Forbidden Love: One of the central themes of the novel is the forbidden love between Shimamura, a married man from Tokyo, and Komako, a geisha in the remote hot spring village. Their love is forbidden not only because of Shimamura's marital status but also because of the societal norms and expectations of the time. This forbidden aspect of their relationship adds tension and complexity to their love.

Unattainable Desire: Love in "Snow Country" is often portrayed as unattainable or elusive. Shimamura and Komako's love for each other is marked by a sense of longing and unfulfilled desires. They struggle to bridge the gap between their feelings and the realities of their lives, which creates a sense of melancholy.

Isolation and Loneliness: Love in the novel is intertwined with feelings of isolation and loneliness. Both Shimamura and Komako are lonely individuals who find a connection with each other, but this connection is fragile and does not entirely alleviate their sense of isolation. The snowy, remote setting of the village reinforces the characters' isolation.

Transient Nature of Love: The novel highlights the transient nature of love and desire. The changing seasons, particularly the heavy snowfall, serve as metaphors for the impermanence of human emotions. Love, like the snow, can be beautiful but fleeting, and this impermanence is a recurring theme.

Cultural and Social Barriers: Love in "Snow Country" is influenced by cultural and social barriers. The characters are constrained by the expectations of their roles in society, and these constraints affect the expression and realization of their love. The geisha culture, in particular, plays a significant role in shaping the dynamics of love in the story.

Sacrifice and Tragedy: Love in the novel is also associated with sacrifice and tragedy. Komako, in particular, makes significant sacrifices for her love for Shimamura, which adds a tragic dimension to their relationship. The story explores the consequences of pursuing one's desires, even when societal norms and personal circumstances make it challenging.

Ineffable Beauty: Despite the challenges and limitations of their love, the novel celebrates the ineffable beauty of the emotional connection between Shimamura and Komako. Kawabata's lyrical prose and evocative descriptions convey the depth of their feelings and the beauty of their moments together.

In "Snow Country," Yasunari Kawabata presents love as a complex and multifaceted emotion that is shaped by societal norms, personal desires, and the impermanence of human existence. The novel's exploration of love adds depth and emotional resonance to the story and is central to the characters' experiences and dilemmas.

6.   THEMES OF SPIRITUALITY IN SNOW COUNTRY

"Spirituality" in "Snow Country" by Yasunari Kawabata is a subtle but significant theme that permeates the novel. While the story primarily focuses on the complex relationships and emotions of the characters, elements of spirituality and transcendence are interwoven throughout the narrative. Here are some themes related to spirituality in "Snow Country":

Nature and Transcendence: The natural landscape, particularly the snow-covered mountains and the hot springs, serves as a backdrop for moments of spiritual reflection and transcendence. The characters often find solace and a sense of the divine in the beauty and serenity of the natural world. Nature is not just a physical setting but a spiritual force that can elevate the characters' consciousness.

Bathing Rituals and Purification: The act of bathing in the onsen (hot springs) is portrayed as a ritual of purification and spiritual renewal. In Japanese culture, bathing is not only a physical cleansing but also a spiritual one. The hot springs represent a space where individuals can cleanse their bodies and souls, shedding their worldly concerns and connecting with a deeper, more profound aspect of themselves.

Cultural Traditions: The novel explores various cultural traditions and rituals associated with the onsen and geisha culture. These traditions, whether it's the etiquette of bathing or the exchange of gifts, have spiritual dimensions. They reflect a respect for tradition and the idea of finding meaning and connection through shared cultural practices.

Solitude and Contemplation: The characters in "Snow Country" often experience moments of solitude and contemplation in the midst of the natural beauty that surrounds them. These moments of introspection can be seen as spiritual in nature, as the characters reflect on their own lives, desires, and the impermanence of existence.

Suffering and Redemption: The characters in the novel grapple with suffering, both physical and emotional. Their experiences of suffering are depicted as transformative and potentially redemptive. Suffering can lead to a deeper understanding of oneself and one's place in the world, which is a theme often explored in spiritual and philosophical traditions.

Spiritual Longing: Many characters in the novel, particularly Komako, experience a deep sense of longing or yearning. This spiritual longing goes beyond mere romantic or physical desires; it represents a search for meaning and a connection to something greater than themselves.

Impermanence and Zen Buddhism: The theme of impermanence, a central concept in Zen Buddhism, is evident throughout the novel. The changing seasons, the melting snow, and the fleeting nature of love all reflect the impermanence of life. This impermanence can be a source of existential reflection and a reminder of the importance of living in the present moment.

In "Snow Country," Yasunari Kawabata subtly weaves elements of spirituality into the narrative, allowing readers to contemplate the deeper dimensions of human existence, the relationship between the self and the natural world, and the pursuit of spiritual enlightenment amid the complexities of everyday life. The novel's themes of nature, rituals, solitude, and suffering contribute to its rich exploration of spirituality.

9. THEMES OF ENVIRONMENTAL CONCERNS:

"Snow Country" by Yasunari Kawabata, while primarily a novel focused on human relationships and emotions, contains themes related to environmental concerns, particularly in the context of the natural landscape of the remote hot spring village. These themes highlight the interaction between the characters and their environment, as well as broader ecological and environmental considerations.

Natural Beauty and Tranquility: The novel vividly portrays the natural beauty and tranquility of the snow-covered mountainous region where the story is set. The descriptions of the landscape, with its pristine snowscapes and picturesque scenes, emphasize the importance of preserving and appreciating the natural world. The beauty of the environment provides a stark contrast to the complexities of human relationships and serves as a source of solace.

Environmental Harmony: The characters in the novel are inextricably linked to the natural environment, particularly the hot springs and the snowy landscape. There is a sense of harmony between the characters and their surroundings, emphasizing the idea that human existence should coexist harmoniously with nature rather than exploit it.

Seasonal Changes and Impermanence: The changing seasons, especially the arrival of heavy snowfall and the subsequent melting of snow, are recurring motifs in the novel. These seasonal changes symbolize the impermanence of both the natural world and human existence. The characters' experiences are shaped by the rhythms of nature, underscoring the fragility of the environment.

Ecological Balance: While the novel does not explicitly delve into ecological issues, it does allude to the delicate balance of the natural world. The characters' interactions with the environment, such as the geothermal activity of the hot springs, suggest a recognition of the need to respect and protect the ecological balance of the region.

Isolation and Vulnerability: The remote setting of the hot spring village highlights the vulnerability of the environment and its isolation from urban centers. The characters are aware of the challenges posed by the harsh winter conditions and the need to adapt to the environment in order to survive.

Traditional Practices: The novel touches upon traditional practices associated with the hot springs and geisha culture, such as the etiquette of bathing and the use of natural materials. These practices reflect a reverence for tradition and a connection to the environment, as they are deeply rooted in the local culture and landscape.

While "Snow Country" primarily focuses on human emotions, relationships, and the transient nature of existence, the novel also conveys a subtle message about the intrinsic connection between humans and their natural surroundings. The themes related to the environment serve as a backdrop to the characters' experiences, highlighting the importance of preserving and respecting the natural world in the face of urbanization and modernization.

10. THEMES OF HISTORICAL EVENTS IN SNOW COUNTRY

"Snow Country" by Yasunari Kawabata primarily centers on intimate human relationships and emotions, but it also touches on certain historical and cultural aspects of Japanese society during the time the novel is set (early to mid-20th century). While the novel is not primarily concerned with historical events, some themes related to history and societal changes can be discerned:

Rural vs. Urban Divide: The novel portrays the contrast between the remote hot spring village and the urban life of Tokyo. This juxtaposition reflects the historical and cultural divide between rural and urban Japan during the early to mid-20th century. Shimamura's status as a city dweller and Komako's life in the rural village highlight these distinctions.

Traditional vs. Modern: "Snow Country" subtly touches on the tension between traditional Japanese culture and the encroachment of modernity. The onsen culture, geisha traditions, and the rural way of life in the village represent traditional aspects of Japanese society. Shimamura's presence, as a modern urbanite, represents the changing values and influences of modernization. This theme is not overtly discussed but is implied through the characters and their interactions.

Post-War Effects: While the novel doesn't directly address World War II or its immediate aftermath, it is set in a period of significant social and cultural change in Japan, following the war's end. Japan's post-war reconstruction and modernization are underlying historical contexts. The war and its consequences are not central to the story, but they provide a backdrop to the characters' lives and struggles.

Cultural Shifts: "Snow Country" reflects the shifting cultural norms and societal expectations in Japan during the 20th century. The characters, particularly Komako and Yoko, grapple with the changing roles and expectations for women in Japanese society. This evolving cultural landscape is indicative of broader historical shifts in gender roles and societal norms in Japan.

Western Influences: The presence of Shimamura, who is depicted as someone with Western sensibilities and an appreciation for Western art, hints at the influence of Western culture on Japan during the early 20th century. This theme of Westernization, though not central, underscores the broader historical context of Japan's engagement with the West.

It's important to note that "Snow Country" is primarily a work of literary fiction, and its focus is on the intricacies of human relationships and the inner lives of the characters. While historical and societal themes are present, they serve as a backdrop to the central narrative rather than being the central focus of the novel. Nonetheless, these themes provide depth and context to the story, helping to situate the characters within a broader historical and cultural framework.

11.   THE EXPLORATION THEMES OF ISOLATION AND BEAUTY IN SNOW COUNTRY

"Snow Country" by Yasunari Kawabata is a novel that skillfully explores the themes of isolation and beauty, both in the characters' inner lives and in their interactions with the natural and cultural elements of the remote hot spring village.

Isolation:

Geographic Isolation: The novel is set in a remote hot spring village deep in the snow-covered mountains of western Japan. The geographic isolation of the village is a central element of the story. The characters are physically cut off from the outside world during the heavy winter snows, highlighting their isolation from urban society.

Emotional Isolation: Many of the characters in the novel, particularly Shimamura and Komako, experience a deep sense of emotional isolation. Shimamura, for instance, is detached and introspective, and he struggles to connect with others on a meaningful level. Komako, despite her profession as a geisha, is emotionally isolated due to her unrequited love for Shimamura.

Cultural Isolation: The novel also portrays the cultural isolation of the village. It is a place where traditional customs and rituals, such as those associated with geisha culture and onsen etiquette, are preserved. This cultural isolation contrasts with the changing urban culture of Tokyo, where Shimamura resides.

Social Isolation: The characters in "Snow Country" often grapple with a sense of social isolation, as they navigate societal expectations and norms that hinder their ability to form deep connections or pursue their desires openly. For example, Shimamura's marriage and Komako's geisha status are sources of social isolation for them.

Beauty:

Natural Beauty: The novel is renowned for its exquisite descriptions of the natural beauty of the snow-covered landscape and the tranquility of the hot spring village. Yasunari Kawabata's lyrical prose captures the ethereal and ephemeral beauty of the surroundings, emphasizing the idea that even in isolation, there is profound beauty to be found in nature.

Human Beauty: The beauty of the characters themselves is a recurring theme in the novel. Shimamura is drawn to Komako's physical beauty, and Komako's geisha training emphasizes the art of physical beauty and grace. However, this physical beauty often serves as a facade, masking the emotional complexities and isolation that lie beneath the surface.

Inner Beauty: The novel delves into the inner beauty of the characters as well. Despite their flaws and emotional struggles, Shimamura and Komako possess qualities that make them deeply human and relatable. The exploration of their inner lives and vulnerabilities adds depth to their characters.

Beauty in the Mundane: "Snow Country" finds beauty in the ordinary and the everyday moments of life. The novel celebrates the small gestures, such as the exchange of gifts or the act of sharing a meal, as moments of beauty and connection amid the characters' isolation.

In "Snow Country," Yasunari Kawabata masterfully weaves together themes of isolation and beauty, using the remote setting, the characters' emotional experiences, and the natural and cultural elements of the story to create a rich and evocative narrative. The novel invites readers to contemplate the complexities of human relationships, the allure of beauty, and the profound impact of isolation on the human condition.

12. SNOW COUNTRY IN SPIRITUAL PERSPECTIVE

"Snow Country" by Yasunari Kawabata can be explored from various spiritual perspectives, as it touches on themes of transcendence, impermanence, and the search for meaning within the context of a remote and natural landscape.

Zen Buddhism and Impermanence: Zen Buddhism, with its emphasis on impermanence and the transient nature of all things, provides a lens through which to view "Snow Country." The changing seasons, particularly the heavy snowfall and its subsequent melting, serve as symbols of impermanence. The characters' experiences, desires, and relationships are fleeting, highlighting the Buddhist notion of the impermanence of life and the importance of living in the present moment.

Nature as a Spiritual Force: The novel portrays nature, including the snow-covered mountains, hot springs, and pristine landscapes, as a spiritual force. The characters often find solace and a sense of the divine in the beauty and serenity of the natural world. This connection between humans and nature is reminiscent of Shintoism, the indigenous Japanese belief system that emphasizes the presence of kami, or spirits, in natural elements.

Bathing as Ritual: The act of bathing in the hot springs (onsen) is presented as a ritual of purification and spiritual renewal. This ritual reflects the idea that cleansing the body in the onsen also cleanses the soul. It echoes the spiritual rituals found in various world religions, where water symbolizes purification and transformation.

Suffering and Spiritual Growth: Several characters in the novel, particularly Komako, endure suffering, whether it's physical, emotional, or societal. In many spiritual traditions, suffering is seen as a path to spiritual growth and enlightenment. Komako's suffering and her emotional journey can be seen as a process of self-discovery and a search for deeper meaning.

Solitude and Contemplation: The characters in "Snow Country" often experience moments of solitude and contemplation amidst the natural beauty that surrounds them. These moments of introspection can be seen as spiritual in nature, as the characters reflect on their own lives, desires, and the impermanence of existence. Solitude can provide an opportunity for spiritual reflection and self-discovery.

Desire and Attachment: Buddhist philosophy emphasizes the dangers of attachment and desire, as they can lead to suffering. The characters in the novel, particularly Shimamura and Komako, grapple with intense desires and attachments that can be both enriching and painful. Their struggles reflect the Buddhist concept of the suffering caused by clinging to impermanent things.

Search for Meaning: Ultimately, the novel can be seen as a search for meaning in a world marked by impermanence and isolation. The characters seek meaning and connection, and their individual journeys can be interpreted as spiritual quests, driven by a longing for transcendence and understanding.

"Snow Country" invites readers to contemplate the spiritual dimensions of human existence, the profound connection between humans and nature, and the search for meaning in a world characterized by beauty, impermanence, and isolation. It encourages reflection on the timeless questions of the human condition from various spiritual perspectives.

13. CONCLUSION FOR SPIRITUAL PERSPECTIVES OF SNOW COUNTRY

"Snow Country" by Yasunari Kawabata offers a profound exploration of spiritual themes within the context of a remote and snow-covered landscape. The novel invites readers to contemplate the interconnectedness of humans with nature, the impermanence of life, and the quest for meaning and transcendence in the face of isolation and desire.

Through its vivid portrayal of the natural world and the characters' inner lives, the novel echoes themes found in various spiritual and philosophical traditions, including Zen Buddhism, Shintoism, and the broader human search for spiritual enlightenment. The changing seasons, the act of bathing, and moments of solitude serve as symbolic reminders of impermanence and the opportunity for spiritual growth.

"Snow Country" challenges readers to reflect on the complexities of human relationships, the allure of beauty, and the profound impact of isolation, all through a spiritual lens. It encourages us to consider the timeless questions of existence, the impermanence of desires, and the enduring quest for deeper understanding and connection. In doing so, it becomes not just a literary masterpiece but a spiritual exploration of the human condition.

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A Study of The Psychoanalytic theory in the Character of Job in the Bible: A Spiritual Perspective

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ABSTRACT:

Psychoanalytic theory has had a profound influence on the field of psychology and has spawned various offshoots and adaptations. Sigmund Freud (1856-1939) was an Austrian neurologist and the founder of psychoanalysis, a clinical method for treating psychopathology through dialogue between a patient and a psychoanalyst. The psychoanalytic theory of personality, developed by Sigmund Freud, is a comprehensive framework for understanding how human personality is structured and how it develops over time. The Book of Job is a profound exploration of the human experience of suffering, the limitations of human understanding, and the mysteries of divine providence. It serves as a timeless narrative that continues to resonate with readers, inviting them to reflect on the profound psychological and spiritual dimensions of the human experience.

KEYWORDS: Psychoanalytic theory, Job, Sigmund Freud ,spiritual context, Spiritual Perspectives

INTRODUCTION

PSYCHOANALYTIC THEORY:

Psychoanalytic theory is a comprehensive psychological framework developed by Sigmund Freud in the late 19th and early 20th centuries. It seeks to understand human behavior, personality development, and mental processes through the lens of unconscious thoughts and emotions. Psychoanalytic theory has had a profound influence on the field of psychology and has spawned various offshoots and adaptations.

Key concepts and components of psychoanalytic theory:

Unconscious Mind: Freud believed that a significant portion of our thoughts, feelings, and desires exists in the unconscious mind, which is not readily accessible to our conscious awareness. He argued that unconscious conflicts and desires influence our behavior and can lead to psychological disorders.

Three Levels of Mind:

Conscious Mind: This is the part of the mind that contains thoughts and perceptions that we are currently aware of.

Preconscious Mind: Thoughts and memories that are not currently in our conscious awareness but can be easily brought into consciousness.

Unconscious Mind: The deepest level of the mind, containing repressed memories, traumatic experiences, and forbidden desires.

Structure of Personality:

Id: The primitive, instinctual part of the personality that seeks pleasure and immediate gratification. It operates on the pleasure principle.

Ego: The rational, conscious part of the personality that mediates between the id's desires and the demands of reality. It operates on the reality principle.

Superego: The moral and ethical part of the personality, representing societal and parental values and standards. It acts as a conscience and enforces moral principles.

Defense Mechanisms: Mechanisms the ego employs to protect itself from anxiety caused by conflicts between the id, ego, and superego. Examples include repression, denial, projection, and sublimation.

Psychosexual Stages: Freud proposed that human development occurs in distinct stages, each characterized by a focus on a specific erogenous zone and associated conflicts. These stages include oral, anal, phallic, latent, and genital stages.

Oedipus Complex: A central concept in psychoanalytic theory, the Oedipus complex refers to a child's sexual desire for the opposite-sex parent and a sense of rivalry with the same-sex parent. Resolution of this complex is crucial for healthy development.

Free Association: A psychoanalytic technique in which patients are encouraged to freely share their thoughts and associations without censorship, allowing the therapist to uncover unconscious material.

Dream Analysis: Freud believed that dreams are a window into the unconscious mind. Psychoanalysts often analyze dreams to uncover hidden conflicts and desires.

Transference: The phenomenon where a patient unconsciously redirects feelings and attitudes toward the therapist that were originally felt toward significant figures in their life, such as parents.

Catharsis: The release of emotional tension and relief from psychological distress that can occur through the process of psychoanalysis.

It's important to note that while psychoanalytic theory has had a significant impact on the field of psychology, it has also been criticized and modified by subsequent schools of thought, such as behaviorism, cognitive psychology, and humanistic psychology. Contemporary psychoanalysis has evolved to incorporate new ideas and techniques, and many modern therapists use psychoanalytic principles in combination with other therapeutic approaches.

ABOUT SIGMUND FREUD:

Sigmund Freud (1856-1939) was an Austrian neurologist and the founder of psychoanalysis, a clinical method for treating psychopathology through dialogue between a patient and a psychoanalyst. He is considered one of the most influential figures in the history of psychology and has had a lasting impact on fields such as psychiatry, psychology, and the study of human behavior.

EARLY LIFE AND EDUCATION:

Birth: Sigmund Freud was born on May 6, 1856, in Freiberg, Moravia (now part of the Czech Republic), into a Jewish family.

Education: He studied medicine at the University of Vienna and earned his medical degree in 1881.

CAREER:

Neurology: Initially, Freud worked as a neurologist and conducted research on cerebral palsy, aphasia, and other neurological disorders.

Psychoanalysis: In the late 19th century, Freud developed the concept of psychoanalysis, a therapeutic method for treating mental disorders by exploring the unconscious mind and its influence on thoughts, feelings, and behaviors.

Key Works: Freud's major works include "The Interpretation of Dreams" (1899), "The Psychopathology of Everyday Life" (1901), and "Three Essays on the Theory of Sexuality" (1905). His ideas on the Oedipus complex, the unconscious mind, and defense mechanisms have had a profound impact on psychology and culture.

Vienna Circle: Freud established a circle of followers and colleagues known as the Vienna Psychoanalytic Society, which played a pivotal role in the development and spread of psychoanalysis.

CONTRIBUTIONS:

Structural Model: Freud proposed a structural model of the mind, consisting of three components: the id (primitive, instinctual drives), the ego (conscious self), and the superego (internalized moral standards).

Dream Analysis: He introduced the idea that dreams are a window into the unconscious and can reveal repressed desires and conflicts.

Sexuality: Freud's theories on human sexuality challenged prevailing Victorian norms and contributed to a more open discussion of sexual issues.

Defense Mechanisms: Freud identified various defense mechanisms, such as repression, denial, and projection, that people use to cope with anxiety and protect their self-esteem.

LATER LIFE:

Exile: Due to the rise of the Nazi regime, Freud and his family left Austria in 1938 and settled in London, where he spent the final years of his life.

Death: Sigmund Freud passed away on September 23, 1939, in London, at the age of 83.

Legacy:

Freud's work laid the foundation for modern psychotherapy and influenced a wide range of fields, including psychology, psychiatry, literature, and art.Despite criticism and revisions of some of his theories over the years, Freud's ideas continue to be discussed and debated in the fields of psychology and psychoanalysis.

Sigmund Freud's impact on the understanding of human psychology and behavior remains significant, and his work continues to be a subject of study and fascination in the realm of mental health and beyond.

PSYCHOANALYTIC THEORY BY SIGMUND FREUD

Psychoanalytic theory, developed by Sigmund Freud, is one of the most influential and enduring theories in the field of psychology and psychotherapy. Freud's work laid the foundation for the understanding of human personality, behavior, and the role of the unconscious mind.

It's important to note that while Freud's psychoanalytic theory has had a significant impact on psychology and psychotherapy, it has also been subject to criticism and revision by subsequent generations of psychologists and

therapists. Modern psychoanalysis has evolved, incorporating new ideas and approaches while retaining some of the foundational concepts introduced by Freud.

PSYCHOANALYTIC THEORY OF PERSONALITY

The psychoanalytic theory of personality, developed by Sigmund Freud, is a comprehensive framework for understanding how human personality is structured and how it develops over time. According to this theory, personality is influenced by various unconscious processes and conflicts. Here are the key components of the psychoanalytic theory of personality:

Three Levels of Consciousness:

Conscious Mind: This is the level of awareness that contains thoughts and perceptions you are currently aware of. It represents only a small portion of your overall mental activity.

Preconscious Mind: The preconscious contains thoughts and memories that are not in your immediate awareness but can be easily brought into consciousness with a little effort.

Unconscious Mind: The unconscious mind is the deepest and largest part of the mind. It contains thoughts, memories, desires, and emotions that are hidden from conscious awareness. Freud believed that much of our behavior and psychological processes are determined by the unconscious.

The Structure of Personality:

Id: The id is the most primitive and instinctual part of personality. It operates on the pleasure principle, seeking immediate gratification of desires and impulses, without regard for morality or consequences.

Ego: The ego is the rational and conscious part of personality. It develops to mediate between the id's impulsive demands and the superego's moral constraints. The ego operates on the reality principle, trying to find realistic ways to satisfy the id's desires while considering the consequences.

Superego: The superego represents internalized societal and moral standards. It acts as a moral conscience and strives for perfection. It develops through the process of socialization and learning from parents and authority figures.

Psychosexual Stages of Development:

Freud proposed that personality development occurs in stages, each associated with a particular erogenous zone and a central conflict. The stages are:

Oral Stage: Birth to 1.5 years, focused on the mouth; conflict revolves around weaning.

Anal Stage: 1.5 to 3 years, focused on bowel and bladder control; conflict related to toilet training.

Phallic Stage: 3 to 6 years, focused on the genitals; conflict involves the Oedipus or Electra complex.

Latency Stage: 6 years to puberty, a period of sexual latency and social development.

Genital Stage: Puberty onward, focused on sexual maturity and the pursuit of mature, adult relationships.

Defense Mechanisms:

Freud believed that individuals use defense mechanisms to protect themselves from anxiety arising from conflicts between the id, ego, and superego. Examples include repression, denial, projection, and rationalization.

Unconscious Conflicts:

According to Freud, unresolved unconscious conflicts and desires from early childhood experiences can shape an individual's personality and behavior throughout life. Psychoanalysis aims to uncover and resolve these hidden conflicts.

Dream Analysis:

Freud believed that dreams are a reflection of unconscious thoughts and desires. Dream analysis is a technique used in psychoanalysis to explore the symbolic meanings of dreams, which can provide insight into the individual's inner world.

Free Association:

In therapy, Freud encouraged patients to engage in free association, a process in which they verbalize whatever comes to mind without censorship. This method allows the therapist to explore the patient's unconscious thoughts and associations.

Transference:

Transference occurs when patients project their feelings and attitudes onto the therapist, often based on their past relationships and unresolved conflicts. Freud considered transference a valuable source of insight.

Freud's psychoanalytic theory of personality has had a significant influence on psychology and psychotherapy, although it has also been subject to criticism and modification by subsequent generations of psychologists and therapists. Modern psychoanalysis has evolved to incorporate new ideas and approaches while retaining some of the foundational concepts introduced by Freud.

PSYCHOANALYTIC THEORY OF DEVELOPMENT

Psychoanalytic theory of development, primarily formulated by Sigmund Freud, outlines a comprehensive framework for understanding how human development unfolds over the course of an individual's life. This theory emphasizes the role of unconscious processes, early childhood experiences, and psychosexual stages in shaping an individual's psychological development. Here are the key components of the psychoanalytic theory of development:

Psychosexual Stages of Development:
Freud proposed that human development occurs in a series of stages, each marked by a particular focus on an erogenous zone (an area of the body with heightened sensitivity) and associated conflicts. These stages are:

Oral Stage: Birth to 1.5 years. The primary source of pleasure and conflict is the mouth, as infants explore the world through sucking and biting. The central issue is weaning, with successful resolution leading to trust and oral satisfaction.

Anal Stage: 1.5 to 3 years. Pleasure centers on bowel and bladder control. The main conflict revolves around toilet training and the child's ability to control bodily functions. Successful resolution results in a sense of autonomy and control.

Phallic Stage: 3 to 6 years. The genitals become the focus of pleasure, and this stage is marked by the Oedipus complex (in boys) and the Electra complex (in girls). Children experience sexual desire for the opposite-sex parent and rivalry with the same-sex parent. Resolution involves identification with the same-sex parent and the development of gender identity.

Latency Stage: 6 years to puberty. This stage is characterized by a period of sexual latency, during which sexual desires are repressed, and children focus on other aspects of life such as school, hobbies, and friendships.

Genital Stage: Puberty onward. In this final stage, sexual maturation is complete, and individuals seek mature, adult sexual relationships. Successful development results in the ability to form healthy relationships and engage in sexual intimacy.

Unconscious Processes:
Freud believed that much of human behavior and development is influenced by unconscious thoughts, desires, and conflicts that are hidden from conscious awareness. These unconscious processes can exert a powerful influence on an individual's emotions, behaviors, and personality.

Conflict Resolution:
Development, according to psychoanalytic theory, involves the resolution of various conflicts and tensions. The successful resolution of these conflicts at each psychosexual stage contributes to healthy personality development. Failure to resolve these conflicts can lead to fixation or psychological issues.

Defense Mechanisms:
Individuals employ defense mechanisms to cope with the anxiety and tension that arise from unresolved conflicts between the id, ego, and superego. Defense mechanisms, such as repression, denial, projection, and sublimation, help protect the conscious mind from disturbing or conflicting thoughts and emotions.

Role of Early Childhood Experiences:
Psychoanalytic theory places significant importance on early childhood experiences, particularly the relationships with caregivers and the family environment. These early experiences, including attachment and parenting styles, shape an individual's personality and development.

Psychoanalysis as a Therapeutic Tool:
Freud developed psychoanalysis as a therapeutic approach aimed at helping individuals explore their unconscious conflicts and gain insight into their thoughts, emotions, and behaviors. Techniques such as dream analysis, free association, and transference are used in psychoanalytic therapy to uncover and address hidden psychological issues.

It's important to note that while the psychoanalytic theory of development has contributed significantly to our understanding of human development, it has also been subject to criticism and has evolved over time. Many contemporary psychologists have built upon Freud's ideas and integrated them with other theories to create a more comprehensive understanding of human development and personality.

PSYCHOANALYTIC THEORY OF MORAL DEVELOPMENT

Psychoanalytic theory, primarily developed by Sigmund Freud, does not provide a comprehensive account of moral development in the same way that other developmental theories, such as those by Jean Piaget or Lawrence Kohlberg, do. Freud's psychoanalytic theory primarily focuses on the development of personality and the structure of the mind, with a particular emphasis on the unconscious and the resolution of internal conflicts. While his theory touches on aspects of morality, it does not offer a systematic theory of moral development. However, Freud did make some contributions and observations related to morality within the framework of psychoanalysis:

Role of Superego: In Freud's structural model of personality, the superego represents the moral and ethical aspect of one's psyche. It incorporates societal and parental values, norms, and moral standards. It serves as an internalized conscience, guiding an individual's behavior and influencing their sense of right and wrong.

Development of the Superego: According to Freud, the superego develops as a result of the resolution of the Oedipus or Electra complex during the phallic stage of psychosexual development (ages 3 to 6). During this stage, children internalize the moral values and gender roles of their same-sex parent as they identify with them and repress their sexual desires for the opposite-sex parent. This process contributes to the formation of the superego.

Moral Conflicts and Guilt: Freud believed that moral development is closely tied to the resolution of unconscious conflicts and the experience of guilt. When individuals violate their superego's moral standards, they may experience guilt, which serves as a powerful motivator for conforming to societal norms and moral principles.

Defense Mechanisms: Some defense mechanisms, such as reaction formation, can be related to morality. For example, an individual who harbors unacceptable aggressive impulses may employ reaction formation to display exaggerated moral behavior as a defense against their aggressive tendencies.

It's important to note that while Freud's psychoanalytic theory touches on aspects of morality, it is not a comprehensive theory of moral development. Other developmental theorists, such as Piaget and Kohlberg, have provided more detailed and systematic frameworks for understanding the development of moral reasoning and ethical behavior. These theories focus on how individuals develop the capacity for moral judgment, ethical decision-making, and a sense of justice as they mature.

SUMMARY OF BOOK OF JOB

The Book of Job is one of the books in the Hebrew Bible (Old Testament) and is considered a part of both the Jewish and Christian religious traditions. It is a complex and philosophical work that explores themes of suffering, faith, and the nature of God. Here is a summary of the Book of Job:

Prologue (Chapters 1-2):
The book begins by introducing Job, a wealthy and righteous man who is described as blameless and upright. Satan challenges Job's faith, arguing that he is only righteous because he has been blessed with prosperity. To test Job's faith, God allows Satan to take away his wealth, health, and family. Despite his suffering, Job does not curse God.

Dialogues and Debates (Chapters 3-37):
The majority of the book consists of poetic dialogues and debates between Job and his friends—Eliphaz, Bildad, and Zophar. They come to comfort him but ultimately engage in a series of speeches trying to explain the reason for his suffering. Job, in turn, expresses his anguish, frustration, and despair, questioning the justice of his suffering and the nature of God.

Job's friends adhere to a common belief of the time that suffering is a consequence of sin. They argue that Job must have committed some hidden sin to deserve his misfortune. Job vehemently denies any wrongdoing and maintains his innocence.

The dialogues also include several poetic speeches that reflect on the mysteries of life, the human condition, and the limitations of human wisdom. Job expresses his desire for a divine mediator or advocate who can plead his case before God.

Elihu's Speeches (Chapters 32-37):
Elihu, a younger man, interjects in the debate and delivers a series of speeches. He asserts that suffering can be a form of divine discipline or instruction, designed to turn individuals back to righteousness. Elihu's speeches add a new perspective to the discussion but do not provide a satisfying explanation for Job's suffering.

God's Response (Chapters 38-41):
In response to Job's questioning and his friends' attempts to explain his suffering, God finally speaks. God's response comes in the form of a series of poetic speeches that highlight the majesty and creative power of the natural world. God challenges Job's understanding of the universe and asks if he can comprehend the mysteries of creation.

God's speeches emphasize the limitations of human wisdom and understanding and suggest that there are aspects of the divine plan that surpass human comprehension. Job humbly acknowledges his limited understanding in the face of God's wisdom.

Job's Restoration (Chapter 42):
After God's response, Job humbly repents and acknowledges the inadequacy of his previous complaints. God restores Job's fortunes, blessing him with twice as much as he had before. Job's family and friends reconcile with him, and he lives to an old age, having witnessed the mysteries of God's creation.

The Book of Job is a profound exploration of the human experience of suffering, the limitations of human understanding, and the mysteries of divine providence. It challenges conventional wisdom regarding the relationship between righteousness and prosperity, ultimately emphasizing the importance of faith, humility, and trust in God's sovereignty in the face of life's trials.

PSYCHOANALYTIC THEORY IN THE CHARACTER OF JOB IN THE BIBLE

The character of Job in the Bible can be analyzed through the lens of psychoanalytic theory, particularly in terms of the psychological and emotional dimensions of his story. While the concept of psychoanalysis did not exist in Job's time, exploring his experiences in this framework can shed light on his emotional struggles and coping mechanisms.

Some aspects of Job's character and his story that can be understood through a psychoanalytic perspective:

Psychological Distress and Suffering: Job's story begins with immense suffering, including the loss of his wealth, health, and loved ones. From a psychoanalytic standpoint, Job's suffering can be seen as a source of profound psychological distress, leading to emotional turmoil and trauma. This suffering challenges his psychological resilience and forces him to confront intense emotional states.

Defense Mechanisms: As Job grapples with his suffering, he displays various defense mechanisms that are consistent with psychoanalytic theory. For example, his initial reaction of tearing his robe and shaving his head can be seen as a form of catharsis—a release of pent-up emotion. His lamentations and questions about the nature of his suffering can be viewed as expressions of his unconscious conflicts and anxieties.

Questioning and Doubt: Job's extensive dialogues with his friends and his monologues reveal his profound doubt and questioning of God's justice and the nature of suffering. From a psychoanalytic perspective, this can be seen as an expression of his unconscious conflicts and a way of grappling with the traumatic events in his life.

Seeking Understanding and Meaning: Throughout the Book of Job, Job seeks understanding and meaning in his suffering. His relentless questioning and desire for answers can be seen as a quest for resolution of his unconscious conflicts. He seeks to make sense of his suffering and understand the purpose behind it, which aligns with the psychoanalytic idea of exploring unconscious material for insight and resolution.

Coping Mechanisms: Job's journey can also be examined in terms of the coping mechanisms he employs. He expresses a desire for a divine mediator or advocate who can plead his case before God. This can be seen as a coping mechanism aimed at finding support and understanding in the face of overwhelming suffering.

Humility and Acceptance: Toward the end of the story, when God responds with a series of speeches emphasizing the limitations of human understanding, Job humbles himself and accepts his limited knowledge and perspective. This can be seen as a form of emotional growth and acceptance—a realization of the limits of his conscious awareness.

Job's character and his experiences in the Book of Job can be interpreted through a psychoanalytic lens as a portrayal of a person facing intense suffering and grappling with profound psychological and emotional turmoil. His journey involves the use of defense mechanisms, the pursuit of understanding and meaning, and ultimately, a form of psychological growth and acceptance. While the Book of Job predates psychoanalytic theory, it provides a rich and complex portrayal of the human psyche in the face of adversity.

PSYCHOANALYTIC THEORY ABOUT JOB IN SPIRITUAL CONTEXT

Applying psychoanalytic theory to the story of Job within a spiritual or religious context can offer insights into the character's psychological and emotional experiences as well as the broader themes of faith, suffering, and the human-divine relationship. While psychoanalysis is a secular framework, it can be used to explore the psychological dimensions of Job's spiritual journey. Here's a psychoanalytic interpretation of Job within a spiritual context:

Suffering and Theodicy: Job's story begins with extreme suffering and raises profound questions about the nature of God, justice, and suffering. From a psychoanalytic perspective, Job's suffering can be viewed as a source of existential crisis and a challenge to his faith. He grapples with theodicy—the question of why a just and loving God would allow such immense suffering.

Defense Mechanisms: Throughout the story, Job displays various defense mechanisms as he copes with his suffering and the emotional turmoil it generates. For example, his initial reaction of tearing his robe and shaving his head can be seen as an expression of his emotional distress and an attempt to release pent-up emotions. His dialogues and questioning of God can be viewed as mechanisms to cope with his internal conflicts and doubts.

Psychological Conflict: Job's journey can be understood as a psychological conflict between his faith in God and the overwhelming suffering he experiences. This conflict parallels the psychoanalytic notion of inner conflicts between different parts of the psyche, such as the id, ego, and superego. In Job's case, it's a conflict between his deep faith and his profound despair.

Unconscious Dimensions: From a psychoanalytic perspective, Job's suffering may also be seen as a manifestation of unconscious psychological material. His conscious questioning of God and his unconscious, unspoken doubts and fears may represent different facets of his inner world. The story provides a platform for exploring the unconscious aspects of faith and doubt.

Resolution and Transformation: As the story progresses, Job experiences a transformation and resolution of sorts. When God responds with a series of speeches emphasizing the limitations of human understanding, Job humbles himself and accepts his limited knowledge and perspective. This can be interpreted as a form of psychological and spiritual growth, as he comes to terms with the limitations of his conscious awareness and embraces a deeper level of trust in God.

Faith and Mystery: Ultimately, the story of Job underscores the theme of faith in the face of profound mystery. Job's journey reflects the human struggle to reconcile faith with the unknowable and the unexplainable, which aligns with the psychoanalytic idea of grappling with the unconscious and its mysteries.

In a spiritual context, applying psychoanalytic theory to the story of Job can enhance our understanding of the character's emotional and psychological responses to suffering and his spiritual development. It can also highlight the tensions between faith and doubt, the human search for meaning, and the profound mysteries of the divine, all of which are central themes in Job's narrative.

CONCLUSION:

In conclusion, applying psychoanalytic theory to the story of Job provides a nuanced perspective on the character's emotional and psychological journey within a spiritual context. Job's experience of extreme suffering, doubt, and questioning of God's justice can be viewed through the lens of psychoanalytic concepts such as defense

mechanisms, unconscious conflicts, and inner transformation. The story of Job underscores the complexity of the human psyche when confronted with profound suffering and theodicy, the question of why a just God permits such pain.

Through his dialogues with friends and his direct encounters with God, Job's psychological and spiritual growth becomes evident. His initial despair and questioning evolve into a form of acceptance and humility in the face of the mysteries of the divine. This transformation can be seen as a psychoanalytic process of resolving inner conflicts and gaining insight into the limitations of human understanding.Ultimately, the story of Job offers a rich exploration of the intersection of faith and psychology, highlighting the human struggle to reconcile belief with doubt and to find meaning in the midst of suffering. It serves as a timeless narrative that continues to resonate with readers, inviting them to reflect on the profound psychological and spiritual dimensions of the human experience.

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A Study of Eco-Sabotage in The Death of Nature by Carolyn Merchant: An Ethical Perspective

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ABSTRACT:
Eco-literature, short for ecological literature, is a literary genre that focuses on environmental themes, ecological issues, and the relationship between humans and the natural world. Carolyn Merchant is an American environmental historian, philosopher, and author known for her contributions to the fields of environmental history and eco-feminism. The interpretation of Eco-sabotage can vary widely depending on one's perspective and beliefs. Women, Ecology, and the Scientific Revolution" by Carolyn Merchant provides a thought-provoking examination of the historical development of modern science and its ethical implications for the environment.

Keywords: Eco- Literature, Eco-Sabotage, Eco-Feminism, Ethical, Perspectives

ECO-LITERATURE:
Eco-literature, short for ecological literature, is a literary genre that focuses on environmental themes, ecological issues, and the relationship between humans and the natural world. Eco-literature explores the complex interactions between people and the environment and often serves as a means of raising awareness about environmental concerns and advocating for environmental stewardship. Here are some key aspects of Eco-literature:

Environmental Awareness: Eco-literature seeks to raise awareness about environmental issues, including climate change, habitat destruction, pollution, and the loss of biodiversity. It often highlights the consequences of human actions on the natural world.

Nature as a Character: Nature and the environment are frequently portrayed as central characters or forces in Eco-literature. Authors use vivid descriptions of landscapes, ecosystems, and wildlife to evoke a sense of place and emphasize the interconnectedness of all life.

Advocacy and Activism: Many works of Eco-literature serve as a call to action. They encourage readers to become more environmentally conscious, take responsibility for the planet's well-being, and engage in environmental activism.

Ecological Ethics: Eco-literature often explores ethical questions related to the environment, such as the rights of non-human species, the ethics of conservation, and the moral responsibility of humans to protect the Earth.

Reflection on Human Impact: Eco-literature often reflects on the impact of human activities on the environment and contemplates the consequences of environmental degradation for future generations.

Different Forms: Eco-literature can take various forms, including novels, short stories, essays, poetry, and non-fiction. Some well-known authors associated with Eco-literature include Edward Abbey, Rachel Carson, Aldo Leopold, and Barry Lopez.

Environmental Justice: Some works of Eco-literature also address issues of environmental justice, exploring how environmental problems disproportionately affect marginalized communities and advocating for equity in environmental protection.

Regional and Global Perspectives: Eco-literature can focus on specific regions or take a global perspective, highlighting environmental issues that affect specific ecosystems or communities while also recognizing the interconnectedness of global environmental challenges.

Ecocriticism: Ecocriticism is an academic field that analyzes and interprets literary works through an ecological lens. It seeks to understand how literature shapes and reflects cultural attitudes toward the environment.

Eco-literature plays a vital role in fostering a deeper understanding of environmental issues and inspiring individuals to take action to protect the natural world. It is a genre that continues to evolve and adapt to address the ever-growing challenges of the modern environmental crisis.

TYPES OF WORKS IN ECO LITERATURE:
Eco-literature encompasses a wide range of literary works that explore environmental themes and issues. Here are some common types of works within the Eco-literature genre:

Nature Writing: Nature writing is a form of Eco-literature that celebrates the natural world through descriptive and evocative prose. It often includes travelogues, essays, and memoirs that reflect on the beauty and significance of landscapes, ecosystems, and wildlife. Notable nature writers include Henry David Thoreau, John Muir, and Annie Dillard.

Environmental Fiction (Eco-Fiction): Environmental fiction is a genre of Eco-literature that uses storytelling to explore environmental issues, often through the experiences of fictional characters. These novels and short stories can address a wide range of topics, from climate change to conservation efforts. Prominent examples include "The Overstory" by Richard Powers and "Flight Behavior" by Barbara Kingsolver.

Environmental Non-Fiction: This category includes works of non-fiction that delve into environmental topics, such as environmental science, conservation, and sustainability. Authors in this category often provide informative and educational perspectives on environmental issues. Rachel Carson's "Silent Spring" is a classic example.

Eco-Poetry: Eco-poetry is a form of Eco-literature that uses poetry to convey emotional and sensory experiences of the natural world. It often explores themes of connection, loss, and human impact on the environment. Poets like Mary Oliver and Gary Snyder are well-known for their Eco-poetry.

Environmental Essays: Environmental essays are written reflections and analyses of environmental issues, often blending personal experiences with observations and research. Essayists use this form to explore ecological topics and inspire readers to engage with environmental concerns. Aldo Leopold's "A Sand County Almanac" is a well-regarded example.

Ecocritical Studies: While not literary works themselves, ecocritical studies are academic writings that analyze and interpret Eco-literature. These studies provide critical perspectives on the themes, symbolism, and ecological messages present in environmental literature.

Environmental Memoirs: Environmental memoirs are autobiographical works that chronicle an individual's personal experiences with nature and their journey toward environmental consciousness. "Pilgrim at Tinker Creek" by Annie Dillard is an example of this genre.

Climate Fiction (Cli-Fi): Climate fiction, or cli-fi, is a subgenre of Eco-literature that specifically focuses on the impact of climate change on society and the environment. These works often speculate about future scenarios shaped by climate-related events. Notable examples include "The Water Knife" by Paolo Bacigalupi and "The Ministry for the Future" by Kim Stanley Robinson.

Indigenous and Native Environmental Literature: These works are often written by Indigenous and Native authors and draw on traditional ecological knowledge to explore relationships with the land, cultural preservation, and environmental challenges faced by Indigenous communities.

These are just a few of the types of works that fall under the umbrella of Eco-literature. The genre is diverse and continually evolving, reflecting the evolving environmental concerns of society and the creative ways in which writers engage with these issues.

About Carolyn Merchant

Carolyn Merchant is an American environmental historian, philosopher, and author known for her influential work in the field of environmental history and eco-feminism. She has made significant contributions to the study of environmental ethics, the history of science, and the intersection of gender and environmental issues.

Birth and Education: Carolyn Merchant was born on July 12, 1936, in Rochester, New York, USA. She earned her Bachelor of Arts degree in English from Vassar College in 1957 and her Ph.D. in History of Science from the University of Wisconsin-Madison in 1967.

Academic Career: Merchant has had a long and distinguished academic career. She has held various academic positions, including serving as a professor at the University of California, Berkeley, where she was a professor of environmental history, philosophy, and ethics in the Department of Environmental Science, Policy, and Management.

Environmental History: Merchant is recognized for her significant contributions to the field of environmental history. Her research and writings have focused on the historical relationships between humans and the environment, particularly during the Scientific Revolution and the early modern period.

Eco-feminism: Merchant is widely known for her influential book, "The Death of Nature: Women, Ecology, and the Scientific Revolution," published in 1980. This work played a pivotal role in the development of Eco-feminism, a feminist and environmental philosophy that explores the connections between the oppression of women and the exploitation of nature.

Scholarship and Publications: In addition to her seminal work, Merchant has authored numerous articles, essays, and books that examine the intersections of gender, science, and the environment. Her scholarship has contributed to discussions on eco-feminism, environmental ethics, and the historical roots of ecological issues.

Activism and Advocacy: Carolyn Merchant's academic work has often intersected with environmental activism and advocacy for social and ecological justice. She has been involved in discussions and movements addressing environmental concerns and gender inequalities.

"The Death of Nature" (1980): Carolyn Merchant is perhaps best known for her groundbreaking book "The Death of Nature: Women, Ecology, and the Scientific Revolution." In this book, she examines the historical development of modern science and how it contributed to the domination and exploitation of nature. She argues that the Scientific Revolution of the 16th and 17th centuries transformed humanity's relationship with the natural

world, leading to the objectification and disenchantment of nature. She also explores the connections between the subjugation of women and the exploitation of nature, coining the term "the patriarchal construction of nature."

Environmental Ethics: Carolyn Merchant has also engaged in discussions about environmental ethics, including the ethical considerations surrounding the treatment of the natural world and the ethical responsibilities of humans toward the environment.

Scholarly Impact: "The Death of Nature" and Merchant's other works have had a lasting impact on the fields of environmental history, environmental philosophy, and ecofeminism. Her ideas and concepts have influenced subsequent generations of scholars, activists, and thinkers who explore the intersections of gender, science, and the environment.

Carolyn Merchant's work continues to be an important reference point for those interested in understanding the historical and philosophical dimensions of environmental issues, as well as the ways in which gender and power dynamics intersect with environmental concerns.

SUMMARY - THE DEATH OF NATURE

"The Death of Nature: Women, Ecology, and the Scientific Revolution" is a book written by Carolyn Merchant, published in 1980. It explores the historical development of modern science and its impact on the environment, particularly as it relates to the objectification and exploitation of nature. Here is a summary of the key themes and arguments presented in the book:

The Scientific Revolution: Merchant begins by examining the Scientific Revolution of the 16th and 17th centuries, a period of significant change in the way humans approached the study of nature and the natural world. During this time, a mechanistic worldview emerged, characterized by the belief that nature could be understood and controlled like a machine.

Mechanistic Worldview: Merchant argues that the mechanistic worldview of early science led to the disenchantment of nature. Nature, once seen as a living, interconnected system, became viewed as a lifeless and inert machine. This shift in perspective laid the foundation for the exploitation of nature.

Patriarchal Influences: Merchant introduces the concept of "the patriarchal construction of nature." She contends that the prevailing scientific and cultural worldview of the time was deeply influenced by patriarchal values and structures. Nature came to be seen as passive, controllable, and devoid of intrinsic value, much like the societal perception of women during this era.

The Objectification of Nature: Merchant argues that this new perspective on nature, which reduced it to a mere resource for human exploitation, contributed to ecological degradation. As nature was objectified, it became subject to manipulation, extraction, and pollution, leading to environmental destruction.

Gender and Environmental Degradation: One of the central arguments of the book is the interconnectedness of the subjugation of women and the exploitation of nature. Merchant suggests that both were symptomatic of a broader cultural and scientific mindset that viewed both women and nature as passive objects to be controlled and dominated.

Historical Analysis: Throughout the book, Merchant provides historical examples and case studies to illustrate how these ideas manifested in the works of prominent scientists and philosophers of the time, such as Francis Bacon, René Descartes, and Isaac Newton.

Eco feminist Perspective: "The Death of Nature" is considered a foundational text in the development of ecofeminism, a philosophy that explores the links between gender, ecology, and social justice. Merchant's work highlights the need for a more holistic and interconnected approach to understanding and addressing environmental and gender-related issues.

INTERPRETATION OF ECO-SABOTAGE

The interpretation of Eco-sabotage can vary widely depending on one's perspective and beliefs. **Environmental Activism:** Some view Eco-sabotage as a form of radical environmental activism. In this interpretation, eco-saboteurs are seen as dedicated activists who are willing to take direct action to protect the environment when they believe that legal and peaceful means have failed to achieve their goals. They see Eco-sabotage as a last resort to draw attention to environmental issues and bring about change.

Civil Disobedience: Eco-sabotage can be seen as a form of civil disobedience, a tradition that dates back to movements like the civil rights movement and anti-war protests. Proponents of this interpretation argue that eco-saboteurs are consciously breaking the law to challenge what they perceive as unjust environmental policies or practices.

Ethical Debate: Eco-sabotage raises ethical questions about the use of illegal and potentially harmful tactics to achieve environmental goals. Some people believe that the ends (protecting the environment) do not justify the means (damaging property or engaging in illegal activities), while others argue that desperate times call for desperate measures.

Property Rights vs. Environmental Rights: The interpretation of Eco-sabotage often hinges on the balance between property rights and environmental rights. Critics argue that damaging private property infringes on the

rights of property owners, while proponents argue that protecting the environment is a collective responsibility that can sometimes justify temporary infringement on property rights.

Effectiveness and Consequences: The effectiveness of Eco-sabotage is a subject of debate. Some believe that it can draw attention to environmental issues and disrupt harmful activities, while others argue that it may alienate the public, escalate conflicts, and ultimately harm the environmental cause it aims to promote.

Legal and Moral Accountability: Eco-saboteurs may be seen as both legally and morally accountable for their actions. Legal systems often treat Eco-sabotage as a crime, but some argue that individuals who engage in it should be held accountable according to their own moral principles.

Context Matters: The interpretation of Eco-sabotage can also depend on the specific circumstances. Some actions may be viewed as more justifiable in extreme cases where environmental harm is imminent, while others may be seen as reckless or unnecessary.

Ultimately, the interpretation of Eco-sabotage is highly subjective and often depends on one's values, beliefs, and perspectives on environmental activism and ethics. It's a topic that continues to generate debate and discussion within both environmental and legal circles.

ECO SABOTAGE IN DEATH OF NATURE

"The Death of Nature: Women, Ecology, and the Scientific Revolution" by Carolyn Merchant primarily focuses on the historical development of modern science and its impact on the environment, particularly the objectification and exploitation of nature. It doesn't specifically address or advocate for Eco-sabotage as a means of environmental activism. Instead, the book provides a historical and philosophical analysis of the changes in human perceptions of nature during the Scientific Revolution.

Eco-sabotage typically refers to acts of environmental sabotage carried out to disrupt activities harmful to the environment, often involving the destruction of property or equipment. While Eco-sabotage as a form of environmental activism has occurred in more recent times, it is not a central theme or focus of "The Death of Nature," which primarily explores the historical and ethical dimensions of the human-environment relationship.

Merchant's book does, however, address the broader ethical and philosophical questions surrounding the treatment of nature and the consequences of human actions on the environment. It encourages readers to consider alternative ethical frameworks that promote a more responsible and sustainable relationship with the natural world. The book's primary aim is to shed light on the historical roots of ecological degradation and to challenge prevailing cultural and scientific attitudes toward nature, rather than advocating for specific activist tactics like Eco-sabotage.

ECO FEMINIST PERSPECTIVE: "THE DEATH OF NATURE"

Women, Ecology, and the Scientific Revolution" by Carolyn Merchant is a seminal work in the development of ecofeminism, a philosophical and activist movement that explores the interconnectedness of gender oppression and environmental degradation.

Patriarchy and Domination: Carolyn Merchant argues that the rise of modern science and the Scientific Revolution were influenced by patriarchal values and structures. She contends that the dominant cultural and scientific worldview of the time depicted both women and nature as passive, controllable entities subject to domination and exploitation by men.

Parallel Oppressions: Merchant highlights the parallel between the oppression of women and the exploitation of the environment. She suggests that the objectification and devaluation of women, as well as the objectification and degradation of nature, are interconnected and symptomatic of a broader mindset that seeks to exert control and dominance.

Objectification and Commodification: Ecofeminists, inspired by Merchant's work, argue that the objectification and commodification of nature mirrors the objectification and commodification of women. In both cases, these processes strip away intrinsic value and contribute to exploitation.

Intersectionality: The ecofeminist perspective emphasizes the importance of recognizing intersectionality—the interconnectedness of different forms of oppression, including gender, race, class, and environmental exploitation. Ecofeminism seeks to address these intersecting issues as part of a broader struggle for social and ecological justice.

Environmental Ethics: "The Death of Nature" underscores the need for a new ethical framework that acknowledges the intrinsic value of the natural world and challenges the patriarchal, anthropocentric worldview that underlies ecological degradation.

Activism and Solidarity: Ecofeminism is not just a theoretical perspective but also a call to action. It encourages solidarity between feminist and environmental movements, recognizing that both are essential for addressing the complex challenges of gender inequality and environmental sustainability.

Reimagining Relationships: Ecofeminists advocate for a reimagining of humanity's relationship with nature, one that acknowledges the interdependence of all life and promotes ecological stewardship. This perspective

calls for a shift away from dominating and exploiting nature toward a more harmonious and sustainable coexistence.

"The Death of Nature" and the ecofeminist perspective it promotes have had a profound influence on the fields of environmental ethics, feminist theory, and activism. They continue to inspire discussions about the interconnectedness of gender, ecology, and social justice and underscore the importance of addressing these issues collectively to create a more just and sustainable world.

ETHICAL PERSPECTIVE: "THE DEATH OF NATURE

"The Death of Nature: Women, Ecology, and the Scientific Revolution" by Carolyn Merchant also offers important ethical perspectives related to the treatment of the natural world and the consequences of human actions on the environment.

Ethical Responsibility: Carolyn Merchant highlights the ethical responsibility that humans have toward the environment. She argues that the objectification and exploitation of nature, as seen during the Scientific Revolution, reflect an ethical failure to recognize the intrinsic value and interconnectedness of all life.

Ecological Ethics: The book emphasizes the need for a shift in ethical thinking, moving away from a purely anthropocentric worldview to an ecological ethics that considers the well-being of the entire ecosystem. It calls for a moral framework that recognizes the rights and value of non-human entities in nature.

Ethical Consequences: Merchant explores the ethical consequences of objectifying and commodifying nature. She suggests that this mindset led to the environmental degradation, exploitation, and depletion of natural resources, which have far-reaching ethical implications for future generations and the broader biosphere.

Re-imagining Relationships: The book encourages readers to reimagine their relationship with nature. It calls for a more respectful, reverential, and reciprocal relationship with the environment, one that recognizes the inherent worth of ecosystems, species, and the Earth itself.

Ethical Consideration of Technology: "The Death of Nature" raises ethical questions about the role of technology in environmental exploitation. It calls for a critical examination of how technology has been used to control and dominate nature and suggests that ethical technology choices should prioritize sustainability and harmony with the natural world.

Inter-connectedness: The book underscores the ethical principle of inter-connectedness, emphasizing that humans are not separate from nature but integral parts of a larger ecological web. This recognition of inter-connectedness forms the basis for a more ethical and responsible approach to environmental issues.

Environmental Justice: While not the primary focus of the book, it indirectly touches on the ethical dimensions of environmental justice. The exploitation of nature often disproportionately affects marginalized communities and future generations, raising ethical questions about equity and social responsibility.

CONCLUSION

Women, Ecology, and the Scientific Revolution" by Carolyn Merchant provides a thought-provoking examination of the historical development of modern science and its ethical implications for the environment. While the book primarily focuses on the changing perceptions of nature and the objectification of the natural world, it does not specifically delve into the topic of Eco-sabotage as a means of environmental activism.

However, the book does invite readers to reflect on the ethical dimensions of human interactions with the environment. It emphasizes the need for a shift in ethical thinking, moving away from a purely anthropocentric worldview to one that recognizes the intrinsic value and interconnectedness of all life forms and ecosystems. In this sense, "The Death of Nature" encourages readers to consider alternative ethical frameworks that prioritize ecological integrity, sustainability, and a more responsible and harmonious relationship with the natural world.

While Eco-sabotage is not a central theme of the book, it is essential to recognize that discussions about environmental ethics and activism can take various forms. Eco-sabotage, as a tactic, raises its own set of ethical questions and considerations, which may be addressed by different authors and scholars in the context of environmental literature and ethics.

"The Death of Nature" contributes to the broader conversation about ethical perspectives on environmental issues by challenging prevailing attitudes and promoting a more responsible and interconnected approach to nature. It invites readers to critically examine the ethical implications of human actions on the environment and consider alternative ethical frameworks that prioritize the well-being of the natural world.Overall, "The Death of Nature" challenges readers to think critically about the ethical implications of human actions on the environment and to consider alternative ethical frameworks that prioritize ecological integrity, sustainability, and the well-being of the natural world. It encourages a shift in ethical perspective that acknowledges the moral imperative of protecting and preserving the Earth's ecosystems for current and future generations.

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Applications of Explainable AI for Healthcare 5.0: A Survey

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Abstract
In the field of healthcare, there's a big change happening called Healthcare 5.0. It builds based on Healthcare 4.0 and uses digital tools that focus on patient wellness. With the help of aided technologies including artificial intelligence (AI), the Internet of Things (IoT), big data, and assisted network technologies, healthcare 5.0 focuses on real-time patient monitoring, ambient control and, wellbeing. However, there are some issues, like how to make sure predictions are accurate, how to deal with unexpected situations, and how to follow ethical rules. Recently there's a new idea called explainable AI, or EXAI. It's a way to make AI models more understandable by showing how they make decisions. This is important in healthcare because it helps doctors and other experts to trust the AI. However, not many surveys have focused on how to use EXAI in healthcare, especially when it comes to analyzing data. So, this survey proposes how to use EXAI in Healthcare 5.0 and explains how it works in healthcare service management and patient data and diagnostics. It also suggests a way to use EXAI in analyzing CT scans and proposes a system to solve problems with EXAI in Healthcare 5.0. The main aim of this review is to point out the areas in healthcare that need more focus and research from the explainable AI community, and also to explain the role of EXAI in diverse applications.

Index Terms: Explainable AI, Healthcare 5.0, Deep Learning, Machine Learning.

Introduction
Recently, the healthcare industry has been changing to focus more on patients and giving them control over their health. This change is happening thanks to new technologies like artificial intelligence, the Internet of Things, big data, and networks that work at the edge of the Internet. Digital health now uses smart sensors to predict health issues in real-time and make smart business decisions [1]. This approach is called Healthcare 4.0, and it's all about providing smart and connected care to patients. The healthcare industry is adapting to this vision, but even more changes are expected soon [2]. In Healthcare 5.0, things are getting even smarter. We are talking about using technology like augmented reality and virtual reality, along with smart control and easy-to-understand healthcare data. This makes healthcare more personalized, flexible, and based on good reasoning [3]. It's not about health; it's about innovative solutions for the healthcare industry. Artificial intelligence is also playing a big role here. Think of it as a computer program that can understand images, and text and make predictions about your health. This helps with finding diseases and giving you healthcare advice from a distance. In healthcare, EXAI (which stands for Explainable Artificial Intelligence) is used to make clinical decisions more trustworthy. It helps with tasks like handling medical information, diagnosing illnesses, reducing errors in healthcare sensors, categorizing diseases, and dividing data into groups. Imagine it as a tool that makes it easier to spot and fix problems in computer programs used for healthcare. EXAI is like a friendly guide in healthcare. It doesn't just make decisions; it explains why it makes them, making sure it follows the rules set by humans. It can also fix its own mistakes to be more accurate, and safe, which is important in healthcare. It works with different computer techniques like random forests and decision trees. When it explains things, it can either talk about the whole system or just one small part of it [5]. This explanation has to fit with the specific rules of healthcare and the health conditions of each person, keeping healthcare personalized. This figure shows that EXAI is becoming more popular, growing by about 18.4% each year from 2020 to 2030 [4]. And there's a table that lists all the short words used in this article and what they mean.

A.   Market Trends and Research Statistics
EXAI is becoming important in different areas like healthcare, retail, entertainment, aerospace, etc. EXAI has been getting more and more attention, and it's not just from one perspective. People are looking at it from different angles like Philosophy, how it's classified, and how it's developed. There's a chart (figure 1 (a) & 1(b)) that shows how much research is happening in different areas and tasks.
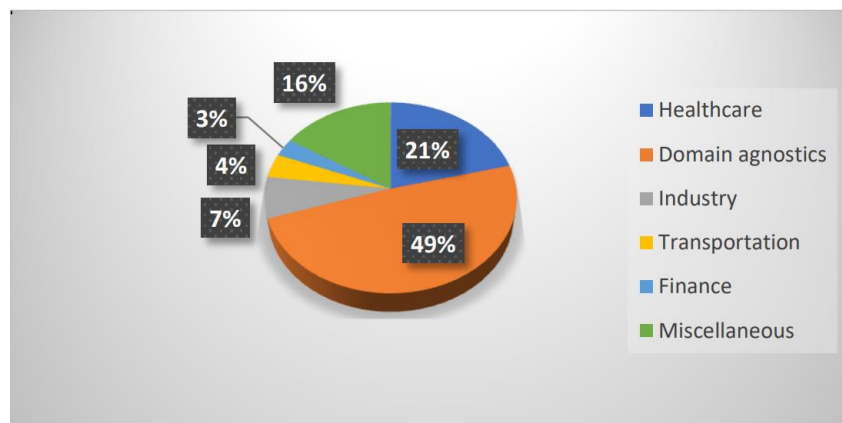
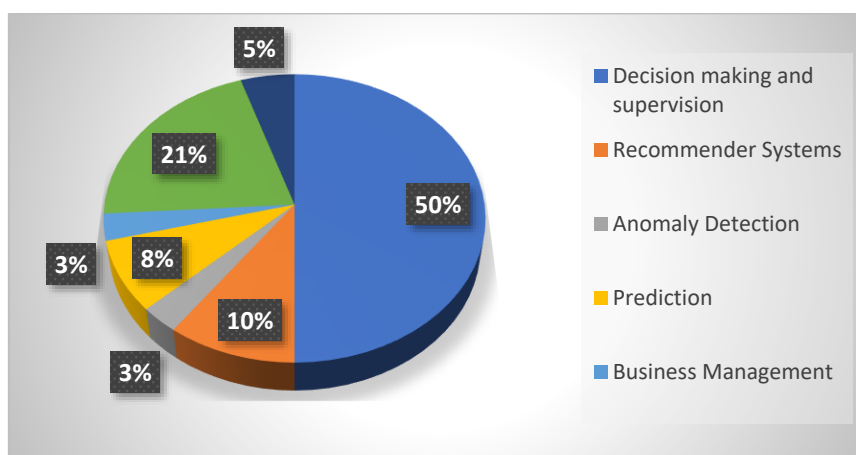**Figure 2(a). EXAI research statistics for Domain [6].**

Figure 1(b). EXAI research statistics for Task applied [6].

B.   Necessity of this Survey

In Healthcare 5.0, analytics is crucial for solving patient's problems. There are these AI-based models that work like mystery boxes. You put in health data, and they give you predictions. However these models are often quite complex, and even experts can struggle to understand them. In healthcare, this is a big deal because it affects patient's health and decisions. So, it's really important to figure out what these algorithms are doing. These algorithms have different tests and are used in various healthcare situations [7]. That's why it has been needed to understand how it all works. This is where interpretable machine learning comes in. It helps us understand and trust these models by making them more transparent. Linear models are easy for people to understand, but things like deep neural networks are like puzzles. So, we need to explore how well AI models can be explained more in both words and numbers. In the medical field, doctors and healthcare professionals need these models, so they must be able to understand them. Explainable AI helps doctors understand what's going on inside these black box models and why they make certain decisions [8]. This is super important in medicine.

C.   Uniqueness of this Survey

Researchers have introduced explainability solutions in healthcare applications like COVID-19 detection and prediction [9, 10], as well as cardio-vascular disease [11, 12], biomedical engineering [13], and many more. The solutions explore ways to use DL techniques and algorithms to explain results both globally and locally. However, no research has taken an integrated approach as specified. To avoid violating healthcare laws [14], a distributed AI-based learning framework is needed to address data-sharing concerns and size limitations. The proposed research aims to provide end-to-end explanations for medical imaging using AI and FTL in the context of Healthcare 5.0.

D.   Research Contributions

The following are the research contributions of the paper.

➢ It suggests a special architecture for medical image classification and covid-19 detection. This uses deep learning and a special technique called FTL.

➢ It explains a way to categorize EXAI uses in different industries, especially in healthcare.

➢ It talks about what might be studied next and shows a case study about monitoring heart rhythms with FTL and EXAI. They used a dataset to train their system, and it works well with about 98% accuracy.

Survey Planning and Methodology

The survey planning and methodology follow some rules and guidelines and are split into following important steps, which have been discussed in the following sections [15], [16].

- **Search Criteria**

  We did a thorough study on advanced technologies like Extended Artificial intelligence (EXAI), AI (which includes deep learning and machine learning), as well as Federated Learning (FL) and Federated Transfer learning (FTL). We looked at how these technologies can be used together in the context of Healthcare 5.0. To do this, we started by collecting a bunch of relevant articles online. Then we filtered out the ones we needed and used the information from those articles in our research.

- **Implementing Exai Across Diverse Applications**

  In this section, we discuss how EXAI is applied in various real-world scenarios. Figure 2 illustrates the specific areas where EXAI can serve as a clear and effective tool for enhancing AI analytics. EXAI enhances the capabilities of conventional AI models. We will delve into the specifics below.
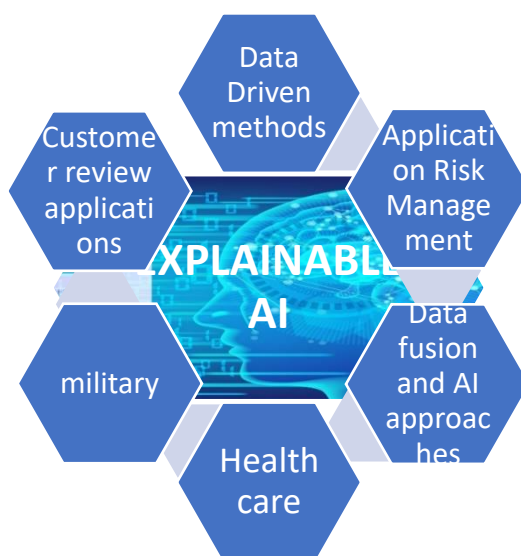
Figure 3. Implementation of EXAI across various applications.

Applications

As recommender systems in e-commerce have evolved, there has been a substantial increase in customer review data. Mostly the data distribution contains positive, neutral, and negative product classifications, which might be contextual and subjective [17]. In this context, EXAI can be a valuable tool for mapping syntactic data's meanings to semantic information.

- **Military**

In military applications, AI is crucial for training, defense simulations, and surveillance. The internet-of-military-things (IoMT) has brought IoT capabilities to military systems, such as soldier wearables, surveillance drones, and proximity sensors to detect unwanted movements [18]. These systems generate a lot of data, which can be analyzed by Machine Learning (ML) and Deep Learning (DL) models to create self-controlled and adaptive IoMT environments.

Using autonomous systems in defense is similar to using autonomous vehicles for life-threatening situations. That's where EXAI comes in handy [19].

- **Healthcare**

In healthcare, AI is widely used to improve data analysis, make predictions, and detect unusual patterns or diagnose diseases. For example, AI helps with tasks like classifying medical images, dividing them into sections, and predicting diseases. However, AI decisions in healthcare are really important and that's where EXAI comes in. EXAI uses techniques like Bayesian teaching and saliency maps to make sure that AI decisions are transparent [20]. That's how it shows the AI model made a prediction and keeps track of the results in clinical settings.

- **Data Fusion and AI Approaches**

In big Data analytics, we gather data from different sources and organize it into structured, semi-structured, or unstructured categories. Big data techniques help us design effective strategies and enhance business intelligence models. Tools like Apache Spark and Hadoop help us process and store large volumes of data efficiently. After

aligning the data, we use techniques like normalization and scaling, followed by reduction methods, such as reducing dimensions, and data quantity, and applying statistical methods.

Need and Background of EXAI in Healthcare 5.0

EXAI is a system designed to make AI understandable to humans. The term "EXAI" was coined by Van Lent et al. in 2004, demonstrating how AI behaves in gaming applications. However, as machine learning (ML) progressed, the focus shifted towards implementing models and algorithms. EXAI has now become vital due to the widespread use of AI/ML across various industries, impacting crucial decision-making and recommendations. It helps address social, legal, and ethical concerns by making decision models transparent and understandable EXAI serves as responsible AI, making AL/ML models less like black boxes. EXAI represents a third wave of AI, producing algorithms that can explain themselves clearly.

Table 6. Key terminologies in EXAI.

Term	Description
Interpretable ML	This system allows users to see and understand how inputs are transformed into outputs through mathematical processes. In some machine learning contexts, it's similar to the concept of explainability [25],[26].
Black-Box problem	In computing and quality assurance, a black box subsystem doesn't disclose its internal design or structure, preserving intellectual property and competitiveness. In AI, the black box problem means the system struggles to offer understandable explanations for its answers.
Responsible AI	Considering Societal, ethical, and moral values. There are three entities of responsible AI viz, accountability, responsibility, and transparency [27].
Data Science	The field of data science combines statistics, data science, and ML to gain insights into real-world phenomena through data analysis.
Social Science	Social science deals with the social relationship between individuals and society through explanations [28].
Third-wave AI	Third-wave AI refers to the next generation of AI models that explain real-world phenomena. Some of the examples are intelligent AI, brain-computer interface, and human symbiosis.
Artificial General Intelligence (AGI)	Artificial Intelligence, often called AGI, is like a super-smart computer program that can understand, learn, and do a wide range of tasks like human beings, instead of being specialized for one specific job [29].

Solution Cataloguing of EXAI in Healthcare 5.0

The development of EXAI is really important for society and science. This technology acts like it's solving difficult problems just like humans do. AI is now doing things that we used to do with our thinking. EXAI is a useful tool that helps us understand things better, especially in healthcare. In the healthcare field, it helps with diagnosis and surgery. You can see a picture of this in Figure 3.
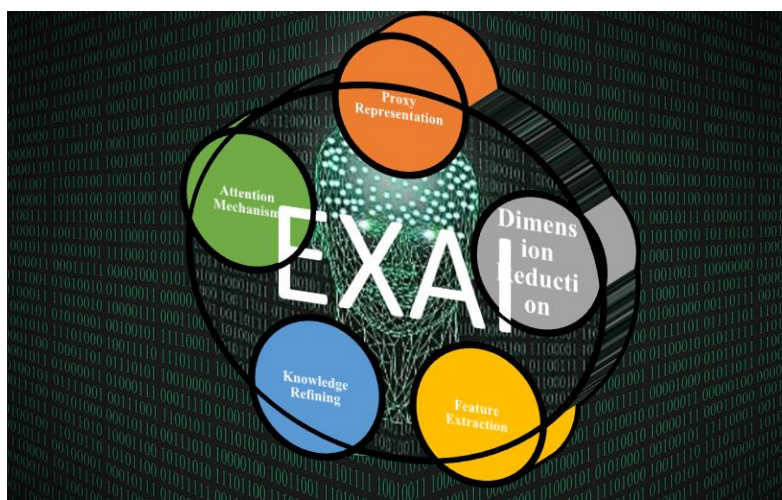

Figure 4. Solution cataloguing of EXAI in Healthcare applications [33-53].

Dimension Reduction

In healthcare, some researchers found ways to choose the most important features to predict things like drug side effects or brain tumors. They used smart techniques to make sense of lots of data. This helps doctors and scientists make better decisions without making things too complicated. So, in simple words, they figured out how to use only the important parts of the data to make better predictions and understand things better.

Feature Extraction

Feature extraction is like taking a big pile of information and making it simpler by creating new pieces of information and making it simpler by creating new pieces of information and making it simpler by creating new pieces of information that still tell us the same story. This helps us understand how AI models work better. For example, AI is used to interpret medical images, like retinal scans. Feature extraction helps identify important features in medical data.

Knowledge Refining

Knowledge refining means taking what a big smart computer knows and putting it into a smaller, simpler computer that works well in real life. Big computers have lots of data, but they are too big to use everywhere. This is especially useful for complex computers with many layers. It's often used for speech, images, and language tasks. Some techniques include making models smaller and easier to understand. For example: Making a computer predict pneumonia risk without being huge, creating a model that doctors can easily understand, using smart computers to predict hospital readmission, etc. So, it's about making smart computers fit into real-life situations and making them easier to understand by regular people.

Attention Mechanism

The attention mechanism is like a spotlight that helps a computer focus on the important parts of information. It is used to make computers understand and work with language better. For example, it is used in healthcare to make predictions about patient's wellness based on their medical records. This makes prediction more accurate compared to older methods. In another case, it is used to look at patients past medical visits and find important information.

Proxy Representation

The interpretable surrogate model is used to understand the black box model's level of prediction accuracy. These models are relevant in circumstances when the desired outcome is arduous, pricey, and time-consuming. The primary goal of this model is to make the result interpretable while maintaining the under-estimation's accuracy.

Conclusion and Future Scope

Healthcare 5.0 is moving towards using digital technology for making decisions about our health. Instead of using old-fashioned models, we now rely on smart computer programs that can predict things in real time and give us helpful information. These programs are called EXAI, and they help doctors and patients to trust the information they get. They also make it easier to understand how the computer is making decisions. In the future, they want to make EXAI even better by adding security and trust features. They might use something called blockchain, like a digital ledger, to keep important health information safe. This way, patients can be sure that the computer's advice is reliable and easy to understand, especially in places where healthcare is decentralized. Researchers also looking at how to make AI in healthcare more understandable. They've tried using things like heat maps and special charts to help doctors understand how AI makes decisions. But they're not sure yet if this makes doctors trust AI more. Another important use of EXAI is in finding out which signs in our body are linked to diseases and health problems. By studying these signs on a global scale, it can make better medicines, treatments, and faster tests. This is a new area of study, and there's a lot of scope for more research to understand tricky healthcare issues better with the help of EXAI.

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Mechanization of Manual Scavenging: A Path towards Dignity and Efficiency

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Abstract
Manual scavenging is a deeply entrenched and hazardous practice involving the cleaning and maintenance of sewage and septic tanks, sewer lines, and open drains, typically carried out by marginalized and vulnerable communities in many parts of the world. Those engaged in manual scavenging face extreme health and safety risks, including exposure to toxic gases, pathogens, and physical hazards. Daily sanitation labor is performed by more than 5 million individuals nationwide, of whom about 2 million are involved in the dangerous task of cleaning septic tanks and sewers. Just by automating the cleaning and sanitation procedure, we can bring about the transformation. This abstract presents a comprehensive overview of the mechanization of manual scavenging, a critical step towards eradicating this hazardous and socially unjust practice.
Keywords: Mechanization, Hazardous, Real-Time monitoring and prevention.

Introduction
Conventionally, sanitation tasks, such as garbage collection and disposal, frequently depended on physical labor, putting employees in danger and lowering their quality of life. Since most Indian towns lack the most modern equipment for cleaning sewage systems, sewage cleaners must access subterranean sewer systems through manholes. Gases that may be fatal when breathed, such as hydrogen sulphide and methane, are frequently found in manholes. Manual scavengers who enter these restricted locations without the required safety gear run a substantial danger of being exposed to toxic gases, which can be generated from decaying sewage and other organic debris .Additionally, the sustainability of the environment and urban infrastructure has been hampered by the inefficiency of manual procedures. Based on official data, 40% of the casualties that occurred while cleaning drains and septic tanks in India occurred in Uttar Pradesh, Tamil Nadu, and Delhi in the five preceding years[1]. The mechanization of manual scavenging is not merely a technological shift; it represents a profound transformation towards a more equitable and just society. By examining the challenges, opportunities, and outcomes associated with this transition.

Figure 5 Manual Scavengers risking their lives in order to clean manholes.
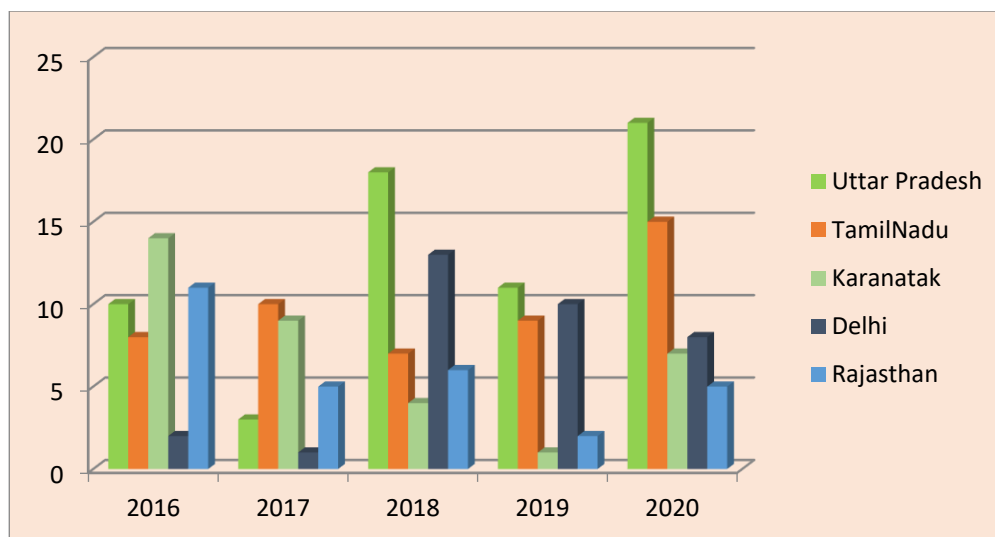
Figure 6 Manual Scavenger Deaths | Top 5 States [1]

LITERATURE SURVEY:

A literature survey on the mechanization of manhole cleaning and maintenance reveals a growing interest in developing safer and more efficient methods for these essential tasks. Mechanization in this context aims to reduce the risks associated with manual entry into manholes, improve productivity, and enhance overall sanitation infrastructure. Below, I provide a summary of key findings and insights from existing literature.

1. **Mechanized Equipment's:**

Sewer cleaning equipment, including grab containers, de-silting equipment, jet-rodding equipment, super suckers, and suction cum jetting machines, can be used. The maintenance engineer should attempt to achieve goals like decreasing the amount of obstructions and spills of waste or surcharge in order to manage and maintain a wastewater collection system so that it performs as intended. To do this, the sewage system has to have accumulated silt removed on a regular basis using mechanical cleaning procedures. If silt is allowed to build up, the pipe's capacity is reduced, and eventually a blockage may happen, causing the system to overflow. [2]

1. **(a) High Pressure Water Jet Cleaners:**

These devices clear obstacles from manholes and sewage systems by dislodging them with high-pressure water jets. For efficiently and safely cleaning manholes, storm water drains, sewage lines, and other tight places, high-pressure water jet cleaners are a need. These devices dislodge and remove debris, sediments, and obstructions using pressurized water, enhancing cleanliness, avoiding clogs, and maintaining the structural integrity of sewage infrastructure. There are several kinds of nozzles, including revolving, piercing, and multifunctional nozzles. The nozzle choice should be in line with the cleaning goals. While penetrating nozzles are made for cutting through obstinate clogs, rotating nozzles offer a strong and reliable cleaning action. For accessing manholes and avoiding obstructions, the high-pressure hose's length and flexibility are essential. For deep or far-off manholes, longer hoses could be necessary. [3]

1. **(b) Jet Rodding Machine:**

With the aid of jet-rodding equipment, clogs are removed from the main sewer and trunk sewers. Jet-rodding equipment is used to remove clogs, grit, and other debris from the drainage system in the main sewer/trunk sewers. Sewers are flushed with it as well. Using this device, obstacles in the sewage that can't be pulled out by hand using sewer cleaning rods are eliminated. However, the machine is not be able to use to clear home tanks/sewer obstacles or major obstructions in sewers with a lower diameter, in tiny lanes, or on narrow streets. Unlike earlier techniques employing the electric eel, jet rodding's tremendous force won't harm drainage. A draining rod won't be able to slide through a plumber's hand due to the suction, which might exacerbate the blockage issue. [4]

2. **Robotic System for Manhole Inspection:**

Cleaning the sludge out of manholes is the straightforward mechanism of this robotic device. Both emerging nations and the majority of wealthy nations have a significant need for this system. The size of the manhole is a significant issue when it comes to cleaning these manholes; because they are so small, it is quite challenging for anyone to enter and easily clean them. The second issue is that while cleaning these manholes, viruses that are hazardous to humans may be contained in the filth and come into contact with employees directly or indirectly, necessitating the use of a system to address these issues as well as several others. The device operates using a primary suction technique and either hoover (vacuum) pumps [5] or suction pumps. Modern lithium-ion solid polymer electrolyte batteries will power the suction pumps. [6][7], which have a large power and can be applied to portable electronics and space implementation, respectively. These reloadable batteries will also minimize the

power usage of other energy sources. These hoover pumps begin sucking the muck out of these manholes whenever the electricity is turned on. The breakdown of this sludge is another issue related to this procedure; in many locations, this sludge is either dumped in tributaries, contaminating the river branches, or dumped in open land, creating further issues. The present robotic technology additionally used to solve aforementioned issue. Using this approach, the sludge is held and disposed of in biodegradable bags [8][9]. Up to a particular amount of sludge is fed into these biodegradable bags using these vacuum or suction pumps, it is followed by the sealing and leading out of these bags. As one of these rolls of bags fills up and is removed by the robot's probe, another roll of bags is hauled out. The process is repeated with a different bag until the job is finished. When the entire procedure is complete, the bags are transferred to the location designated for their decomposition. Thus, the aforementioned issues will be resolved by this approach.[9]

3. **Automation of manholes using IoT:**

In the current situation, the cleaning of a drainage system's sedimentation often involves either physical labor or the use of a suction pump. The system to automate the process of removing the sediments from the effluents is suggested in this paper. The screening, which is intended to filter the sediments and let the waste fluids alone pass through it, will allow all effluents including sediment to pass through. When the preset level of sediments is achieved in the manhole, the flow rate will be continuously checked through the screening, and the piston action will be started to push the sediments downstream into the storage well. Using membranes or blocking pads, the inputs that will come from above and the back flow from the main sewage pipeline will be stopped in order to perform the piston action. The manhole is located next to a storage well, which will force sediments downward and keep filling it up. At the bottom of the storage well, a load cell will be installed, and when it exceeds a specific level, it will send an IOT message to the municipality, alerting it that the reservoir well needs to be replaced. The municipality's corporation will switch out the existing storage well for a new one using towing equipment. Hence, eliminates the need for people to participate in the sedimentation process. [10]

Methodology:

The main objective is to supply a fully automated monitoring and detection system that can accurately track the condition of an underground manhole and all of its physical characteristics, including its temperature, humidity, and dangerous gas levels.

Smart Manholes are used to replace outdated manholes. They may be made in any form and size to meet existing manholes and are retrofit. Flow sensors, a microcontroller, transmitter, and receiver are included in smart manholes. When they begin to gather information on the subterranean sewage system's flow rate, it is kept and maintained in data centers for future studies. The maintenance staff is promptly notified if the flow rate in any manhole exceeds the threshold limit so that the appropriate action may be taken. With pinpoint accuracy, the service crew will handle the problem with the relevant manhole, and the job may be completed quickly using cutting-edge cleaning equipment. [11-20]

Procedure and Working:

By using the present design, sensors and the Internet of Things (IOT) are employed as technologies. The city's numerous/confined chambers manholes make up the majority of the system. Information about the temperature, the existence of dangerous gases, and whether the chambers lid is present is provided for each specific manhole. There are no human observers present in this design at the area. As a result, without any contact between a human and a computer, the information is transferred automatically to the server.[21-22]

Step by step operation:

Start
1. Manhole Monitoring Initialization
   - Power On IoT Devices
   - Establish Network Connection (Wi-Fi, Cellular, etc.)
2. Sensor Data Acquisition
   - Collect Data from Manhole Sensors
   - Pressure Sensor
   - Temperature Sensor
   - Gas Sensor (for detecting hazardous gases)
   - Water Level Sensor
   - Lid Position Sensor (to check if the manhole is open/closed)
3. Data Processing
   - Analyze and Process Sensor Data
   - Convert Analog Data to Digital
   - Filter and Normalize Data
   - Check for Anomalies or Alerts
   - Store Data Locally or in the Cloud
4. Communication

     - Transmit Processed Data to the IoT Gateway
     - MQTT, HTTP, or Other Protocols
     - Ensure Data Security and Encryption
5. IoT Gateway
   - Receive and Forward Data
   - Implement Edge Computing (if necessary)
   - Buffer Data in Case of Network Issues
6. Cloud Platform
    - Data Storage
    - Database (e.g., SQL, NoSQL)
    - Real-time Monitoring
    - Dashboard for Visualization
    - Set Thresholds and Alerts
    - Historical Data Analysis
    - Machine Learning Algorithms (Predictive Maintenance)
7. Remote Monitoring
    - Mobile App or Web Interface
    - Access Real-time Data
    - Receive Alerts and Notifications
    - User Authentication and Authorization
8. Automated Actions
    - Decision Logic
    - Based on Sensor Data and Rules
    - Trigger Actions
    - Example: Alert Maintenance Team if High Water Level or Gas Leak Detected
    - Automatically Close/Open Manhole Lid (if applicable)
9. Maintenance and Updates
   - Regular Device Maintenance
   - Firmware Updates
   - Security Patching
10. End

Advantages of IoT based manholes:
Real-time Monitoring: These sensors provide real-time data on various parameters such as water level, gas levels, temperature, and lid status. This enables immediate detection of issues, reducing response times to critical situations.[23-33]
Preventive Maintenance: The data allows for predictive maintenance. By analyzing historical data and sensor readings, maintenance can be scheduled before a failure occurs, reducing downtime and repair costs.
Safety Enhancement: Monitoring hazardous gases and water levels in manholes helps in prevention of accidents and protect workers. Alerts can be generated when dangerous conditions are detected.

Conclusion:
In conclusion, given the serious issue with sewage cleaning, manual scavenging needs to be stopped in order to prevent health risks for people and reduce environmental pollution in our nation. The mechanization of sewage systems represents a significant advancement in the sustainability of the environment and the management of urban infrastructure. This modernization project offers a wide range of advantages, including improved public health and fewer environmental consequences, as well as increased efficiency in trash collection and treatment. The use of automated sewage systems has significantly decreased the amount of physical labor necessary for upkeep and repairs, lowering the health hazards related to working in dangerous conditions. Additionally, it has enabled more accurate wastewater flow monitoring and management, enabling prompt reactions to obstructions, leaks, and overflows, which can avoid expensive and harmful sewer-related accidents.

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Multicultural Education: A Review Study

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Abstract

Multicultural education has developed over the last several decades and it is becoming increasingly recognized as a significant educational issue and it is an approach to teaching and learning that is based on democratic values and beliefs and affirms cultural pluralism within culturally diversesocieties. The purpose of this piece to bring conceptual clarity to the field by examining what multicultural education means. With regard to those issues, this study could help educators clarify and reflect upon current understandings of multicultural education and ideas of appropriate practices. This paper presents a comprehensive research on multicultural education which has been written and it also evaluates the literature for its contributions to both the theory and the practice of multicultural education.

1. Multicultural Education

Multicultural education is a phenomenon which certainly has come into prominence in the world of education for years. In providing "multicultural education" for today's society, multicultural teaching in the class environment increased by developing new structural strategies and techniques (Banks 2008). Educators are in need of easily understandable and illuminative materials prepared in accordance with the dimensions of cultural diversity which help them provide their students with a more active and effective learning process. Moreover, Gorski (1999) argued multicultural education is a type of education which helps all students to develop knowledge, abilities and behaviors necessary for them to effectively participate in a democratic society. In addition to this, Banks and Banks (2004) emphasized that multicultural education is an area of study which aims at helping students from different races, ethnicities, social classes, and cultural groups to have equal opportunities in education. The fundamental objective of multicultural education is to help students consider their diversity of ethnicity and race as an educational alternative and develop their knowledge, skills and behaviors necessary for them to perform various educational activities, and to restructure schools in this direction (Au 2009). Multicultural education supports students to show tolerance towards those with backgrounds different from theirs on the one hand, and focusing on the protection of each student's cultural heritage on the other (Bennett 1999). To achieve this, courses relating to democratic citizenship © Kamla-Raj 2013 Anthropologist, 16(1-2): 31-44 (2013) and human rights need to be compulsory in the Turkish Education System. Gay (1995) addresses the fundamental aims of multicultural education under the titles of (1) equality and excellence in education, (2) the clarification of attitudes and values, (3) multicultural social competence, (4) proficiency in basic skills, (5) developing ethnic and cultural literacy, and (6) personal development. According to Gay (1994), equality and excellence in education can only be achievable when all groups in society have equal opportunities to access the highest quality of education possible. Gay (1994) defends comparability instead of sameness in providing equal educational opportunities for different students. In determining what the comparability in educational opportunities encapsulates, she argues that educators should precisely understand how culture shapes learning styles, teaching behaviors and educational decisions and develop a variety of means to accomplish the common learning outcomes that reflect the preferences and styles of a wide variety of groups and individuals. The guidance of multicultural education on the organization of learning environments is considered to be possible by accurately reflecting its principles upon learning environments. Banks (1999) outlined basic principles of learning and teaching in multicultural education as follows: (1) ending of racism, prejudices, sexism and other types of discrimination, (2) including different cultures in the learning environment, (3) combining the legacy, experiences and viewpoints of different cultures; establishing links between what is learnt at the school and real life experiences for culturally different students, (4) ensuring equal opportunities in education for all individuals, (5) conducting scientific research for the combination of different cultures, (6) undertaking humanistic attempts to understand and value different cultures, (7) considering content with process, structure and essence, action and projection, knowledge and values, philosophy and methodology, educational meanings and results together, (8) accepting systematic change as a developmental process, (9) being aware of the fact that differences enrich the content of education, (10) developing programs helpful for teachers to understand how characteristics of ethnic groups influence students' behavior, (11) supporting students to participate in latent programs that contribute to their academic success and their development of knowledge, abilities and attitudes which affect their relationship with each other, (12) enabling students to learn the prejudices against races and ethnic relations, (13) enabling students to learn common values, and (14) ensuring that the directors of education provide equal financial support for schools. Emergence

of some requirements by multicultural education practices provided a ground for the application of multicultural education programs, starting from pre-school classes in multicultural countries. Upon these developments, teaching multicultural education as a course at universities and colleges came to the agenda in some countries. In the USA, and European Countries (EU) where different cultural and ethnic groups live together, for instance, students are required to get at least one course on multicultural education in some universities. All these developments show that there is an increase in the multicultural education practices in the world, especially for the last several decades. However, there's not adequate research on multicultural education in Turkey and no one has synthesized and analyzed this body of literature. Thus, the purpose of this piece is to bring conceptual clarity to the field by examining what multicultural education means. In addition, this papers evaluates the literature for its contributions to both the theory and the practice of multicultural education, including a critical examination of its limitations.

2.   Characteristics and Issues of Multicultural Education

Martin Luther King Jr. once explained that: We are all caught in an inescapable network, mutually tied into a single garment of destiny. Whatever affects one directly, affects all indirectly. We are made to like together because of the interrelated structure of reality (Marshall 2002). As the world seems to be getting smaller and smaller with the widespread use of technology, the importance of multicultural education in all classrooms grows exponentially (Gay 1994). Students who have access via the internet to international gaming, shopping and social media sites need an even better understanding of the similarities and differences between their own cultures and those of the world around them (Hossain and Aydin 2011). Similarly, the ever-present reality of conflicts between nations reinforces the importance of multicultural education. People of varying backgrounds need to have a better understanding of one another has international implications for future generations.

The characteristics of multicultural education Gorski (2010a) identify seven issues for educators.

First and foremost, he emphasizes classroom delivery that should address a diversity of learning styles while challenging dynamics of power and privilege in the classroom. Specifically, working with students' collaborative learning, mutual understating, and dialogue with all students equally, to give a chance students to teach classroom about the same topic. Banks (1999) recommends that teachers and school administrators should have "high expectations for all students… and respond to them in positive and caring ways" (p. 17).

The second characteristic is content of topic. Gorski underlines that content must be complete and accurate, acknowledging the contributions and perspectives of all groups who are coming from different perspectives. He recommends that educators should avoid tokenism. Through content, multicultural educators should address some special units and lesson plans in their curriculum. In addition, Aydin (2012b) emphasizes that multicultural education curriculum should include special days and holidays from all different cultural groups, such as Ramadan in the holy month Aid Al Fitr for the Muslim population, Thanksgiving for Christians, and so on. Teachers should also diversify images and content in bulletin boards, posters, and other visible materials, specifically during special months or celebrations. As well as, teaching and learning materials needs to diverse and critically examined for bias. The instructional materials that uses in the school should show events, situations, and concepts from the perspectives of a range of cultural, ethnic, linguistic, and racial groups (Banks 1999). Educators also need to examine all materials, such as texts, newspapers, movies, games, and workbooks for biases and oppressive content. In addition, educators must avoid materials that show stereotypes or inaccurate images of people from certain groups or eras. They also should be careful regarding materials that talk from a male-centric, Christiancentric, and any centric view. Moreover, Bank (1999) highlights that the teaching styles used by teachers should match the learning, cultural, and motivational styles of the students and teachers, administrators, and staff members should respect for the students' first languages and dialects.

A third characteristic is a critical inclusivity. Gorski (2010a) argues that students must be engaged in the teaching and learning process, transcend the banking method and facilitate experiences in which students learn from each other's experiences and perspectives. He gave an example, that to bring the perspectives and experiences of the students themselves to the fore in the learning experience, encourage students to ask critical questions about all information they receive from you and curricular materials, and model this type of critical thinking for them, such as who drew this great picture?, who created this web site?, and who wrote this wonderful essay? And educator should make a content and delivery relevant for the students—facilitate experiences in which they connect it with their everyday lives. As educators, we should recognize our students as ours most important multicultural resources because we have high expectations for students from different racial, ethnic, and language groups and help these students to set and realize positive career goals (Banks 1999).

The fourth characteristic is a social and civic responsibility. For this characteristic, Gorski (2010b) discusses that educators ought to prepare students to be active participants in an equitable democracy, teachers must educate

students about social justice issues and model asense of civic responsibility within the curriculum. Gay (2000) stresses that multicultural education program must promote a learning community with democratic values and beliefs that create an environment of mutual respect in an intercultural society. The teachers should be starting with the youngest students, incorporate discussions about difference and inequality into their lessons—this can be done across all subject areas. As educators we should encourage students think critically world's problems, such as dictatorship in the Middle East counties, communism in China, capitalism in the United State, corruptions in African countries, and other traditionally untouchable subjects of critique so on. We should be honest with our students when discussing about the history of privilege and oppression in any subjects' areas, schools, education, society at large with connecting teaching and learning to local communities and larger global issues. As many multicultural educators, including Nieto and Bode (2011) emphasize that multicultural education promotes a comprehensive approach for presenting a global understanding of the world. The entire educational community should stimulate democratic values and beliefs that affirm the experiences and histories of diverse groups and exemplify social justice, equality and the human dignity of each student. In addition, Rey (1991) argues that teaching with a multicultural perspective encourages appreciation and understanding of other cultures as well as one's own. Teaching with this perspective promotes the child's sense of the uniqueness of his own culture as a positive characteristic and enables the child to accept the uniqueness of the cultures of others.

3. Review Literature

- **"Multicultural Education as an Academic Discipline: Goals for the 21st Century"** by **James A. Bank**

Advocates a model of multicultural education plus integration to ensure that multicultural education is both taught by committed experts and integrated into general courses. Defining a rigorous scholarly and research agenda and developing strong leaders and standards for practice will ensure the place of multicultural education as an academic discipline. (SLD)

- **"Educating Citizens for a Multicultural 21st Century"** by **Lily Filmore**

To build a multicultural society, the most important steps are made in the classroom. School expands the child's world, but schools cannot educate or prepare children for the multicultural twenty-first century without involving parents and communities. Teachers, parents, and citizens must engage in learning together. (SLD)

- **"Obstacles to Accessing the Teaching Profession for Immigrant Women"** by **JoAnn Phillion**

Explored the experiences of five visible minority immigrant women as they went through the teacher certification process in Ontario, Canada. All had teaching experience and certification in their native countries. Data from observations and interviews indicated that these women faced great obstacles (systematic, social, and general) in attempting to become teachers in North America which served to dramatically alter their dreams.

- **"Accommodating Cultural Differences and Commonalities in Educational Practice"** by **Ronald G. Gallimore**

Explores distinguishing between the group-defining function and other adaptive functions of culture is to show why educators need to accommodate cultural commonalities and differences. Recognizing similarities when they exist is an aspect of multicultural education that is sometimes overlooked when concentrating on cultural discontinuities.

- **"Assessing Students' Attitudes and Achievements in a Multicultural and Multilingual Science Classroom"** by **Samina Hadi-Tabassum**

Takes a qualitative and quantitative look at the curriculum and teaching of a two-way immersion eighth-grade solar energy science classroom and examines its implications for education policy and reform. Results for a class of 25 students indicate that the approach increases the retention rate of Hispanic students. (SLD)

- **"Anti-Bias Teaching To Address Cultural Diversity"** by **Loren M. Marulis**

Multiculturalism must be integrated into classrooms and the curriculum, and it must be all-encompassing, taught through formal lessons and modeled and demonstrated at all times. Describes how teachers can create an anti-bias curriculum and promote a multicultural or anti-bias classroom. An annotated bibliography of recommended materials and supplies is included. (SM)

- **"The Idolatry of Multicultural Education: A Prophetic Pragmatic Alternative"** by **Jeffrey Ayala Milligan**

Criticizes the idolatry implicit in concepts of inclusion and empowerment in education and advocates the prophetic pragmatism of Cornel West (1989) as an alternative philosophical framework for education that responds to the same underlying moral purpose. Prophetic pragmatism offers a less-divisive plan for multicultural education than does the conflict between eurocentrism and multiculturalism.

- **"Multicultural Education and Culture Change: An Anthropological Perspective"** by **Stanton William Green**

Discusses the difficulty inherent in teaching multiculturalism within a nation as culturally diverse and changing as the United States. Teaching cultural awareness from an anthropological perspective is explored. The article argues that the educational community must develop curricula and pedagogies that incorporate an understanding of cultural continuity and change within the framework of cultural diversity and American pluralism. (GR)

- **"Confessions of a Canon-Loving Multiculturalist. School Reform and the Language Arts Curriculum"** by **Anne Fairbrother**

Bitter ideological battles exist over hegemonic control of classroom exchange in high school language arts classes. Discusses the debate over the selection of literature that students will read, noting the influence of the dominant culture, the resistance to inclusion of multicultural literature in these classrooms, and the importance of promoting a multicultural emphasis.

- **"Breaking Racial Stereotypes by Reconstructing Multicultural Education"** by **Pete Pullen**

Racial stereotypes and discrimination have destroyed many bright futures by limiting the possibilities of people of color in America. Describes two initiatives that can be implemented in schools in order to help destroy negative images of race and reconstruct a more healthy foundation to build on: multiculturalism across the curriculum and multicultural awareness inservices for teachers.

- **"Bridging Multicultural Theory and Practice"** by **Geneva Gay**

Gaps between multicultural theory and practice present some serious challenges and opportunities for future directions in the field. Instead of arguing about the best way to do multicultural education, it is more useful and empowering to legitimize multiple-levels appropriateness in working toward systemic reform.

- **"Reflections on Multicultural Curriculum. Building Community through Global Problem Solving"** by **Arlene Lenaghan**

Describes the importance of teaching students empathy for and understanding of cultural differences, explaining how to build community through shared responsibility in global problem solving. Three examples of this type of curricular exercise, which focus on nutrition, economic structures, and ecology, are presented. Curricular considerations when writing such curricula are included. (SM)

- **Multicultural Education Requirements in Teacher Certification: A National Survey by Elizabeth D. Evans**

Investigated multicultural education requirements by various State Departments of Education for issuance of teaching credentials or teacher certification. Responses from 51 questionnaires indicate 25 states had requirements for multicultural education. Differences in certification requirements and systems are described.

4.   Conclusion

Scholars discussed that the term multicultural education means different things to different people. As Sleeter and Grant (1987) argues that the only common meaning is that it refers to changes in education that are supposed to benefit people of different ethnic identities (p.436).Thus, researchers suggest that future research should include more international studies that deal with global issues in multicultural education. As the world becomes more interconnected, multicultural education is increasingly becoming a significant educational issue in many countries.

A Study on Impact of Leadership Style on Employee Retention in a Hybrid Model

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ABSTRACT

This research aims to understand how leaders of the oraganisation have been able to apply leadership styles to retain their employee in a hybrid model through various strategies and engage their employees. The study also focuses on understanding the different leadership styles preferred by the employees and suggestions given to the organisation on building a work culture where employees are able to build a network and feel connected to the organisation. The data was tabulated, analysed, and presented through graphs and charts.

Keywords : Leadership Style, Employee Retention , Hybrid Model

1. Introduction

Organizations need to keep the best employees around to thrive. This is the goal of employee retention. Employee retention refers to the strategies an organization builds to reduce employee turnover risks and the processes it puts in place to retain its critical talent. Employee retention is a leading challenge for organizations and Human Resource departments today. Individuals leave their jobs for many different reasons. Some are voluntary, such as taking another job, while others are involuntary, such as getting laid off. Employee retention strategies primarily focus on voluntary turnover that is detrimental to the organization, as opposed to the loss of a poor performer. It also focuses on turnover that is avoidable, such as an employee leaving their job because they're moving out-of-state. Therefore an effective leadership open an inclusive environment where everyone feels comfortable sharing their ideas by insuring employees have a forum to voice their concern and opinions a leader can encourage our work culture where new ideas are welcome and misunderstandings are avoided. Hence it creates an atmosphere of trust and respect which turn brings creativity and collaboration. Employee morale is also higher in workplaces with strong management leading to greater motivation. An effective leader makes all the differences in the teams productivity when employees feel valued and motivated, they are more likely to be productive on other hand a poor leader can cause employees to become disengaged and uninterested in their work. A team that is led effectively will be more productive efficient and successful overall. Thus Leadership plays a vital role in retaining the employees of the oraganisation. Leaders provide direction and vision, motivate, and inspire employees to achieve the organization's goals, and help to create an environment conducive to success by promoting communication and collaboration among team members. In short, leadership and strong management are essential for any organization that wants to achieve its objectives.

2. Literature Review

I. G. B. Krisna Dwipayana and I. GustiMade Suwandana (2021) investigated in their paper titled "The Effect of Leadership Style on Employee Retention at Ayodya Resort Bali with Non- Physical Work Environment as Moderating Variable" which studied the importance of effective leadership in retaining employees, and the need for companies to pay attention to the non-physical aspects of the work environment. Employers who prioritize employee retention can benefit from lower staff turnover rates, higher productivity, and better overall business performance.

Divya Jyoti Thakur and Dr. Pooja Verma (2021) investigated in their paper titled "The impact of leadership on employee's turnover intention" which represents intellectual in the developing field of Leadership. This research examined the impact of two leadership styles, Responsible Leadership and Servant Leadership, on employee turnover intentions. The study found a significant relationship between both leadership styles and turnover intentions, indicating that they have a negative effect on employees' desire to leave the company. Therefore, it can be concluded that Responsible Leadership and Servant Leadership are key factors in reducing turnover rates within an organization..

Georg Hauer, Thuy an Jennifer Quani, Yung Kuei Liang (2021) investigated in their paper titled "Leadership as an influencing factor in employee retention - a case study analysis in East Asian multinational corporations in the digital age". The findings highlighted that motivational factor and managerial competencies such as emotional intelligence, communication, and transformational leadership style as prime concern to effectively retain

employees. More importantly, a leader's role is to convey emotions, such as passion and enthusiasm and to inspire followers to achieve their goals.

Kangri Njeri Jacqueline, Kenya Gladys Nafula(2021) investigated in their paper titled "Leadership styles and employee retention in telecommunication industry in Kenya: a case study of Safaricom limited, Nairobi" the findings of the study showed that there is a weak, positive, and significant correlation between directive leadership style and employee retention. The researcher recommends that the leadership of organizations formulate policies, strategies and guidelines that promote the appropriate leadership styles which enhances employee retention.

Mukesh Choudhary (2019) evaluated in paper titled "Impact of Leadership Style on Staff Retention" The study explores the grandeur of leadership and offers a concise account of how types of management influence the success of staff in a company. The study aimed to define the leadership types impacting the retention of workers in the Indian banking sector. Hence, an entity will be affected adversely from bank operations to the strategic level if best employees are not kept inside the group.

3. Statement of the Problem

Post Pandemic, the hybrid model has gradually gained importance in the working culture of the organization, companies, and firms .This research aims to study how the leaders of the company are retaining their employees using the hybrid workforce model. The research also tries to understand the challenges faced by the leaders in an organisation in a hybrid work force model, such as interaction between the people of the organization.

4. Objectives

1. To analyze the relationship between leadership styles and employee retention in hybrid model.
2. To identify the style of leadership preferred by Employees.
3. To speculate the improvements that can be made in employee retention in a hybrid model.

5. Research Methodology

The methodology followed for conducting the study included the specification of research design, sample design, questionnaire design, data collection and statistical tools used for analysing the collected data. The research was conducted and analysed in Descriptive way. The questionnaire were circulated among 152 employees out of which only 101 responded.

6. Research Design

The data is both Primary and Secondary data. The data collected has been summarised to study and understand the employees perception about leadership style on employee retention in a hybrid model. The data was collected from both primary and secondary sources but focuses on primary sources i.e., employees of in Bengaluru.

7. Limitation of the Study

❖ The data was collected only from the employees in Bengaluru.
❖ The questionnaire was circulated to 152 employees out of which only 101 employees responded.
❖ The time given to conduct the research was limited.

8. Data -Analysis and Interpretation

TABLE NO.1: Table showing the agreement of the respondents whether there is an effective relationship between leaders and their teammates in a hybrid model

OPTIONS	NO OF RESPONDENTS	PERCENTAGE(%)
Strongly Agree	20	19.8
Agree	50	49.5
Neutral	26	25.7
Disagree	5	5
Strongly Disagree	0	0
Total	**101**	**100**

GRAPH SHOWING THE AGREEMENT OF THE RESPONDENTS WHETHER THERE IS AN EFFECTIVE RELATIONSHIP BETWEEN LEADERS AND THEIR TEAMMATES IN A HYBRID MODEL
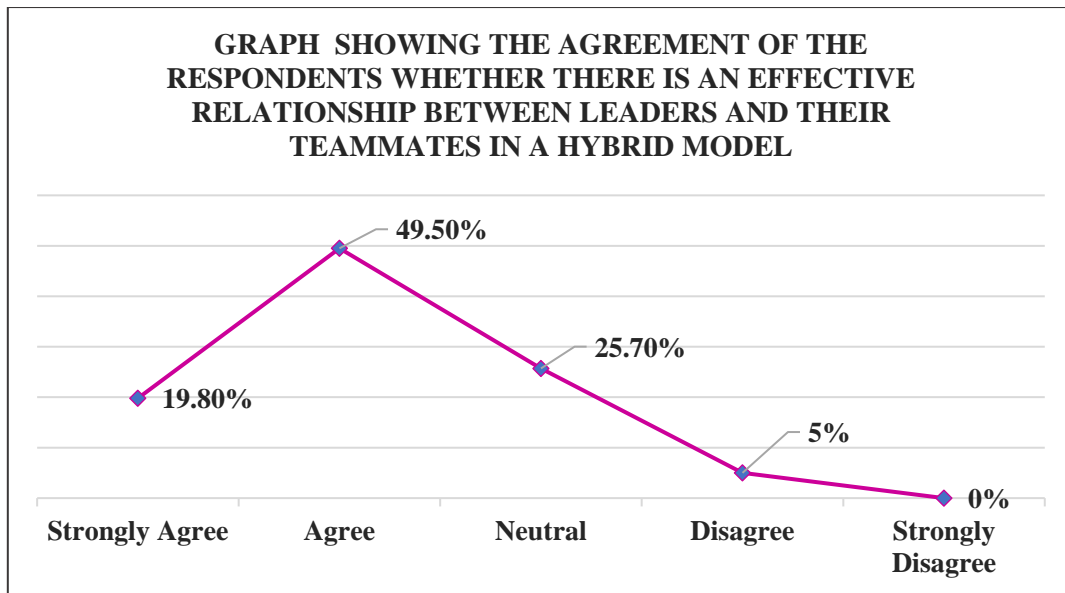
Table No.2: Table Showing The Perspective of the Respondents on which Leadership Style will be most Effective in Retaining Employees in Hybrid Model

Leadership Styles	No. of respondents	Percentage (%)
Transformational leadership	56	55.4
Transactional Leadership	7	6.9
Democratic/Participative Leadership	17	16.8
Delegative Leadership	6	5.9
Visionary Leadership	11	10.9
Coercive Leadership	1	1
Laissez Faire Leadership	3	3
Total	**101**	**100**

GRAPH SHOWING TYPES OF LEADERSHIP STYLE

- Laissez Faire Leadership. 3%
- Coercive Leadership. 1%
- Visionary Leadership. 10.90%
- Delegative Leadership. 5.90%
- Democratic/Participative… 16.80%
- Transactional Leadership 6.90%
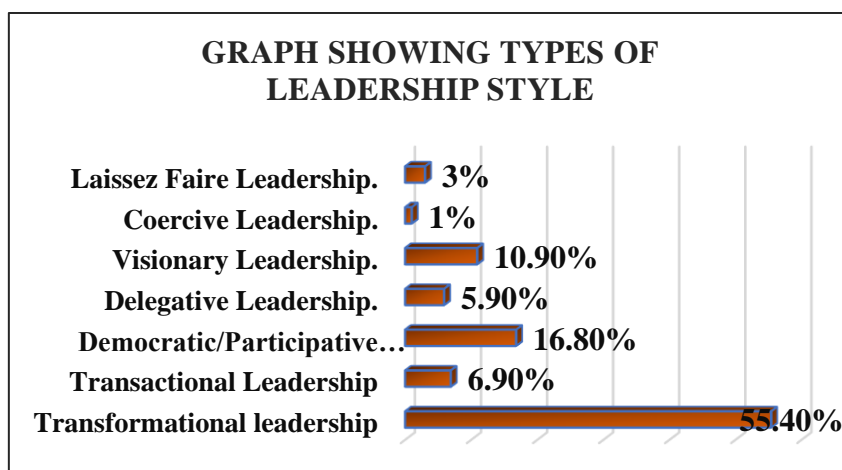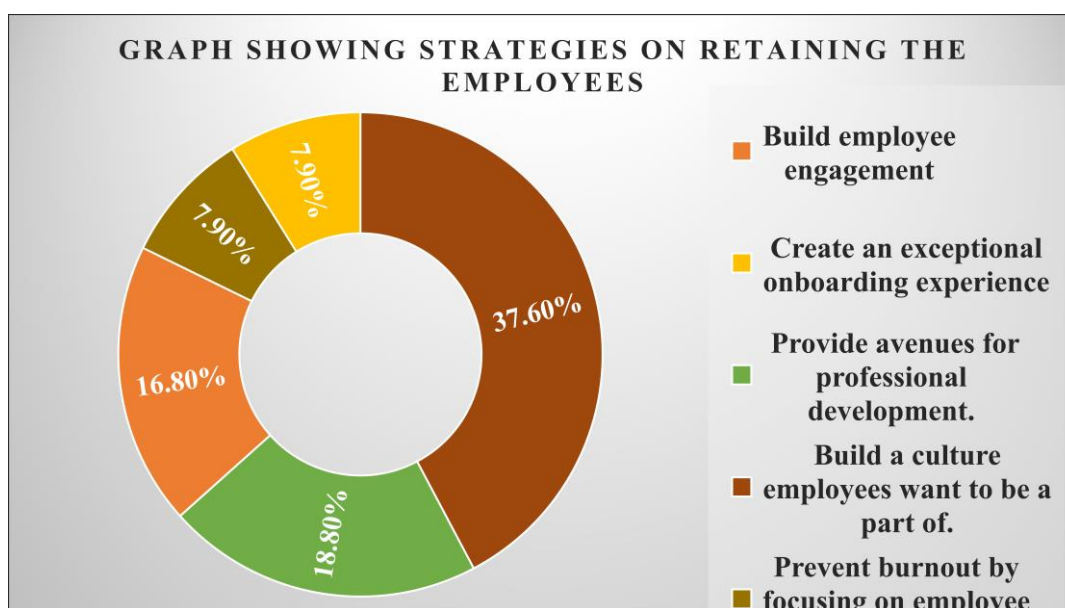- Transformational leadership 55.40%

TABLE NO.3 : Table showing the perspective of the respondents on the strategies which can help in retaining employees in hybrid model.

STRATEGIES	NO. OF RESPONDENTS	PERCENTAGE (%)
Build employee engagement	17	16.8
Create an exceptional onboarding experience.	8	7.9
Provide avenue for Professional Development	19	18.8
Build a culture employee want to be a part of.	38	37.6
Prevent burnout by focusing on employee wellness	8	7.9
Total	**101**	**100**

9. Findings

- ❖ The leaders of the organisation feel that hybrid model has helped in reducing the problem of employee retention, as it allows flexible working. The employer can thus retain talented and experienced employees.
- ❖ Transformational Leadership was the most prominent style of leadership preferred by the employees as these leaders encourage, inspire, and motivated their employees to perform the job effectively and efficiently. This type of leadership style is more approachable in nature.
- ❖ The employees of the company can build co – ordination with their teammates in a hybrid model. Therefore we can say that the leaders of this company have built a good relationship with their teammates even in a hybrid model.
- ❖ The Hybrid model work culture has helped the organisation in reducing the toxic work environment and the employees are able to maintain a good work life balance.

10. Conclusion

Employees Retention is a critical matter for all the organisation in the industry today. The Post Pandemic situation has gained more importance as it has been difficult for the Management and the employees of the companies to adjust to the new environment, working style etc. The leaders of the company came up with many strategies, methods, and techniques of working in order to carry on their work as such the concept of Hybrid Model came into force. Today many companies are working through Hybrid model wherein the employees have the flexibility in their working style and managing the work life balance. At the initial stage of this model the leaders of the company had faced many issues about employee engagement and they had come up with different strategies to overcome the issue. From the study conducted , we can conclude that the leaders of the company has been successful in building an environment wherein the employees are satisfied with the work culture of the company,

co-ordinate with their seniors and have a good work life balance. The employees of the company are given flexibility in working in a hybrid model wherein they can work in office and work from home.

11. Suggestions

- The leaders in the organisation should always motivate, provide opportunities, and have a good attitude towards their employees so that they feel that they are part of the organisation even in a hybrid model.
- The firm should build a work culture where the employees can pitch in their ideas and be a part in the decision making of the firm.
- The employees prefer to have Transformational Leadership style hence it could be better if the organisation follow much of this style.
- The organisation should ensure job satisfaction among employees as it creates a sense of job security and thus helps in retaining them.

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Impact of Big Data Analytics in Healthcare

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Abstract

Integrating Big Data Analytics (BDA) in healthcare holds great promise for leveraging cutting-edge technologies in patient treatment and healthcare management. This paper's primary objective is to assess the potential applications of Big Data Analytics within the healthcare sector, exploring how it can revolutionize patient care and improve overall healthcare outcomes.

The research methodology employed for this study involves a meticulous and comprehensive analysis of the existing literature in the field, combined with the presentation of key findings from original research conducted in medical facilities. By critically examining a wide range of sources, including scholarly articles, industry reports, and case studies, we aim to provide a holistic view of the advantages and challenges associated with the adoption of Big Data Analytics in healthcare.

The review of existing literature underscores the manifold advantages that the adoption of Big Data Analytics can offer to healthcare institutions. By leveraging vast amounts of structured and unstructured data, healthcare providers can gain valuable insights into patient behavior, treatment effectiveness, and disease patterns. This, in turn, enables them to make more informed decisions, customize treatments to individual patients, and improve overall healthcare delivery. Empirical research conducted in medical facilities across India further validates the growing engagement with structured and unstructured data in the healthcare sector. These data originate from diverse sources, including databases, transaction records, unstructured content like emails and documents, and information collected from various devices and sensors. While the incorporation of data from social media remains relatively low, it is noteworthy that medical institutions are actively exploring its potential for enhancing patient care and public health initiatives.Moreover, the integration of Big Data Analytics in healthcare goes beyond improving patient treatment. It can revolutionize healthcare management by enabling more efficient resource allocation, optimizing staffing levels, and streamlining administrative processes. By harnessing the power of data analytics, healthcare organizations can enhance operational efficiency, reduce costs, and ultimately provide better services to patients. However, it is crucial to address the challenges associated with implementing Big Data Analytics in healthcare. These challenges include data privacy and security concerns, interoperability issues, and the need for robust data governance frameworks. By acknowledging these challenges and working towards effective solutions, healthcare institutions can ensure the responsible and ethical use of data while reaping the benefits of Big Data Analytics.

The integration of Big Data Analytics in healthcare holds immense potential for transforming patient care and healthcare management. Through a combination of in-depth literature review and original research findings, this paper has highlighted the advantages and challenges associated with its adoption. By harnessing the power of data analytics, healthcare institutions can make data-driven decisions, enhance treatment outcomes, and improve overall healthcare delivery. Thus, embracing Big Data Analytics is a crucial step towards a more efficient and effective healthcare system.

Keywords: Big Data, Volume, Variety, Velocity, Healthcare

1. Introduction

The primary focus of this study is to provide a comprehensive analysis of the utilization of structured and unstructured data analytics in context to the healthcare industry. In the field of healthcare, medical facilities employ a combination of structured and unstructured data in their operational processes. Structured data is characterized by having a pre-established schema, exhibiting a wide range of formats, and being vast and freeform [20]. On the other hand, unstructured data, commonly known as Big Data (B.D.), does not conform to the conventional data processing format. Big Data refers to an extensive collection of data sets beyond the capacity of conventional storage, processing, and analysis methods. The data is retained without undergoing analysis. A well-defined schema is needed to be more robust in searching and analyzing this data, necessitating specialized technology and methodologies to extract its value [23]. Integrating data held in both structured and unstructured formats can provide substantial benefits to an organization. Organizations need to adopt a distinct approach when dealing with unstructured data. Hence, the potential of Big Data Analytics (BDA) is observed. Big Data Analytics are techniques and tools used to analyze and extract information from Big Data. The utilization of Big Data analysis gives the potential to make future predictions.

Furthermore, they contribute to the generation of historical patterns. In healthcare, the use of massive datasets from many patients enables the examination of clusters and correlations within the datasets and the creation of predictive models through data mining techniques. This report is the first investigation that aims to amalgamate

and delineate the utilization of Big Data from several vantage points. The initial section contains a concise review of the existing literature.

The healthcare system is intricate, encompassing diverse stakeholders, including patients, physicians, medical facilities, pharmaceutical corporations, and healthcare policymakers. Stringent norms and regulations additionally constrain this sector. Nevertheless, there is a global trend towards moving away from the conventional doctor-patient model. The physician assumes a collaborative role, establishing a partnership with the patient and engaging the patient in the treatment process [14]. The healthcare industry has shifted its focus beyond the exclusive provision of patient treatment. The primary focus for decision-makers should be the promotion of favorable health attitudes and the prevention preventable diseases. The visibility and significance of this phenomenon were particularly pronounced in the context of the Covid-19 pandemic [17]. One of the forthcoming issues confronting the healthcare sector pertains to the escalating population of aged individuals and a drop in reproduction rates. The fertility rates in the country are below the minimum threshold required for maintaining a stable population [10]. The reflection of both effects, namely the aging population and declining birth rates, indicates a steadily increasing demographic burden. According to projections, the current model of healthcare provision will face insurmountable challenges within the next two decades [15].

2. Considerations on the use of Big Data and Big Data Analytics in Healthcare

In recent years, there has been a noticeable and consistent rise in the need for solutions that provide efficient analytical tools. The observation of this phenomenon is similarly evident in examining substantial quantities of data, sometimes called Big Data (B.D.). Organizations are actively seeking strategies to leverage the potential of Big Data in order to enhance their decision-making processes, gain a competitive edge, and enhance overall business performance [7]. The potential benefits of Big Data in both public and private organizations have been widely acknowledged. However, there needs to be a more comprehensive understanding of the practical implications and outcomes of implementing Big Data in various organizational contexts [22]. As previously stated, there has been a shift in healthcare management globally, transitioning from a disease-focused approach to a patient-centric one, including within the framework of value-based healthcare delivery models [18]. To fulfill the criteria of this model and deliver efficient patient-centered care, it is vital to effectively handle and analyze large volumes of healthcare data, commonly referred to as Big Data. The matter frequently brought up in discussions around the use of data in the healthcare field pertains to the proper application of Big Data. The healthcare sector has consistently produced substantial volumes of data. The implementation of electronic medical records, coupled with the influx of data from diverse sensor types and patient-generated content on social media platforms, has resulted in a continuous expansion of data streams.

Moreover, the healthcare sector produces substantial data, encompassing clinical records, medical imagery, genomic information, and health-related behaviors. The appropriate utilization of data enables healthcare organizations to facilitate clinical decision-making, conduct disease surveillance, and manage public health effectively. The clinical data processing task encompasses the voluminous nature of the data and the intricacies associated with its processing.

When discussing Big Data, it is essential to acknowledge that the term primarily pertains to phenomena rather than being limited to certain technological aspects. Consequently, rather than providing a definitive definition or attempting to characterize this phenomenon, a growing number of authors are delineating the characteristics of Big Data by attributing to it a set of V's that pertain to its inherent nature [2, 3, 18,19].

Volume, which pertains to the quantity of data and represents a significant obstacle in the field of Big Data Analytics,

Velocity refers to the rate at which new data is generated. The primary problem lies in the practical and real-time management of this data.

The concept of variety in healthcare data refers to heterogeneity or multiple data types within the healthcare domain. The main difficulty is extracting meaningful insights by considering all the diverse data accessible comprehensively and integrated.

The concept of variability refers to inconsistency within data, posing a challenge in accurately interpreting information that can exhibit large fluctuations depending on the specific context.

The concept of veracity pertains to the degree of trustworthiness and quality of facts.

The interpretation of data and the extraction of insights through visualization can be particularly problematic in the context of Big Data, given its unique characteristics, as previously discussed.

Big Data Analytics aims to uncover latent knowledge inside vast quantities of data.

The concept of Big Data refers to an information asset with significant characteristics in terms of volume, velocity, and variety. The effective extraction of value from Big Data necessitates the utilization of specialized technology and methodologies [21]. Big Data is a compilation of large volumes, exhibits high volatility or diversity, and necessitates novel processing methods to facilitate decision-making, uncover novel phenomena, and optimize processes [5, 7]. The size of Big Data surpasses the capabilities of conventional data-processing systems and software tools in capturing, storing, managing, and analyzing it. Consequently, the management of Big Data necessitates the utilization of novel technologies [28, 50, 61] to effectively handle its volume, velocity, and

diversity [9]. Undoubtedly, Big Data exhibits distinct characteristics compared to the data sources that organizations have traditionally utilized. Hence, organizations must adopt a distinct approach when dealing with unstructured data.

To begin with, organizations must shift their perspective on data from static entities to dynamic processes. This necessitates streaming analytics, as referred to in the literature [48]. The qualities mentioned above need novel information technology tools that enable the optimal utilization of emerging data [58]. The concept of Big Data, which is closely tied to the significant growth in data accessible to different entities, presents prospects for gaining essential insights, concluding, and facilitating more precise decision-making [6, 11].

3. Challenges and potential benefits of using Big Data Analytics in Healthcare

Contemporary analytics offers opportunities for retrospective data analysis and acquiring the requisite knowledge to develop prospective insights, even in the context of forecasting evidence-based actions. The focus on reform has led payers and suppliers to engage in data analysis in order to mitigate risk, identify instances of fraud, enhance operational efficiency, and enhance patient outcomes. All stakeholders, including payers, providers, and patients, prioritize optimizing resource use for greater efficiency.

Healthcare organizations recognize the potential for expansion by investing in Big Data Analytics. In recent years, there has been a growing trend of gathering medical data from patients, transforming it into Big Data, and utilizing suitable algorithms to derive valuable insights. This practice has proven to be beneficial for patients, physicians, and other stakeholders in the healthcare industry, as it enables the identification of significant values and opportunities [13]. It is noteworthy to acknowledge that the healthcare sector is undergoing numerous transformations and encountering various obstacles in its structure. Utilizing digital technologies and efficiently analyzing large-scale data in the healthcare industry can yield advantages for all parties involved. An individual doctor and the entire healthcare system would derive equal advantages from a particular circumstance. The potential benefits and effects of utilizing Big Data in the healthcare sector can be categorized into four distinct groups [8].

a. Improving the quality of healthcare services:

The evaluation of diagnoses rendered by medical professionals and the approach to illness treatment recommended by them, utilizing a decision support system operating on extensive collections of Big Data. The aim is to identify more efficient and economically viable methods for diagnosing and treating patients, specifically focusing on medical effectiveness. The examination of extensive datasets to derive practical insights that can be utilized to identify requirements, implement new health services, and prevent and resolve crises. The focus is on three main aspects:

• Forecasting the occurrence of diseases

 • Identifying patterns that contribute to the enhancement of public health and societal well-being

• analysis of the human genome for the introduction of personalized treatment.

 b. Supporting the work of medical personnel

 Physicians engage in the comparative analysis of contemporary medical cases with historical examples to enhance diagnostic accuracy and refine treatment strategies. The identification of diseases in their early stages facilitates prompt and effective interventions, leading to higher chances of successful recovery. The identification of epidemiological hazards and the enhancement of control measures for pathogenic areas and response rates.

The objective is to identify patients who are at the highest risk of developing specific life-threatening diseases. This will be achieved by collecting data on the medical history of individuals, focusing on the most prevalent diseases. The data will be obtained from reports submitted to insurance companies. The individualized health management of each patient (known as personalized medicine) and the collective health management of the entire society.

The process involves collecting and examining substantial volumes of data obtained from medical facilities and residential settings in real time. This is achieved through life monitoring devices, which are employed to ensure safety and forecast any unfavorable occurrences.

This study analyzes patient profiles to identify individuals who would benefit from preventive measures, such as lifestyle changes or preventive care interventions. Additionally, it aims to develop the capability to predict the occurrence of specific diseases or the deterioration of patients' conditions. Furthermore, the study aims to predict disease progression, identify its determinants, and estimate the risk of complications. Lastly, it aims to detect drug interactions and their associated side effects.

c. Supporting scientific and research activity

The utilization of comprehensive data analysis, as opposed to limited test samples, facilitates the advancement of research on novel pharmaceuticals and clinical trials. This approach identifies patients with specific biological characteristics, enabling their participation in specialized clinical trials. Furthermore, it allows for selecting a

patient cohort more likely to experience the desired therapeutic effects of the tested drug while minimizing adverse reactions. Additionally, the application of modeling and predictive analysis aids in developing improved pharmaceuticals and medical devices.

d. Business and management

The objective is to decrease expenses and mitigate misconduct and unethical counseling practices. The aim is to expedite and enhance the process of identifying inaccurate or unauthorized financial transactions, intending to prevent misconduct and rectify errors promptly. There are two key objectives in this context. Firstly, profitability can be enhanced by effectively identifying patients who incur high costs and identifying doctors whose work, procedures, and treatment methods result in significant expenses. Doing so can offer appropriate solutions to mitigate the financial burden. Secondly, identifying unnecessary medical activities and procedures, such as duplicate tests, is crucial for optimizing resource allocation and reducing unnecessary expenditures.

4. Conclusion

The qualitative analysis conducted and provided in this paper facilitated the assessment of the utilization of Big Data Analytics in medical facilities and in the identification of specific domains in which it is employed. The formulation of the following conclusions was made possible due to the results gathered. Medical facilities are actively engaged in utilizing both structured and unstructured data, which originates from many sources such as databases, transactions, unstructured material found in emails and documents, and data collected from devices and sensors. As indicated by research findings, Analytics is widely utilized in several domains, such as administration, commercial, and clinical settings. The evidence indicates that the decisions taken are predominantly based on empirical data. The findings of the investigation validate the existing analysis documented in the literature. There is a growing trend in medical facilities towards adopting data-driven healthcare and its associated advantages. To summarize, we can say that Big Data Analytics can yield favorable outcomes and exert worldwide ramifications within healthcare. Future studies in the field of Big Data utilization within medical facilities will focus on elucidating the tactics employed by these establishments to facilitate the adoption and implementation of such solutions. Additionally, investigations will delve into the advantages of applying Big Data analysis in medical contexts and the prevailing attitudes surrounding this domain.

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A Comparative Study of Multidimensional Poverty between EAG and Non-EAG States of India

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Abstract

Poverty has many dimensions beyond a lack of money. This article makes an attempt to analyse the multidimensional poverty for EAG states and compare it to Non-EAG states. The data has been collected from various secondary sources, viz., The Global Multidimensional Poverty Index, 2019, Planning Commission, Census and RBI website. The data reveals that the MPI index of EAG states is 0.168 in 2015-16 and it is significantly higher than Non-EAG states and the national average. However, the reduction in the MPI, incidence and intensity of poverty is higher in EAG states than Non-EAG states in reference period.

It also presents the changes in multidimensional poverty for the states from 2005-06 to 2015-16. The fall in the MPI values in the recent years across states is an indicator of a positive change in the economy. This study also identifies the factors that might have affected multidimensional poverty in the country. The result shows that higher per capita NSDP reduces the incidence and intensity of poverty for the state. So, the article suggests significant governmental efforts to improve educational standards including skill development for increasing per capita NSDP of the state.

Keywords: EAG states, Multidimensional poverty, Incidence, Intensity, Headcount ratio, Per capita NSDP.

1. Introduction

Traditionally, poverty is measured by the resources people command. The most common measures of resources are monetary indicators of income or consumption. But, poverty has multiple aspects which cannot be measured by monetary indicators only. Sen argues that poverty should be seen as capability deprivation rather than in the space of income or resources. Capabilities are broadly defined as people's freedom to choose what to be and do. They are at the heart of human development (UNDP, 2019). Like development, poverty is also multidimensional. According to Alkire, poverty is a condition in which people are exposed to multiple disadvantages – actual and potential. "Poverty can mean poor health, inadequate education, low income, precarious housing, difficult or insecure work, political disempowerment, food insecurity, and the scorn of the better off. The components of poverty change across people, time, and context, but multiple domains are involved." (Alkire 2011) The Oxford Poverty & Human Development Initiative (OPHI) and the United Nations Development Programme (UNDP) has developed the Multidimensional Poverty Index (MPI) in 2010. It replaced the previous Human Poverty Index. The index identifies deprivations across the same three dimensions, i.e., health, education and standard of living.

Poverty is measured by unidimensional framework in India. The official estimates of poverty in India is continued to be derived from consumption expenditure data (Mohanty, 2011). The methodology of poverty estimation is based on the recommendations made by expert groups constituted by the Planning Commission from time to time. The methodology as devised by Y K Alagh, in 1979 has been improvised by the Expert Group (Lakdawala) in 1993, the Expert Group (Tendulkar) in 2009 and then by the Expert Group (Rangarajan) in 2014. These all expert groups prefer consumption expenditure rather than income. As per the Tendulkar Committee estimates, 21.9 percent of the Indian population live below the poverty line in 2011-12, while it is 29.5 percent according to the Rangarajan Committee estimates due to difference in methodology (Planning Commission, 2014). Due to inadequacy of reliable poverty measures there is a need of multidimensional poverty estimation in India. According to United Nations report, India's MPI value reduced from 0.283 to 0.123 during the period. The incidence of multidimensional poverty in India has declined from 640 million people to 369 million people during the period between 2005-06 and 2015-16 (UNDP & OPHI, 2019). So, India has recorded the fastest reductions in the MPI index values during the period.

2. Method

The focus of this study is on less developed Empowered Action Group (EAG) States of India. There are 28 states and 8 union territories in India having world's second largest population. Some states of India reduce the achievement as they are more lagged behind the other states on every demographic-economic indicator and their poor performance affects the GDP growth rate of India (Som & Mishra, 2014). In the mid-80s, an analyst Ashish Bose called these states i.e., Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh by an acronym BIMARU. Later, Odisha was included in this list. This acronym was used to describe the bad state of economy in backward states (Som & Mishra, 2014). Later, on account of the unacceptably high fertility and mortality indicators, the states, i.e., Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttarakhand, Uttar Pradesh are designated as 'High Focus States' by the Government of India. The Ministry of Health and Family Welfare, India

established Empowered Action Group (EAG) in 2001 to have special focus by monitoring and facilitating the attainment of national health goals on some of these states which are demographically lagging behind (Kumar & Sahu, 2019). EAG states is a group of eight states that receive special development attention from the Government of India.

In this paper, I have analysed the multidimensional poverty for EAG states and compared it to Non-EAG states. Further, the study also identifies the factors that might have impacted multidimensional poverty in the country. It covers the period from 2005-06 to 2015-16. The present research work is entirely based on secondary source of data which is mainly derived from The Global Multidimensional Poverty Index, 2019, Planning Commission, Census and RBI website.

3. Results
3.1 Status of Multidimensional Poverty in EAG and Non-EAG States
In the global MPI, a person is identified as MPI poor if they are deprived in at least one third of the weighted MPI indicators. The MPI is calculated by multiplying the incidence of poverty (H) and the average intensity of poverty (A). H is the proportion of the population that is multidimensionally poor, while A is the average proportion of dimensions in which poor people are deprived (OPHI, 2018). Table 1 represents the changes in multidimensional poverty in terms of MPI value and the last two columns display the annualized absolute[1] and annualized relative[2] changes in MPI values. The MPI index of EAG states is 0.168 in 2015-16 and it is significantly higher than Non-EAG states and the national average. In 2005-06, MPI value was the highest in Bihar and the lowest in Uttarakhand among the EAG states. These two states also hold their respective positions in 2015-16 MPI index.

It clearly depicts that the absolute reduction of poverty is substantially higher in EAG states than Non-EAG states while in relative terms, Non-EAG states have decreased poverty faster by more than 6 percent per year. MPI value of Non-EAG states has reduced fast at the rate of 6.67 percent per annum as compared to national average and EAG states. The reduction of poverty in EAG states may have been relatively lower due to the population pressure as 46 percent population of India live in EAG states (Mishra et al., 2015). The MPI value for EAG states has decreased at the rate of 1.83 per annum from 0.351 in 2005-06 to 0.168 in 2015-16. The pace of progress varies considerably across EAG states. Jharkhand has the largest absolute reduction in MPI poverty at 2.21 per annum. Chattisgarh and Bihar are also proved to be strong performers, with reductions above 2 per year. In terms of relative change, it is highest for Uttarakhand (6.04 percent) and lowest for Bihar (4.48 percent).

Table 1: Multidimensional Poverty Index in EAG and Non-EAG States

Country / State	MPI Value (2005-06)	MPI Value (2015-16)	Annualized Change	
			Absolute	**Relative**
India	**0.283**	**0.121**	**- 01.62**	**5.72**
Non-EAG States	**0.198**	**0.066**	**- 01.32**	**6.67**
EAG States	**0.351**	**0.168**	**- 01.83**	**5.21**
Bihar	0.449	0.248	- 02.01	4.48
Chattisgarh	0.355	0.153	- 02.03	5.71
Jharkhand	0.429	0.208	- 02.21	5.15
Madhya Pradesh	0.366	0.182	- 01.84	5.03
Odisha	0.336	0.156	- 01.80	5.37
Rajasthan	0.332	0.145	- 01.87	5.64
Uttar Pradesh	0.361	0.183	- 01.79	4.95
Uttarakhand	0.182	0.072	- 01.10	6.04

Source: Computed from the data provided by Global Multidimensional Poverty Index, 2019.

Multidimensional poverty incidence is larger than national measure in India and in EAG states while the estimation about poverty for Non-EAG states is similar by both sources (Figure 1). The reason may be high socio-economic development of Non-EAG states. It shows MPI trends may diverse from nation measure based on consumption expenditure. It reveals the need of right policy measures which can reduce all forms of poverty. As

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[1] The annualized absolute rate of change is the difference in MPI value between two periods divided by the difference in the two time periods.

[2] The annualized relative rate of change is the compound rate of reduction in MPI value per year between the initial and the final periods.

per the government, 22 percent of the country's population lives below the poverty line while according to Global Multidimensional Poverty Index, 2019, about 28 percent people of India are MPI poor. More than twice population of EAG states is MPI poor as compared to 16 percent of Non-EAG states.

Figure 1: Headcount Ratios by Poverty Measures (in Percent)
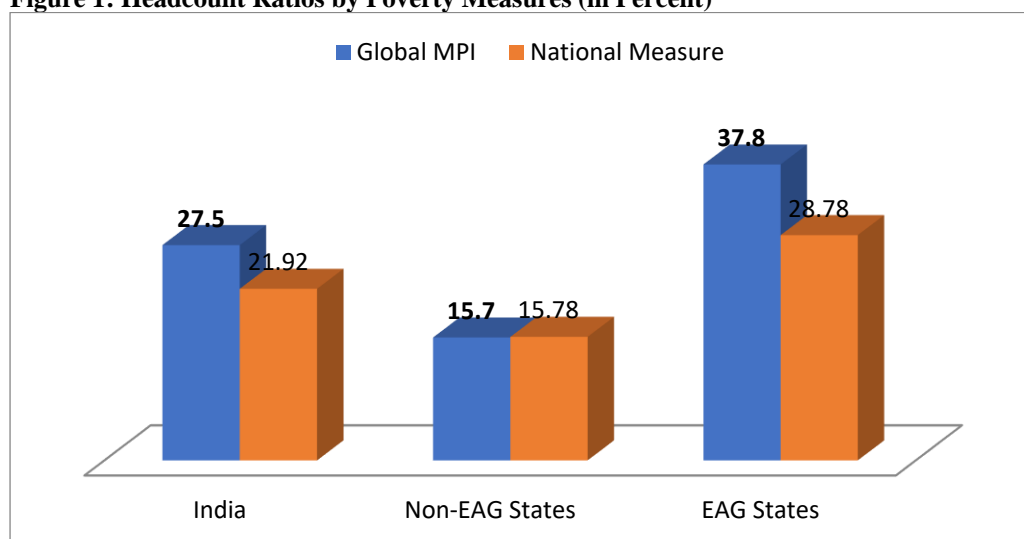
Source: Computed from Global Multidimensional Poverty Index, 2019 & Planning Commission, 2014.

3.2. Changes in Multidimensional Poverty over Time: Incidence and Intensity

When a country reduces incidence of poverty (H) or reduces intensity of poverty (A) among poor people or reduces both in some proportion, a reduction in country's MPI occurs. A reduction in headcount ratio shows a great gain, but persons leaving poverty may still experience some deprivations. So, it is important to reduce both incidence and intensity. Generally, absolute reduction of incidence is greater than that of intensity due to some reasons. First, the natural tendency of intensity might be to rise if incidence decreases of those people who are barely poor and their deprivation score is lower than average intensity among poor. Second, every reduction in intensity means an actual deprivation was reduced (Alkire et al., 2017). Table 2 depicts the same result as reduction of annualized absolute change in incidence (H) in India; Non-EAG and EAG states are more than intensity (A).

The difference in proportion of MPI poor is clearly evident between EAG and Non-EAG states. The proportion of MPI poor in Non-EAG states (15.7 percent) is less than half that of EAG states (37.8 percent). However, EAG states have reduced the proportion of the MPI poor at the rate of 2.78 per annum by 27.9 percentage points from 65.7 percent in 2005-06 to 37.8 percent in 2015-16 which is well above to national average and Non-EAG states. There is also considerable variation in the share of MPI poor and the rate of reduction among EAG states. More than half population of Bihar is MPI poor while it is only 17 percent for Uttarakhand. EAG states have significant changes in the headcount ratio during the period. Chattisgarh declined the proportion of MPI poor at a faster rate as compared to other EAG states, a yearly decrease of 3.32 percentage points. The other top performing states are Rajasthan, Jharkhand, Odisha and Uttar Pradesh registered annualized reductions between 2.8 and 3.02 percentage points.

A reduction in intensity of poverty is more important as it provides an incentive for policymakers to reduce deprivations among the poor. Development of all is need of the hour. There is a positive sign for poverty reduction in EAG states that they have strongly reduced the intensity of multidimensional poverty. The reduction is higher, both in absolute and relative terms, as compared to national average and Non-EAG states. It reflects EAG state's progress towards moving people out of poverty. It is clearly evident that there is not as much difference in intensity of poverty between Non-EAG states and EAG states as in Headcount ratio. Among EAG states, Jharkhand has reduced the highest intensity of multidimensional poverty both in absolute and relative terms. It has reduced from 57.3 percent to 44.7 percent in a ten year period (2006-16), a yearly decrease of 1.26 percentage points. The highest rate of reduction in MPI value of Jharkhand among Indian states is due to mainly a significant decline in intensity of poverty. The other top performing state Bihar registered annualized reduction of 1.08 points in intensity of poverty. The lowest reduction in intensity is found in Uttarakhand.

Table 2: Comparison between Changes in Annualized Incidence & Intensity of Multidimensional Poverty Index

India / State	Headcount Ratio (2005-06)	Headcount Ratio (2015-16)	Annualized Change		Intensity of Poverty (2005-06)	Intensity of Poverty (2015-16)	Annualized Change	
			Absolute	Relative			Absolute	Relative
India	**53.7**	**27.5**	**-2.62**	**4.88**	**52.7**	**43.9**	**-0. 88**	**1.67**
Non-EAG States	**41.1**	**15.7**	**-2.54**	**6.18**	**47.1**	**41.2**	**- 0.59**	**1.25**
EAG States	**65.7**	**37.8**	**-2.78**	**4.23**	**53**	**44.1**	**- 0.89**	**1.68**
Bihar	77.4	52.5	-2.49	3.22	58.0	47.2	- 1.08	1.86
Chattisgarh	70.0	36.8	-3.32	4.74	50.8	41.5	- 0.93	1.84
Jharkhand	74.9	46.5	-2.83	3.78	57.3	44.7	- 1.26	2.20
Madhya Pradesh	68.7	41.1	-2.76	4.02	53.2	44.3	- 0.90	1.69
Odisha	64.2	35.9	-2.83	4.41	52.3	43.4	- 0.90	1.72
Rajasthan	62.2	32.0	-3.02	4.86	53.4	45.3	- 0.81	1.52
Uttar Pradesh	68.8	40.8	-2.80	4.07	52.5	44.7	- 0.77	1.47
Uttarakhand	39.3	17.3	-2.21	5.61	46.3	41.8	-0. 45	0.98

Source: Computed from the data provided by Global Multidimensional Poverty Index, 2019.

3.3 Empirical Analysis

EAG states are also economically backward states. NSDP is one of the main factors determining the economic status of a state, but as a real and welfare measure per capita NSDP is more appropriate indicator to compare all the states' economic status whether they are big or small in terms of area or population. So, per capita NSDP can be considered as a key explanatory variable. We expect negative relationship between per capita NSDP and poverty. Social sector expenditure is very important to reduce the headcount ratio and intensity of poverty especially for a developing country like India where the proportion of poor households utilizing government services is higher as compared to the richer households. So, social sector expenditure as a percentage of GSDP is taken as an independent variable. Population growth also influences poverty. Poverty can be seen more in those states where population growth is higher than other states. Rapid population growth is the greatest obstacle to economic growth. So, decadal growth rate of population is also used as an explanatory variable in regression models.

In view of the above, we have constructed a regression model in order to verify the relative influence of per capita NSDP, social sector spending and population growth rate on MPI in the Indian states. However, MPI value of a state is always between 0 and 1. The linear functional form is not appropriate for the MPI, as the predicted value of the dependent variable from a linear regression model would not necessarily be confined between 0 and 1 (Goswami & Bezbaruah, 2011). As MPI is calculated by multiplying the incidence of poverty and the average intensity of poverty, we have regressed the headcount ratio and intensity of poverty for Indian states in 2015-16 on the basis of the per capita NSDP of 2015-16, social sector expenditure as a percentage of GSDP incurred during the year 2015-16 and the decadal growth rate of population (2001-11).

The result of the regression analysis stated in Table 5 shows that per capita NSDP has a highly significant and negative coefficient while the coefficients of social sector expenditure and population growth rate are statistically insignificant in Model 1. This implies that there is a probability of lower headcount ratio for the state having higher per capita NSDP. The result supports various studies that economic development affects the incidence of poverty. According to Model 2, intensity of poverty depends on per capita NSDP and population growth rate. Negative coefficient of per capita NSDP denotes that high per capita NSDP reduces the intensity of poverty. The effect of population growth rate on intensity of poverty is strong and positive. This indicates that the states having higher population growth rate are more likely to suffer from intensity of poverty. Every one percent rise in population growth rate would increase the intensity of poverty by 0.17 percent for all states, holding the other independent variables constant. Social sector expenditure is not significant for both models. However, the f statistics are significant at a 1 percent level of significance for both. This implies that per capita NSDP, population growth rate and social sector expenditure are jointly significant.

These results indicate that public expenditure on the social sectors has not played its due role in reducing multidimensional poverty in the country. The following could be the reasons as to why the influence of social sector expenditures on multidimensional poverty in India has been insignificant. Firstly, the size of the social expenditure may be insufficient. It is proved that in terms of GDP, social sector expenditure of India is lower than other G20 countries. In India, it is about 8 percent in contrast to about 20 percent in developed economies (Mate, et al., 2018). Secondly, the expenditures that have been made may not have been quite effective in improving the healthcare and educational attainments of the masses in all the states as development of social sector depends on expenditures and effective implementation. In other words, the delivery of the social services may not have been satisfactory.

Table 3: Estimated Regression Equations for State-level Determinants of Headcount Ratio & Intensity of Poverty

Determining Factors	Model (1) Headcount Ratio	Model (2) Intensity of Poverty
Constant	33.949 (3.68)***	40.436 (22.2)***
Per Capita NSDP	-0.00014 (-4.58)***	-0.000016 (-2.68)**
SSE / GSDP	-0.361 (-0.69)	0.041 (0.40)
Decadal Growth Rate of Population	0.468 (1.58)	0.176 (3.02)***
R-squared	0.5823	0.5561
Adjusted R-squared	0.5321	0.5028
F-Statistics	11.62***	10.44***

Note: The values in the parenthesis are t-values. *** indicates 1 percent and ** indicates 5 percent level of significance.

Source of variable SSE/GDP (2015-16 data) is State Finances: A Study of Budgets, Population growth rate (2011 data) is Census and Per Capita NSDP (2015-16 data) is RBI website and Global Multidimensional Poverty Index, 2019.

4. Discussion

The study clearly reveals that the multidimensionally poor are mostly concentrated in low income states, i.e., EAG states. However, EAG states have reduced the proportion of the MPI poor at the rate of 2.78 per annum from 65.7 percent in 2005-06 to 37.8 percent in 2015-16. A positive sign for poverty reduction also can be found in EAG states that they have strongly reduced the intensity of multidimensional poverty. The reduction is higher, both in absolute and relative terms, as compared to national average and Non-EAG states. It reflects EAG states' progress towards moving people out of poverty.

Poverty can be reduced by empowering the poor with human capital and creating productive employment opportunities in these states. So, significant efforts are required to improve educational standards including skill development and health standards of the people which can indirectly increase the per capita income of the state. The regression analysis also identifies per capita NSDP as an important factor affecting the incidence and intensity of poverty.

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Implications and Challenges of Incorporating Emotional Intelligence in Personnel Hiring

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ABSTRACT

Purpose: This review aims at emphasizing why emotional intelligence should be used as the consideration in hiring strategies of organization. This review paper aims at providing a theoretical platform for relevance of emotional intelligence in personnel hiring in organization. Emotional competencies must be considered as an important component of an ideal profile of important positions of the organization.

Methodology: An analytical review is conducted with the objective of answering questions of H.R manager regarding emotional intelligence with reference to personnel hiring and benefit of having emotionally intelligent employees.

Results: Emotional intelligence is relevant in hiring process. Hiring manager must be certain about the fact that emotional intelligence is required skill for job then it must be considered at the time of hiring decisions. A blend of the right kind of emotional intelligence questionnaire and verbal questioning should be used as a candidate may try to pretend to be highly emotionally intelligent.

Conclusion: Emotional intelligence has established its relevance in an organization by demonstrating that how it affects an employee's performance, productivity, and organizational goals. It must be included in hiring policies of organizations for jobs that require technical skills and emotional skills as well. Future research should be conducted with regards to the development of emotional intelligence scale focusing on an emotional requirement of specific job.

Keywords*:* Emotional intelligence, hiring managers, job performance, personnel hiring and selection.

1. INTRODUCTION

Concept of emotions at workplace has gained enormous amount of interest at recent times. Studies shows that employees who are emotionally intelligent and can balance their work life can provide their organization with competitive advantage in the market. Nowadays emotional intelligence is associated with every aspect of workplace performance. Emotional intelligence has created an immense importance at the workplace, so this topic has initiated considerable research in workplace academia. With the help of self-management tools and management training program, an emotionally intelligent organization can be built (Desti et al.,2015). Emotional intelligence is an important driver to accomplish corporate performance even more than monetary rewards (Liberty &Kida, 2017). In this competitive work environment, emotional intelligence has become an occupational perquisite for employees (Sinha, 2016). The selection procedure of organizations must be restructured so as to assure that adequate weightage is given to emotional intelligence through administering an emotional intelligence test while hiring personal as it is established that there is a direct relationship between emotional intelligence and job performance (Davar & Singh, 2014). IQ is an important skill to be looked in any candidate, but so is their ability to manage and handle the relationship around them (Goleman, 1998). Employees with higher emotional intelligence not only have increased productivity but they also create healthy work environment where they as well as others can deal with their personal and corporate world adversity. The nature of relationship found between emotional intelligence and adversity quotient was positive (Singh & Sharma, 2018). While hiring senior executive, if they have a moderate level of IQ but have a combination of high emotional intelligence and relevant work experience, they must be selected as there are more chances of them to succeed in their professional space. Emotional intelligence competencies are key factors that must be considered while hiring senior executive (Cherniss & Goleman, 2001). Behavioral event interviewing is a technique used to gauge emotional intelligent of candidate, which will provide a better understanding about their ability to handle emotions within oneself, emotions of others and manage stress full situations at the time of recruitment (Barcelos, 2019). Roadblocks in the course of performance of work and job duties results from the inability of individuals to develop his /her emotional intelligence (Kapur, 2018). Higher emotional intelligence results in higher job performance, higher job

satisfaction and increased organization commitment (Praveen & Narashiman, 2014). It has been agreed that emotional intelligence influence success of employees and doing everything well but having low EQ will stagnate the career (Saville, 2015). Studies have depicted that self-awareness, empathy, influence, communication, motivation, self-expression, interpersonal relationship, decision making, self-regulation, stress, tolerance, social awareness, self-regard, assertiveness, flexibility, problem solving, optimism, happiness, social skill and service orientation are various factors that contribute to emotional intelligence in enhancing performance of employees in service sector (Baskar, 2015).

Irrespective of the sector, emotionally intelligent organizations result in customer satisfaction, higher levels of performance output, employee retention, job satisfaction, profitability and managerial effectiveness (Sinha, 2016). Emotionally intelligent employees tend to be more satisfied with their work (Miao et al., 2017). Role of emotional intelligence and its various dimensions like self-assessment, self-monitoring, integrity, social-relationship, actuation, inspiration and empathy on the performance of employees working in service sector has been highlighted. All these factors of emotional intelligence show its relevance in in increasing work performance of employees of service sector (Bapna et al., 2011). A significant relationship was found between emotional intelligence and decision-making skill (Suganthi & Muralidaran, 2015).

Several questions in relation to emotional intelligence were framed that the human resource manager is keen in investigating while hiring employees in their organization.

1. What is relevance of emotional intelligence in employee's performance?
2. How can emotional intelligence contribute to the selection of employees.
3. Identifying position in an organization that requires an employee with higher emotional quotient/ intelligence?
4. What are issues associated with implementing emotional intelligence in personal hiring strategies of an organization?

2. METHODS

Search Strategy

Pertinent literature in the form of book, article, website content and research paper etc., found between the outset of the respective database and March 2023 was searched on an electronic database like google scholar, research gate, semantic scholar and ProQuest to answer the aforesaid questions of human resource managers. The search strategy was based on using keywords like: emotional intelligence; emotional quotient; hiring managers; hiring policies; employee performance and selection to find relevant literature to complete this review study. Searched literature was then reviewed with the aim to provide a detailed and critical blend of data.

3. DISCUSSION

What is relevance of emotional intelligence in employee's performance?

Emotional intelligence accounts for around 67% of competencies that are used to differentiate performance (Goleman, 1998). Jorfi and Jorfi, 2010 reported that there is significantly positive correlation between component of emotional intelligence (like inter personal, intra personal, adaptability, stress management and general mood) and performance of employee at work. Vocational teachers with higher emotional intelligence will provide effective teaching to their students as they can they can identify emotions, control negative emotions, remain motivated, empathize with others and have social skills (Ismail et al., 2020). Employees with higher emotional intelligence will also have higher emotional competencies and they will work efficiently, provide quality work, have a better planning ability and are more punctual (Khokhar & Kush, 2009). It was found that job satisfaction of employees increases with increase in emotional intelligence of employees (Chaturvedi et al., 2017). There is a direct and positive effect of emotional intelligence on job performance of employees from public sector, private sector, cooperative sector, banking and insurance sector (Davar& Singh, 2014). There is a significant impact of emotional intelligence on an employee's performance, which in turn leads to feeling of contentment, increases their job satisfaction and productivity. Emotional intelligence can be used to improve job performance only when an employee knows how to effectively utilize his/her emotions to achieve their individual and organizational goals (Baloch et al.,). Emotional intelligence of employees affects their overall job performance, mostly competency factor of emotional intelligence had greater effect on job performance of employees (Mishra & Mohapatra, 2010). It is suggested that organizations must employee cost effective emotional intelligence training and intervention programs as improved higher level of emotional intelligence among employees leads to higher employee performance (Munir & Azam, 2017). Supervisors and managers who have low level of emotional intelligence would not be able to deliver the required level of performance on the job (Kulkarni et al., 2009). Sahu and Das, 2016 have highlighted the importance of service provider's or employee's emotional intelligence while

retaining customers and converting prospective customers into actual customer by being sensitive to gesture and emotions of customers. Executives with higher emotional intelligence will be more likely able to attain business outcome, and are regarded as effective leaders by their subordinates (Rosete &Ciarrochi, 2005). There is a huge connection between emotional intelligence and job performance, emotional intelligence produces 31.9% difference in performance of male employees and 26.7% difference in performance of female employees (Dhani &Sharma, 2017).

How can Emotional intelligence contribute to the selection of employees?

Candidates' emotional intelligence has an impact on their behavior in selection. There is a positive effect of a) ability to understand emotions on interview and role play performance, b) ability to regulate emotions on group exercise performance and a negative effect of ability to understand emotions on group exercise performance (Herpertz et al., 2016). Surana, 2017 in his online article stated that companies prefer candidate which are emotionally intelligent. Emotional intelligence helps in reducing stress, performing well in critical situations, improving non-verbal communication, properly handing difficult situation and positively resolving conflicts. It was stated that hiring managers in non-profit organization seek out emotional intelligence qualities such as social awareness, empathy, service orientation, relationship management and adaptability in potential employees during interview process. Such organization focus on hiring employees who are proficient in managing relationships. Emotional intelligence was an employment priority among hiring managers (Shubert, 2014). While hiring manager's emotion intelligence must be included as check features as it helps in making a successful decision (Alzoubi & Aziz, 2021). In the area of hiring, recruitment and selection process of an organization, if emotional intelligence of potential employees is taken into consideration, then staff who can manage high stress and pressure situation in a better way are selected (Prati et al., 2003). Several studies show that using emotional intelligence in hiring and selection process will provide economic benefit to an organization. U.S Airforce saved 3 million annually when they used BarOn Emotional Quotient Inventory Test in order to select recruiters. In a muti national firm, partner who is more emotionally competent delivered 1.2 million more profit than their other partner (Stys & Brown, 2004). Organizations achieve 90 percentile of success rate when they use emotional intelligence in their recruitment decision. Not technical expertise or IQ but emotional intelligence is the factor that distinguishes the top performer from average performers in any field, sector or industry (Watkin, 2000). Several activities should be included in the interview process that measures an emotional intelligence level of the candidate so that due emphasis is given on hiring emotionally intelligent employees (Naseem, 2018). Using emotional intelligence at the time of selection will help in identifying the right fit for the organizational culture as it identifies soft skills and emotions apart from knowledge, skills and abilities of prospective employees (Chrusciel, 2006).Human resource managers must use the contextual, behavioral and cognitive aspect of emotions at work at the time of selection of employees as it helps in developing emotional intelligence and emotion work abilities in employees (Openart, 2005). If emotional intelligence is not considered at the time of hiring organization may lose a candidate with the best potential for performance (Cherniss& Goleman, 2001).

Identifying position in an organization that requires employee with higher emotional quotient/ intelligence?

In some job's emotional intelligence is not that important as they require employees to possess specific technical skills and higher IQ like technicians, mathematicians and welders, etc., but work like that of teachers, managers, psychologist, customer service representative, analyst, event planner, etc., are few jobs that require people with high emotional intelligence as there is a lot of interpersonal interaction in involved in these jobs. While hiring home care clinicians, candidates with higher emotional intelligence should be selected as emotional intelligence is a necessary skill set (Wodwaski & Courtney, 2020). There is a need to conduct systematic emotional task analysis, so that a different factor of emotional intelligence can be matched with demands of different kind of jobs. Specific emotional skills, emotional challenges and emotional requirement of a particular job need to be recognized and an emotional intelligence test should be developed in order to identify such challenges faced by the candidates (Zeidner et al., 2004). When hiring people with reference to their emotional intelligence, it should be given due consideration as any analytical skills.

What are issues associated with implementing emotional intelligence in personal hiring strategies of an organization?

Hiring emotionally intelligent employees does not mean that organization will ignore their moral imperative to reduce stress and improving working condition (Miao et al.,2017). Selecting emotional intelligent employees is very crucial but there are few industries where emotional intelligent is not an essential part of a job requirement, if in such industries candidates with higher emotional intelligence are selected then all the resources

and time of organization will go in vain (Wong & Law, 2002). Some organization have a lower turnover rate so they are not aware regarding evolving hiring practices and few have a paucity of time and resources to pursue new hiring practices such as emotional intelligence (Shubert, 2014). The predictive validity of some EI questionnaire may imbricate with standard personality factors (Zeidner et al., 2004). Having hiring managers with higher EQ does not ensure that they will select/hire good performance so undue consideration should not be given to emotional intelligence at the time of hiring process (Baptiste, 2014). Self-report emotional intelligence measure has very low functionality in the selection of personnel because its weak relationship is demonstrated with job performance and hiring decision will be affected as candidates are susceptible to response distortion (Christiansen et al., 2010). Emotional intelligence has a lower reliability of measurement when traditional selection method like interview is used.

4.   CONCLUSION

This paper identifies various factors why and factors to be considered while using emotional intelligence during hiring employees and barriers that hiring managers faces while using emotional intelligence in hiring process. According to Forbes Human Resource Council, a 2019 survey showed that 71% employers are giving priority to EQ over IQ. When ability emotional intelligence is paired with cognitive intelligence, it helps in assessing emotional and non-cognitive antecedents of job performance (Dhliwayo & Coetzee, 2020). There is no evidence that supporting that presence of emotional intelligence ensures development of professionalism in employees (Cherry et al., 2014). In order to use emotional intelligence in hiring decision, carefully formulated, a standardized, normed and validated measure of emotional intelligence for a specific occupational group should be used by organization (Zeidner et al., 2004). Emotional intelligence must be considered at the time of hiring as it improves employee's engagement, commitment, efficiency, quality of work, motivation and job satisfaction. Human resource managers should restrain from using emotional intelligence test as a criterion of selection as there is no standard test which measures emotional intelligence requires for specific jobs and candidate may pretend to have higher emotional intelligence. Using emotional intelligence in hiring process has both pross and cons it is the job hiring managers to identify the right blend of emotional intelligence into hiring policy and aligning emotional intelligence with job description.

To end this article, authors of this article would like to provide some suggestions to the hiring managers regarding use of emotional intelligence as hiring criterion. Our first suggestion is, if hiring manager is certain about that fact that emotional intelligence is required skill for the job then it must be considered at the time of hiring decision as there are few jobs that are purely technical in nature. Second suggestion is that a carefully formulated, standardized, normed and validated measure of emotional intelligence for specific occupational group should be used by organization in their hiring decision. Lastly, precautions should be taken to avoid the aftermath of masking of emotion by the candidate during the hiring process. Presence of emotional intelligence in employees helps them in coping with different situation in workplace. Future research should be conducted with regards to the development of emotional intelligence scale focusing on an emotional requirement of specific job. The central idea of this paper is to ensure that presence of emotional intelligence is an important trait among prospective employees. A blend of the right kind of emotional intelligence questionnaire and verbal questioning should be used as a candidate may try to pretend to be highly emotionally intelligent.

Authors contribution:
Nida Iqbal: Conception of the study, search of literature and drafting the article.
Yasir Arafat Elahi: Selection of literature, critical revision of article and supervision of the work.

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A study on Problem faced by Higher Education students in Tamil-Nadu

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ABSTRACT

Every country's economic development is largely dependent on its level of education. It lessens societal and economic inequalities. This study investigates Tamil Nadu's literacy rate as well as public and private higher education institutions. The population's overall educational attainment is shown by the literacy rate. A nation's knowledge economy is created and ushered in by education. Education services are becoming more and more important in both the public and private sectors. Education makes it easier for people to learn new information, skills, and technologies, which eventually boosts productivity in India's cities and rural areas. Institutions that are part of public and private partnerships are crucial to the provision of general and technical education, which is necessary to achieve economic development and to produce human skills and knowledge .The economic development of developing nations has been significantly influenced by education. In poorer countries, it has helped to boost GDP growth. In the world's education rankings, India comes in third. In both rural and urban parts of India, education is essential to the fight against poverty and socioeconomic injustice. It eliminates the nation's societal upheavals and economic gaps. The empowerment of individuals has also been a result of education. The economic resources of human capital inside a nation are the attention of the economist. An organization's human capital can be a valuable tool for increasing productivity and fostering the innovation needed in the information economy. The industrial and service sectors receive high-skilled labour, semi-skilled labour, and skilled labour forces formed by education services.

Keywords : Education; Students; Problems.

1.1 INTRODUCATION

The introduction states that the primary means of attaining swift technological advancement and economic growth is through education. Education becomes the   planned development in all spheres of national life. Government of India, 1961 The process of promoting learning, or the acquisition of information, abilities, values, beliefs, and habits, is known as education. Teaching, training, storytelling, dialogue, and focused study are examples of educational practices. Although teachers typically supervise learning, students are also capable of self-education. Education can occur in both formal and informal contexts, and it can encompass any event that shapes a person's thoughts, emotions, or behaviour. The term "pedagogy" refers to the teaching methodology. Some governments have recognized the right to education.

1.2 STATEMENT OF THE PROBLEM

The challenges that students encounter when enrolling in postsecondary education and the issues of the students in higher education must deal with. The primary advantages Offered by the college those who choose to pursue higher education

1.3 SCOPE OF THE STUDTY

 The scope of the study is about the problem faced by the higher education ,students in TAMIL NADU , Also, people enquire, The phrase refers to the variety of post-secondary educational options that are accessible. It consists of professional development classes, apprenticeships, two- and four-year college programs, certificates, and diplomas.

1.4 OBJECTIVE OF THE STUDY

> For the benefit of more students pursuing higher education, hostel facilities ought to   be offered.
> At the institutional level students should have a innovative opportunities to voice their opinions
> It should be possible for the students to choose from a white range of disciplines start at higher education institution by providing them with adequate options.
> In order to support students who aspire to pursue higher education, there must be mechanisms in place to address health and family issues. This will also enable them to articulate their aims for their schooling in the most effective way possible.
> Highlighting Attention should be focused on helping students pursuing higher education develop their communication abilities.

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1.5 REVIEW OF LITERATURE

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Bal, M. (2018)
This investigation planned to decide the in-school and out-of-school perusing and composing encounters of school understudies. This examination utilized phenomenology from subjective research techniques. Each of the 12 members (8 female, 4 male) were school grade 6 understudies. Different information gathering strategies were utilized: an overview and a semi-organized meeting about the utilization, a semi-organized meeting about the Turkish language subject, a semi-organized meeting about the connection between in-school and out-of-school perusing and composing encounters, a journal of the understudies' perusing list, a journal of the understudies' composing list, and the writings composed by the understudies on. Information gathering kept going four months. The information gathered from the review survey were investigated illustratively.

Kavi, R. K., Tackie, S. N., & Bugyei, K. A. (2015)
This examination concentrated on researching perusing for delight among Junior secondary school understudies. The exploration strategy embraced for the examination was the contextual analysis approach. An absolute number of 93 respondents containing 87 Students, 5 Teachers and 1 took an interest in the examination. Surveys were controlled to request data from the respondents, while a meeting plan was utilized for the Teachers , of the school. The discoveries proposed that greater part of the respondents don't peruse for delight, they just participate in perusing basically to pass their examinations and less for their self-improvement, fun, or to be all around educated.

Molotja, T. W., and Themane, M. (2018).
The significance of getting kids off to a decent begin in perusing can't be exaggerated. Effective scholastic execution at essential and auxiliary school level is mostly subject to the capacity to peruse. It is trusted that great students are the individuals who are capable in perusing. In any case, numerous students are attempting to peruse and, in this way, battle to scholastically prevail in different subjects. The issue of not having the capacity to peruse rises above contrarily on students' scholarly accomplishments. This investigation proposes a system towards rousing students in growing better perusing propensities through the dissemination of perusing sacks. The blended technique approach was embraced in directing this examination. Students' perusing procedures were first distinguished by controlling a review on perusing methodologies.

Bal M. (2018)
 This investigation planned to decide the in-school and out-of-school perusing and composing encounters of school understudies. This examination utilized phenomenology from subjective research techniques. Each of the 12 members (8 female, 4 male) were school grade 6 understudies. Different information gathering strategies were utilized: an overview and a semi-organized meeting about the utilization of a semi-organized meeting about the Turkish language subject, a semi-organized meeting about the connection between in-school and out-of-school perusing and composing encounters, a journal of the understudies ',perusing list, a journal of the understudies' . composing list, and the writings composed by the understudies on Information gathering kept going four months. The information gathered from the review survey were investigated illustratively.

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1.6 RESEARCH METHODOLOGY

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➢ The research design is descriptive in nature of .the descriptive research design it describe the aspect of the situation as they naturally occur in the E-fund transfer system.

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1.7 SAMPLE DESIGN:

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➢ The sampling technique is the technique used to select the sample size. convenient sampling technique is used for the research.

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1.8 SAMPLE SIZE:

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➢ The sample size is 138 respondents from TAMIL NADU

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1.9 LIMITATIONS   OF THE STUDY

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➢ The study is based on the primary and secondary data
➢ The data collection has been done from a limited geographical area. Hence the findings and conclusion have there limits

> ➤ Due to time constraints and geographical restriction, no probability technique has been used.

1.10 ANALYSIS OF DATA AND RESULTS

2.1 Table shows no of responses based on age

factors	No of responses	percentage
Below -18	11	8%
18-20 years	80	58%
20-22 years	37	27 %
22-24 years	6	4 %
Above 25 years	4	3 %
Total	138	100

Source : primary data

The above table shows the age of the res ponders in which in which 58 percent of 18-20 and 27 percent of 20-22 the least percent of 3 is above 25 percent.

2.2Table shows about the problems faced by the students while enrolling in higher education

Factors	Financial problem	Long distance	Inability To express idea	Preferred course	Others	Total
Male	22	14	3	3	2	44
Female	49	29	11	4	1	94
Total	71	43	14	7	3	138

Source: primary date

Ho = there is no difference between gender and about problems faced by the students while enrolling in higher education

H1 = there is a difference between gender and about problems faced by the students while enrolling in higher education

O	E	O-E	$(O-E)^2$	$\dfrac{(O-E)^2}{E}$
22	24.47	-0.47	0.22	0.009
14	13.6	0.4	0.16	0.012
3	4.43	-1.43	2.04	0.46
3	2.53	1.18	1.39	0.55
2	0.95	1.05	1.10	1.16
49	48.5	0.5	0.25	0.005
29	29.38	-0.38	0.14	0.05
11	9.5	1.5	2.25	0.24
4	4.4	-0.4	-0.16	0.003
1	2.05	-1.05	1.10	0.53
TOTAL				3

$X^2 = (O-E)^2$

$$\frac{\text{-------------}}{E} = 3$$

Degree of freedom (R-1) (C-1)

$\qquad$ (2-1) (5-1)

Degree of freedom 4 at 5% level of significance = 9.49

Chi-square	Degree of freedom	Significance level	Calculated value	Table value
Pearson chi-square	4	5%	3	9.49

Table shows the occupation and their reason to use Electronic fund transfer system

INTERPRETATION
Hence the calculated value is less than the table value. Accept the null hypothesis. H0 = there is no difference between gender and about problems faced by the students while enrolling in higher education

2.3TABLE SHOWES THAT PROBLEM FACED BY THE STUDENTS IN HIGHER EDUCATION

Factors	SOCIAL INEQALITY	EFFCTIVE STUDY	TIME MANAGEMENT	BUDGETING	COST OF EDUCATION &STUDENT DEBT	TECHNOLOGY RELATED ISSUSE	LACK OF INTERESTR	TOTAL
UG	8	7	33	16	16	7	8	96
PG	3	4	14	6	6	6	1	40
DIPLOMA	0	0	1	0	0	0	0	1
OTHERS	0	0	2	0	0	0	0	1
TOTAL	11	11	50	22	22	13	9	138

Source: primary data

1.11 HYPOTHESIS

H0 = there reason for the students faced the problems in higher education
H1 = there is no reason for the students faced the problems in higher education

A	A^2	B	B^2	C	C^2	D	D^2	E	E^2	F	F^2	G	G^2
8	64	7	49	33	1089	16	256	16	256	7	49	8	64
3	9	4	16	14	196	6	36	6	36	6	36	1	1
0	0	0	0	1	1	0	0	0	0	0	0	0	0
0	0	0	0	2	4	0	0	0	0	0	0	0	0
11	73	11	65	50	1290	22	292	22	292	13	85	9	65

N=65
T=11+11+50+22+22+13+9 = 138

$$T2 = \frac{(138)^2}{65} = \frac{19044}{65} = 293$$

SST =∑A2 +∑B2 + ∑C2+ ∑D2 +∑E2 – T 2   N

=73+65+1290+292+292+85+65-293
=2162-293
=1869

SSC= (∑A)² + (∑B)² + (∑C)² +(∑D)² +(∑E)² - T ² N1   N1   N1   N1   N1   N

$$= \frac{(11)^2 + (11)^2 + (50)^2 + (22)^2 + (22)^2 + (13)^2 + (9)^2}{9.28 \quad 9.28 \quad 9.28 \quad 9.28 \quad 9.28 \quad 9.28 \quad 9.28} \quad\text{--- } 293$$

=13.03+13.03+269.3+52.15+52.15+18.21+9 -293
=427
  SSE = SST – SSC
= 1896-427=1469

Source of variance	Sum of square	Degree of freedom	Mean of square	Variance ratio	F value
Between column	427	C-1 7-1=6	$\frac{427}{6}$ = 71.166	$\frac{71.166}{69.9523}$ R=1.01735	2.57
SSE	1469	N-C 28-7=21	$\frac{1469}{21}$= 69.9523		

Degree of freedom = (6,21)
Table value of F 7% at level for (6,21) = 2.57

1.12 INTERPRETATION

Hence the calculated value is more than table value (1.0173 >2.57).so null hypothesis has been rejected

2.4Table shows no of responders a study on problem faced by higher education students in TAMIL NADU

Factors	No of responses	percentage
The problems faced by the students while enrolling in higher education	23	17
The problems faced by the students in higher education	20	14
The college\institution are providing the guidance conselling for higher education	28	20
A opportunities are provided by the institution / college to express the ideas& shows the talent of the students	37	27
The major benefit providing by the college to students to pursue higher education	30	22
Total	138	100

Source: primary data

The above table show that 27% of responders are facing the challenge of opportunities are providing by the institution / college to express the ideas & shows the talent of the student and each 14% of responders are the problems faced by the students in higher education .

1.13 FINDINGS

➢ Only women make up the majority (68.3%).
➢ And the 63.8% of women who are having trouble
➢ The issues affecting higher education are known to both men and women.
➢ Cartage between the ages of 18 and 20 (58.3%) is currently a concern in higher education.
➢ 69.1% of PG students report having difficulties in higher education.
➢ Additionally, the issue that students have when they apply to universities 51.1% for issues related to money.
➢ The majority of colleges and institutions display the ideas and abilities of their students in higher education .
➢ Education with 91.4% of the total. Most colleges and other educational institutions offer guidance and counselling to the student.
➢ Higher education students, with 61.9% of them agreeing.
➢ But lastly, the primary role that benefits.

1.14 SUGGESTIONS

- ➢ The curriculum from being dogmatic to something dynamic.
- ➢ Transform Non-Profit Institutions into Profit-Making Private Ones
- ➢ Industry Collaboration Needs to Be Mandatory for Placement
- ➢ Utilize Alumni's Notoriety and Influence
- ➢ To establish a single supreme authority to oversee issues pertaining to higher education. It shouldn't be reliant on government funding.
- ➢ An additional source of funding for the regulators could come from a tiny portion of the regulated institution's earnings.
- ➢ All universities must be research and teaching institutions A central skill development Council must be established.
- ➢ Foreign universities are permitted to establish campuses in Tamil Nadu.

1.15. CONCLUSION

In summary, education teaches you a variety of abilities and improves you as a person. It improves your intelligence and decision-making capacity. It helps a person flourish as an individual. A nation's ability to prosper economically is also enhanced by education .The foundation of any society is education. An essential component of human society is education. Many societal problems, including poor living conditions, conflict, and ill health, are the result of a lack of education. People who are educated are better able to solve difficulties and overcome all .Thus, education improves mutual understanding and helps people get to know one another better. In summary, education has been crucial to everyone in society today since it gives us the knowledge we need for the future and opens the way for it.

Contextual marketing and its effects on Bangalore city's online customer purchasing behavior for organic food products

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Abstract
The dawn of miscellaneous technological innovations, such as personal digital assistants (PDAs) and collaborative television, has provided an array of prospects for effectively engaging with customers in real-time within virtual environments. This offers a multitude of opportunities for businesses. Customers have the competence to establish a connection to the Internet and gain access to the World Wide Web through their wireless devices, irrespective of their geographical position or preferred duration of usage. Contextual marketing is a strategic methodology that entails the provision of tailored and pertinent information to customers precisely when they need it, taking into account their present circumstances. The primary objective of the present study is to investigate the impact of contextual marketing in terms of contextual accuracy and contextual intention on the online purchasing behavior of consumers residing in Bangalore city, with a specific emphasis on organic food products. The study is addressed using a descriptive research design. The study employs an expediency sampling method to select a sample of 200 customers who purchase organic staples. To analyze the effect of contextual marketing on online customer purchasing behavior, the AMOS-SEM model is used in the study. The study's findings hold considerable importance for marketers of organic food products in their efforts to effectively target and engage with broad demographic segments. The organic food products market is experiencing significant growth, with increasing consumer interest in purchasing organic food products. The contextual marketing industry has the potential to enhance this industry by effectively propagating accurate information at the appropriate time and location.
Keywords: Contextual marketing, online consumer buying behaviour, Organic food products, Contextual accuracy, and contextual intention

1. INTRODUCTION

The organic food products market in India is currently experiencing robust growth. One of the primary drivers of the demand for organic food products in the Indian market is the increasing levels of health consciousness within the country (Basha, M. B., et al., 2015). There has been an increasing inclination among Indian consumers to prioritize the nutritional composition and overall quality of their food, resulting in a growing demand for organic food products. Furthermore, propelled by various factors including robust economic expansion, urbanization, and escalating income levels, there has been a substantial surge in consumer spending on health and wellness products (Demirtas, 2018).

According to a FiBL survey conducted in 2021, India expanded at the fastest rate in the world (in absolute terms) because of the addition of almost 3.6 lakh hectares of organic land. It also predicts that the organic business would develop at a quicker rate in India, aided by a resurgence in demand for organic products following the outbreak of the pandemic. While the epidemic has caused supply chains all over the world to be disrupted and farmers all over the world to be upset, it has also encouraged people to choose more organic food products choices. According to the research, the Indian organic food products industry has seen a boom, with a market size of $820 million in 2020, up from just over $200 million in 2018. The market is expected to increase at a compound annual growth rate (CAGR) of 24 percent between 2021 and 2026.

The retail sector in India has undergone a transformation from conventional brick-and-mortar retailing to the emergence of online shopping platforms Andreatta, S. L. (2000). The increasing dynamism and complexity of consumer behavior necessitates a comprehensive understanding of consumer purchase patterns in the online context Deacon, J. H., & Harris, J. (2011). The shopping habits of consumers are subject to continuous evolution due to the increasing prevalence of network technology. In contemporary times, online shopping has emerged as the predominant mode of consumer transactions, particularly in light of the Coronavirus Disease 2019 (COVID-19) pandemic Rosário, A. T., Lopes, P. R., and Rosário, F. S. (2023). The e-commerce sector has had a substantial impact on users' online impulse buying behavior (IBB) and has emerged as a crucial pillar of the market economy, as evidenced by numerous research studies Kenny, D., & Marshall, J. F. (2000).

A recent research study conducted by the Institute of Advanced Studies (IAS) titled "The Power of Context in India" involved the surveying of a sample size exceeding 500 Indian consumers. Indian consumers exhibit a high level of receptiveness towards advertisements that are contextually relevant. The report indicates that a significant majority of consumers in India, specifically 90%, consider contextual relevance to be crucial and acknowledge its influence on their perception of brands and advertisements in their environment. Contextual relevance is highly valued in various sectors within India Vos, L., & Armstrong, K. (2019). Consumers consistently exhibited a preference for contextual relevance when presented with articles from various verticals. Consistently, consumers associated the advertisements they favoured with articles classified within the corresponding content category Smith, T., et al. (2015). Indian consumers tend to exhibit a preference for and better recall of advertisements that

are contextually relevant Sweezey, M. (2020). The influence of contextually relevant advertisements extends beyond consumer preference. Not only were relevant advertisements found to be more memorable, but they also had a higher likelihood of cultivating a favourable consumer opinion towards the brand.

In the year 2022, contextual targeting emerges as a significant prospect for brands, offering them a valuable opportunity. It is imperative for brands to comprehend the impact of context on consumers' perception of advertisements in order to effectively engage consumers and sustain their interest in purchasing essential products through online platforms. It is imperative for marketers to differentiate themselves in highly saturated markets and generate desired outcomes through advertising efforts."

Therefore, it is imperative to investigate the impact of contextual marketing on the online impulsive purchasing behaviour of organic food products in India. By incorporating contextual marketing, the grocery e-commerce sector can examine customer behaviour and determine the most optimal marketing strategy and compelling advertising techniques to achieve a higher level of efficiency in terms of return on marketing investment.

The first section of the study gives an overview and background of the study. The second section focusses on the review of literature. The research methods are specified in the third section and the fourth section presents the results of the study. The last section of this research concludes with limitations and scope for further research.

2.   REVIEW OF LITERATURE:

The present study utilized a systematic literature review methodology to examine prior academic publications that were relevant to the research questions being investigated. The articles were obtained from reputable academic journals and underwent rigorous examination to assess the level of quality demonstrated by each study. The databases mentioned include Elsevier, Routledge, and CRC Press Taylor and Francis. The databases utilized in this study include the Emerald Group Publishing database, the Springer Nature database, and the Sage database. A number of additional scholarly articles were obtained from reputable academic databases including Wiley, Academia, JSTOR, and Guildford Press.

Literature review on contextual marketing

Contextual Revolution defines contextual marketing as the strategic utilization of contextual factors to establish a resonance between consumers and products, with the aim of attracting consumers and fostering a sense of affinity towards the products Kenny, D., and Marshall, J. F. (2000). The mobile application serves as a communication platform facilitating interactions between businesses and consumers. According to Professor Liu Xiang, the concept of context continues to serve as a marketing tool and an idea deeply ingrained in humanity's historical development Zheng, X., Lin, F., and Cai, X. (2021, January). Moreover, it represents an endeavour to gather and analyze user data within the era of mobile internet. In her book, Maribel Lopez asserts that while many individuals perceive context as solely encompassing location information within the realm of mobile Internet, it actually encompasses a broader range of factors Lopez, M. (2014). These factors include the type of devices being used, the behavioural status of individuals, prevailing weather and environmental conditions, social roles and relations, temporal aspects, movement status, and the current processing status Deacon, J. H., and Harris, J. (2011). The primary objective of contextual marketing is to deliver relevant and valuable information to the appropriate individuals on their devices, precisely when it is most advantageous Luo, X., and Seyedian, M. (2003). The conventional marketing approach involves the initial selection of products followed by the subsequent identification of target consumers, whereas contextual marketing entails the customization of products to cater to specific consumer segments Lee, T., and Jun, J. (2007). The genuine contextual experience arises from the diversity among users. The connection of diverse individuals across various groups within a given context generates a distinct value, leading to the development of contextual experiences and empowering users to engage in active consumption Luo, X. (2003). The utilization of contextual marketing techniques in mobile applications has the potential to provide individuals with an exceptional user experience, as it possesses a deep understanding of their specific requirements Barbosa, B., et al. (2023). The provided information and services exhibit intelligent and personalized characteristics, adapting appropriately to various occasions and timeframes Smith, T., et al. (2015). This adaptability enables individuals to effectively manage their needs, encompassing physical information and emotional states. For instance, individuals are able to seamlessly transfer the audio output from their mobile phone application to the car's audio system upon entering the vehicle Von der Au, S., etal.(2023). Similarly, the scheduling application will automatically synchronize with the car's navigation system to set the desired destination López-Pastor, et al. (2021). Furthermore, upon entering a conference room, the scheduling application will promptly distribute the agenda's contents to all attendees. This integration of technology is particularly relevant within enterprise settings Sweezey, M. (2020). The application will facilitate the integration of employees' work progress and generate reports for managers Dou, X., Fan, A., and Cai, L. (2021). The catering application will suggest the most appropriate restaurant to individuals in the dining area by considering factors such as location data, individuals' previous dining preferences, and the current status of restaurant queues. In summary, mobile applications encompass various facets of individuals' lives Kotler, P., et al (2021).

- *Contextual marketing refers to the strategic implementation of marketing techniques in a particular context, with a focus on personalization and customization.*

- *The objective of contextual marketing is to enhance the customer experience by delivering tailored marketing messages based on real-time behavioral data.*
- *Contextual marketing has become prevalent due to the widespread tracking of customers' online activities.*
- *The adoption of a contextual marketing approach, which involves offering personalized and timely information to customers when they require it, can confer a competitive edge in the realm of e-commerce.*
- *The primary aim of contextual marketing is to present users with advertisements that align with their pre-existing interests in products and services.*

Koga, H. (2013) The primary objective of marketing is not merely to identify the customer, but rather to understand the underlying motivations and needs driving their behavior. The emphasis lies on understanding the circumstances rather than simply possessing knowledge.

In this particular instance, the context can be broadly categorized into the following classifications.

1. The diachronic context, which encompasses the purchase history, is a significant factor to consider.

2. Engaged in the customer's context of problem-solving, specifically Synchrony.

The meta-context that is involved in the process of finding constellations or constructing a narrative, specifically refers to the para-texts associated with these activities.

The attainment of contextual marketing necessitates the presence of a well-defined strategy on the part of the marketer, in conjunction with a robust infrastructure of advanced and interconnected technological solutions Andreatta, S. L. (2000).

The context pertains to the exchange of data among multiple applications, as well as the capacity to mediate and deliver contextually relevant content, information, and offers instantaneously. Semantic technologies encompass language-based tracking methods, such as comprehensive content tagging and taxonomies, which aid in identifying the most suitable assets to be delivered to the appropriate device and customer at the optimal moment. Customer-centric view refers to a strong focus on various aspects of customer behavior, preferences, trends, feedback, and contextual needs Deacon, J. H., & Harris, J. (2011). The utilization of data to establish contextual factors (such as personal attributes, product characteristics, loyalty, location, and language) at various stages and touchpoints of the customer journey, through the process of journey-mapping. The process of collecting, listening to, aggregating, analyzing, and visualizing customer data. Sweezey, M. (2020).

Predictive analytics refers to the utilization of advanced algorithms that are informed by machine learning techniques, as well as the process of conducting tests and optimizing models over a period of time. López-Pastor, et al. (2021).

The integration of teams, workflows, and systems is essential for achieving holistic contextual marketing at scale. Without integration, these elements would only result in the creation of isolated units, hindering the overall effectiveness of the marketing strategy. Therefore, connecting individuals, technologies, and processes is crucial in order to achieve a comprehensive and cohesive approach to marketing.

The implementation of personalized and localized content, services, or targeting strategies based on data sets pertaining to distinct segments or individuals. The content assets should possess the qualities of flexibility, dynamism, and reusability. These assets should not only be seamlessly integrated across various platforms but also capable of being fragmented, rearranged, and repurposed according to the specific context, such as the appropriate timing, location, individual, service, and platform. Dou, X., Fan, A., and Cai, L. (2021).

The separation of content management from content delivery: In order to effectively operate, a delivery stack must possess the ability to comprehend customer context across a diverse range of business functions and systems, including but not limited to regular content management system (CMS) content, e-commerce platforms, and pertinent customer service information. Typically, these are managed within distinct backend systems. To achieve a comprehensive and fully contextualized experience, it is imperative that the delivery tier encompasses all these interconnected system Kotler, P., et al (2021). .

Contextual marketing is characterized by a high degree of personalization, wherein the content delivered to the recipient is tailored to their specific needs and preferences in a significant manner. Contextual marketing is commonly aimed at a specific target audience, referred to as personalization. This involves tailoring messages to individuals based on their name, gender, purchase history, stage in the sales cycle, age, and other relevant factors Kotler, P., et al (2021). However, context in marketing extends beyond personalization and encompasses various other highly relevant elements such as customer history (or lack thereof), location, device, and timing. The collection of contextual information has the potential to generate merchandising and product recommendations that are tailored to browsing or purchasing behaviors. Additionally, it enables the delivery of relevant advertisements to individuals through retargeting efforts. Furthermore, this information can be utilized to create personalized offers for loyal customers, as well as to customize search results based on an individual's database of intentions. Kenny, D. and Marshall, J, (2000).

3.   RESEARCH METHODOLOGY

According to Haydam, N. E., and Steenkamp, P. (2021), the research process can be visualized as an onion with each layer representing a progressively more comprehensive step. The current study is a positivism approach which is deduced from previous studies on contextual marketing and consumer buying behaviour. Owing to its nature the study is a mono method quantitative analysis which uses students as the participants of the study. Using the Kregcie morgan formula of Unknown population Chaokromthong, K., and Sintao, N. (2021) at 7.5% margin of error a sample of 170 students was considered viable. The researcher distributed 210 questionnaires and 190 responses were considered for the study after removing the Outliers. The data collection instrument was adapted from the previous studies. The items for contextual accuracy were adapted from Gao, Q., Rau, et al. (2010) and contextual intention were adapted form Wang, Y., et al. (2022). The statements for online impulsive buying behaviour were taken from Verma, Hemraj & Singh, Shalini. (2019). The questionnaire was prepared by adapting to the items mentioned in the previous studies to measure the types of stress. The questionnaire was first validated by 5 experts in the academic field followed by launching a pilot study. The pilot study results revealed that the instrument was reliable and consistent with a Cronbach alpha of 0.856 for 2 constructs measuring contextual marketing and 0.7641 for 3 construct measuring online consumer buying behaviour. The validity of the questionnaire was measured using the CR- Composite reliability > than 0.70; AVE – Average Variance explained > than 0.50; MSV – Maximum shared square variance > than AVE and MaxR(H) – Maximum reliability > than MSV. The second criterion to measure validity, the discriminate validity involves evaluating discriminant validity through the utilization of the Fornell-Lacker criterion Afthanorhan, A., et al.(2021).

4.   RESULTS AND DISCUSSION

Demographic profile of the respondents
Fig 1- Demographic variables of the respondents
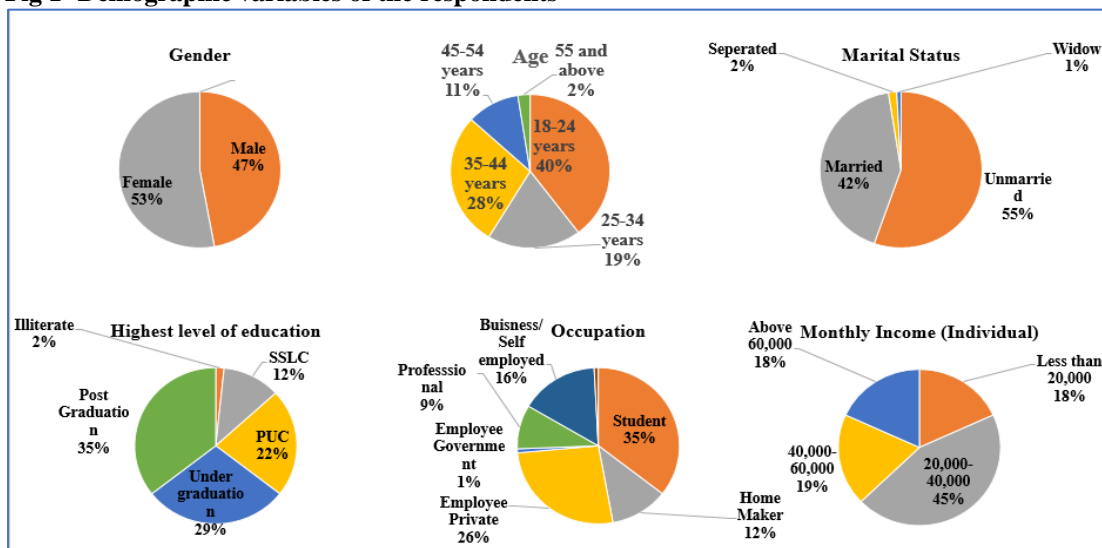
The target audience consists of a majority of 53% females and 47% males. Approximately 40% of individuals fall within the age range of 18-24 years, while approximately 28% belong to the late 30s and early 40s age group. A minority proportion of the target audience consists of individuals aged 55 years and above. The data pertaining to the marital status of the target audience indicates that 42% of individuals are married, while 55% are unmarried. The remaining percentage comprises individuals who are either separated or widowed. A minute fraction of the participants exhibit illiteracy, while a mere 12% have successfully obtained a Secondary School Leaving Certificate (SSLC). The data reveals that a significant proportion of the population, specifically 29%, have obtained a graduate degree, while an additional 35% have pursued postgraduate education. Education plays a crucial role in comprehending the advantages of organic food products and serves as a significant socio-demographic variable in the context of this study. In terms of occupation, the data reveals that 35% of individuals identified as students, 12% as homemakers, 26% as employees in private companies, and 16% as self-employed individuals. The predominant income range for the majority of the target audience is between INR 20,000 and INR 40,000, with 19% earning above INR 40,000.

Item analysis for contextual marketing
The mean scores above 4.00 indicated that the customers of organic food products are highly influenced by contextual marketing- Contextual accuracy (M = 4.12, SD = 0.876) and contextual intention (M = 4.07, SD = 1.100)

Item analysis for online consumer buying behaviour
The mean scores above 4.00 indicated that the customers of organic food products are highly agree for the consumer buying behaviour statements- Intrinsic Motivation (M = 4.16, SD = 0.911) , extrinsic motivation (M = 4.22, SD = 1.278) and hedonic motivation (M = 3.98, SD = 1.233)

Impact of Contextual marketing on online consumer buying behaviour
H1- There is a significant impact of contextual marketing on online consumer buying behaviour
Step -1 Exploratory Factor analysis
The KMO measure of sampling adequacy, which is equal to 0.898, and Barlett's Test of Sphericity, which comes with a significance level of 5%, are statistically significant. It was found by chi-square analysis that the Chi-square value of the Bartlett test is 8209.750 with the significant value less than 0.05 and 127 degrees of freedom, which shows that correlation matrix, is not an identity matrix and that it looks to be factorable.
Communalities refer to the extraction values for each of the items and should be above 0.300 and the communalities for stress items were between 0.338 and 0.896
The total of squared loadings that has been removed accumulates to about 73.737 % of the original loadings. In social sciences a cumulative Rotation Sums of Squared Loadings is considered good if it is above 50%. 2 components are discovered while applying the approach of Factor Analysis, according to the results of the study. The rotated component matrix showed that due to the appropriate factor loadings no items were deleted in the study.
Step -2 Run the model
Table 1 - Measurement Model – impact of contextual marketing on online consumer buying behaviour

Model Fit Summary				
CMIN				
Model	**NPAR**	**CMIN**	**Degrees of Freedom**	**CMIN/DF** $(\chi 2/df)$
Default model	119	212.997	123	2.876
Criteria				<3.000
RMR, GFI				
Model	RMR	GFI	AGFI	PGFI
Default model	0.048	0.826		
Criteria	<0.100	>0.80		

The table above displays the essential statistics for model fit. The chi-square divided by degrees of freedom ($\chi 2$ / df) falls within the acceptable range of 3 (specifically, 2.876). The observed Goodness of Fit value (0.826) surpasses the proposed attributes. The boundary estimation yields a value of 0.048 for the RMR. The model in question has garnered significant recognition within the academic community, and its measures of fit are reasonably appropriate.

Table 2- Structural relationship model - Impact of contextual marketing on online consumer buying behaviour

		Unstd Estimate	Std Estimate	P values
Online consumer buying behaviour <---	Contextual Marketing	0.563	0.101	***

Fig 2- Pictorial representation of Structural relationship model - impact of contextual marketing on online consumer buying behaviour
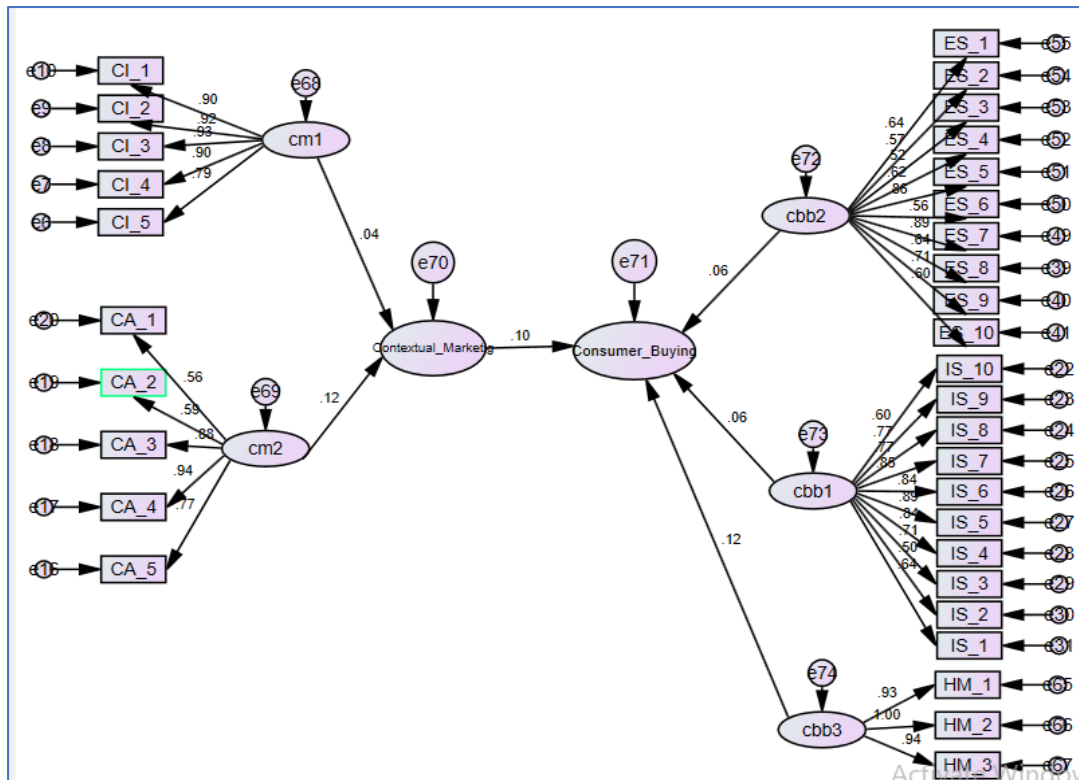
The results of SEM Analysis illustrate (Relationship between variables of unstandardized estimates)

➢ When contextual marketing goes up by 1, the consumer buying behavior goes up by 53 times (B=0.563,b= 0.101)   and this relationship is statistically significant at p<0.05

The results of the SEM analysis show that there is a significant positive impact of contextual marketing on the consumer buying behaviour

The advent of diverse technological innovations, such as personal digital assistants (PDAs) and interactive television, has provided a multitude of prospects for effectively engaging with customers in real-time within virtual environments. This offers a multitude of potential opportunities for businesses. Customers have the capability to establish a connection with the World Wide Web and gain access to the Internet through their wireless devices, irrespective of their geographical position or preferred time of usage. Contextual marketing, also referred to as CM and commonly abbreviated as CM, is a strategic methodology that entails providing customized and pertinent information to customers in accordance with their present context, precisely at the moment when they necessitate such information. The successful execution of this approach is of utmost importance in order to effectively appeal to potential customers and maintain the loyalty of current ones. In contemporary economies characterized by an abundance of information, clients demonstrate a desire for not only knowledge, but also products and services that are relevant, customized, and contextualized at the time of purchase.

5. IMPLICATIONS:

Prior to integrating contextual advertising into their marketing strategy, marketers must prioritize the category, relevance, and consumer presence aspects. Understanding your customer in order to establish a strong connection with them is a concept that merits exploration. Elucidating the methodology for accomplishing this task entails a comprehensive process and system that necessitates marketers to allocate additional resources in terms of time and financial investment in order to enhance their performance. This model will now be adopted by all advertising platforms and publishers. According to experts, it is necessary for Display, Search, Native, and social channels to depend on interest areas defined by consumers prior to the sale of advertisements. This requirement also extends to the ad buyers. Tu, Y., Neuhofer, B., & Viglia, G. (2018).

In order to effectively reach their target audience, brands must establish a clear definition of their intended recipients Ada, S., Abou Nabout, N., & Feit, E. M. (2022).,. Additionally, they must develop a compelling format that captures the attention and interest of their audience. Lastly, brands should optimize their content to maximize its impact and effectiveness.

6. CONCLUSION

The emergence of various technological advancements, including personal digital assistants (PDAs) and interactive television, has presented numerous opportunities for engaging with customers in real-time within

virtual settings. This presents a wide range of prospects for enterprises. Customers possess the ability to establish an internet connection and access the World Wide Web using their wireless devices, regardless of their geographical location or desired duration of usage. Contextual marketing is an effective strategic approach that involves delivering tailored and relevant information to customers at the exact moment they require it, while considering their current situation. The main aim of this study is to examine how contextual marketing, specifically in terms of contextual accuracy and contextual intention, affects the online purchasing behavior of consumers living in Bangalore city. The study focuses specifically on the purchasing behavior of consumers in relation to organic food products. The findings of this study have significant implications for marketers of organic food products, as they seek to efficiently reach and engage with diverse demographic segments. The organic food products industry is currently undergoing substantial expansion, driven by a growing consumer inclination towards acquiring organic food products essentials. The potential of the contextual marketing industry lies in its ability to enhance the dissemination of accurate information at the appropriate time and location within this industry.

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An Analytical Study about Teachers' Professionalism and Teachers as Professionals

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Abstract:
The National Curriculum Framework for Teacher Education (NCFTE) emphasises the importance of developing a professional workforce, stating that professional development is a lifelong process and a key element in developing professional competencies. The profession is defined by a long period of academic training, a systematic, well-structured repository of knowledge, formal and intensive vocational training, and codes of professional ethics. Teaching is seen as a profession, as it changes with the situation and context of the learner, necessitating constant contingency decisions.

Key Words: Teacher Education, Professional workforce, Professional development, National Curriculum Framework for Teacher Education.

1.   Introduction

Providing learning opportunities for students to transition from the darkness of ignorance to the light of knowledge is a crucial task performed by educational institutions. Teachers are among the most important members of staff in the institutions who significantly contribute to this development. The teacher is the most crucial component of any educational programme, as stated by NCTE (1998) in Quality Concerns in Secondary Teacher Education. At every step, the educational process is primarily carried out by the teacher. This highlights how investing in teacher development is essential to ensuring a country's future stability. It is widely acknowledged that a teacher's skill, sensitivity, and motivation play a major role in the nature and level of student performance.

The National Curriculum Framework for Teacher Education (NCFTE): To Develop Professional and Compassionate Teachers (National Council for Teacher Education, 2009) emphasises the importance of developing a professional workforce.

2.   Key Aspects of NCFTE 2009 about the Professionalism of Teachers:

The National Curriculum Framework for Teacher Education (NCFTE) 2009, outlines several key points about the professionalism of teachers. Here are some of the main points regarding the professionalism of teachers according to NCFTE 2009:

1. **Continuous Professional Development:** Teachers are expected to engage in continuous professional development to enhance their knowledge and skills throughout their careers. This includes attending workshops, seminars, and relevant training programs.

2. **Reflective Practice:** Professional teachers are encouraged to be reflective practitioners. They should critically evaluate their teaching methods and experiences to make improvements and adjustments as needed.

3. **Lifelong Learning:** Teachers are viewed as lifelong learners themselves, continually updating their knowledge to keep up with evolving educational practices and technologies.

4. **Ethical and Social Commitment:** Teachers are expected to uphold high ethical standards and demonstrate a strong commitment to social values and social justice. They should serve as ethical role models for their students.

5. **Inclusivity:** Professional teachers are responsible for creating inclusive learning environments where all students, including those with special needs, have the opportunity to learn and succeed.

6. **Cultural Sensitivity:** Teachers are encouraged to be culturally sensitive and aware, respecting the diversity of cultures, languages, and backgrounds among their students.

7. Collaboration: Teachers should collaborate with colleagues, parents, and the community to enhance the educational experience of their students.

8. Technology Integration: NCFTE 2009 acknowledges the role of technology in education and expects teachers to be proficient in integrating technology into their teaching practices.

9. Assessment and Feedback: Teachers should use various assessment methods to gauge student progress and provide timely and constructive feedback to help students improve.

10. Research and Innovation: The framework encourages teachers to engage in educational research and innovation to contribute to the improvement of teaching and learning processes.

11. Flexibility and Adaptability: Teachers should be adaptable and flexible in responding to changing educational contexts and the diverse needs of their students.

12. Communication Skills: Effective communication skills are essential for teachers to convey information, ideas, and instructions clearly to their students.

13. Professional Responsibility: Teachers are responsible for the overall development and well-being of their students, including their academic, social, and emotional growth.

14. Professional Ethics: Teachers are expected to adhere to a strong code of professional ethics, including maintaining confidentiality, avoiding conflicts of interest, and promoting ethical behaviour among students.

These key points from NCFTE 2009 emphasize the professional standards and responsibilities expected of teachers. They highlight the role of teachers as dedicated professionals committed to the continuous improvement of education and the well-being of students.

3. The meaning of the word Professional:

In defining the Professional, Eric Hoyle (1982) presents some standards:

I. A profession is a job that serves an important social purpose. A certain level of skill is required to do this job.
II. While doing this work, new situations can be created which can be faced with the help of these skills.
III. Therefore, the knowledge gained from experience or a definite guideline is not enough, solutions have to be found with the help of organized and systematic knowledge.
IV. A long period of higher education is required to acquire this knowledge and skills.
V. Professionalism values also include socialization during this preparation.
VI. Commitment to the 'customer' is key to these values.

Since professional knowledge cannot be equally put to use for every situation, autonomy and freedom of decision-making are imperative for the professional.

Because the responsibilities of the profession are so specific, the participation of members of the profession in policy-making related to this profession and the right to make decisions and autonomy from governance is essential.

The result of a long period of preparation, responsibility, and intense commitment to the 'customer' is a high reputation and a decent salary.

The National Teacher Education Curriculum Framework 2009 defines the characteristics of the profession as "a sufficiently long period of academic training, a systematic, well-structured repository of knowledge on which the work is based, a sufficient period of formal and intensive vocational training and practical experience in the field of work, and codes of professional ethics that bind members into a fraternity."

The National Teacher Education Curriculum Framework 2009 defines the Professionalism as "a set of qualities, behaviors, and attitudes that are expected of individuals in a specific profession or occupation. It encompasses a commitment to ethical standards, competence, integrity, and a dedication to fulfilling the responsibilities and duties associated with one's profession". Professionalism also include socialization during this preparation.

Professional values also include socialization during this preparation. "The National Teacher Education Curriculum Framework 2009 defines the characteristics of the Professional values as: "Professional values are a set of principles and ethical standards that guide the behavior, decisions, and conduct of individuals in a specific

profession or occupation. These values help define the professional identity and establish expectations for ethical and responsible practice within that profession."

According to Squires (2003), some people say that teaching cannot be a profession. Teaching is a blend of knowledge drawn from many fields of study. It is not a field of study. That is why the voice of teachers is not found in policy or high-level decisions. However the scribes regard this opinion as a poor view of teaching. To some extent, he holds teachers responsible because they have defined teaching only by methods. Squires proposes a new way of looking at teaching like other professions, which helps in achieving an objective, teaching is context-based and learning is procedural.

Teaching, itself, is not made pleasant but is helpful in someone else's learning, and the change that learning brings is much more than the scope of teaching. Teaching changes with the situation and the context of the learner; therefore, teachers have to constantly make contingency decisions. They cannot adopt fixed methods. It also changes in terms of time and thinking. Thus, skiers view teaching as a profession.

4.   Meaning of the word 'Professional' in the context of Teacher:

A professional person has his own distinct professional identity. Reflecting on the characteristics of a teacher's work, there is no doubt that the teacher has a unique identity. At the same time, entry into a profession is formal; this statement is also true for a teacher. A person can become a teacher only if he spends at least two years in an institution of teacher education, passes an examination, and obtains a recognized degree. Also, to teach in some classes, the teacher has to give a demonstration of success in the Teaching Eligibility Test (TET) as well.

Systematic knowledge is required for teaching. A teacher must have theoretical knowledge, subject-specific knowledge, and professional knowledge. Only with a thorough knowledge of the subject matter can a teacher present this knowledge in a suitable manner to students of different levels. At the same time, knowledge of the subject matter gives the teacher confidence. This confidence develops a teacher who can give students the freedom to learn on their own. You can answer their questions and, on the basis of these questions, deviate from the predetermined plan. This is possible only if, during pre-service teacher education, the student teachers are given opportunities to work in real classrooms, where they are given positive feedback and encouragement to think. Also, by observing the classes of experienced teachers and their classmates, opportunities for discussion should be provided to understand and analyze the work being done by them.

A blended understanding of pedagogy and content is also essential to the teaching-learning process. The teacher not only needs an understanding of the knowledge, but he also has to combine this knowledge with his own experience to create a personal framework that will guide his decisions and actions. This is possible only through a well-planned and long-term teacher education programme.

For a professional teacher, the need for a well-organized knowledge repository is not only for the process of teaching and learning but also to build one's autonomy. The characteristics of a professional teacher also include autonomy and accountability. Autonomy and accountability, however, are the result of understanding and experience. If a teacher has a deep understanding of every aspect of his field of work, whether it is teaching, learning, and assessment, other educational processes, or his own development, he can make his own decisions. If there is an understanding of the broader goals of education, the teacher can take responsibility for himself by thinking about the consequences of every decision he makes; he does not need to be supervised.

A teacher should also have an understanding of different perspectives on education and its system. With an understanding of education policy and implementation, teachers can find special meaning in their day-to-day work. It is also necessary for the teacher to understand the thinking behind the tasks that they find difficult or inappropriate. It is essential for a teacher to understand the interrelationship between society and education, the interrelationship between different parts of the education system, and their connection with the history of education. Only then can he get up from the small and exciting stories of his day and do his work.

The characteristics of the profession also include shared professional ethics—the values and rules that teachers imbibe to carry out their work. Whether it is love for children, respect for the community and its differences, or commitment to one's own development, A fraternity of professions is made up of written or unwritten rules of ethical behaviour. Every member of this community moves towards proficiency. It is hoped that the foregoing discussion will have made it clear that the professional competencies of the teacher can be developed through appropriate processes of professional development. A question that is often asked in the context of teachers is: Are teachers born or can they be made? The answer is clear: through appropriate processes and relevant experiences, students and teachers can be made responsible professionals.

5.   Conclusion

The qualities of a professional teacher that emerge based on the foregoing discussion are directly related to the empowerment of the teacher—a systematic framework for working with theoretical knowledge, content knowledge, and pedagogy. Professional knowledge includes the teacher's responsibilities, an understanding of the educational system, an understanding of the workplace, and an understanding of the interrelationship between education and the community. To achieve all this, while a long period of formal and in-depth education is required, the importance of experience, thinking, autonomy, and accountability is also required. By the way, preparing the teacher as a professional is important for their daily routine in school. In order to competently perform their work and carry out the processes of education in new conditions, the teacher must demonstrate the same qualities as a professional person.

The National Curriculum Framework for Teacher Education 2009 describes the preparation for the teaching profession as follows: Teaching is a profession, and teacher education is a process of professional development for teachers. Preparing a person for business is a difficult task that requires action from many fronts and perspectives. It is hoped that the change in our teacher education will come soon and that our teachers will be endowed with human and professional qualities.

Acknowledgement:

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High Gain Low power (Non-Isolated) DC-DC Converter Review

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Abstract

The increasing electricity demand is being met by photovoltaic energy conversion. Rural areas can be powered by energy from renewable energy sources when used in conjunction with existing power lines. Grid-connected photovoltaic systems have emerged widely, due to the advancement in DC-DC converter topology and inverter control techniques. The appropriate selection and operation of the DC-DC converter stage determines the efficiency of supplying power to the grid. Therefore, the efficiency of existing DC-DC converter topologies needs to be carefully analyzed. The conversion and design of high-gain low-power (HGLP) DC-DC converters, that can be used in solar photovoltaic supply systems are assiduously reviewed. For DC grids/microgrids, the basic characteristics and possibilities of the connection obtained from the topologies are pivotal. Different HGLP topologies has been reviewed and their performance in terms of voltage gain, number of components and application has been analyzed in this work.

Keywords—PV system, (HGLP) high gain low power, DC-DC Conversion, high step-up converter.

I.   Introduction

In recent years, there has been raise in the capability of electricity production from renewable energy sources (RES). Interest in renewable energy has been increasing because of increment in non-renewable fuel source prices and new regulations to reduce carbon dioxide exhalation. Photovoltaic (PV) is profitable approach around the world as a renewable energy technology. This upshot in recent years has been contributed by severe pollution rules sanctioned on coal. traditional strategies of power generation and improvements in electricity conversion technologies. [1-3] DG (Distributed generation) systems powered by micro assets like PV structures have also widely adopted to meet the growing demand for energy in the allotted era. High-boost DC-DC converters commonly link between PV panels and the inverter load because the output voltage of individual PV panels is approximately 20-60 V. We require a high-efficiency, high-boost DC-DC converter to step up the low PV voltage to a high voltage of approximately 380 V to match the input of a full-bridge inverter on a 1- Φ 240 V AC grid. [4]

Connect power supply, to meet the DC bus voltage of grid-connected inverters, PV series structure as shown below fig (1) is the traditional solution. However, In the case of tandem PV design, the power generation output drops significantly due to irregular material and partial shading conditions, noticeably in cosmopolitan sector. [4-5]
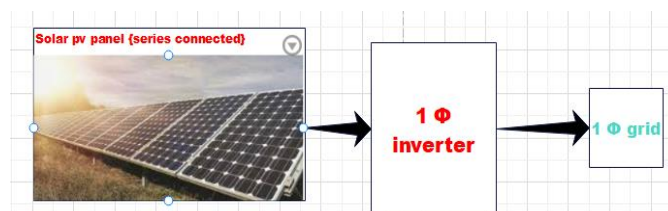

Fig (1) *1-Φ Conventional grid connected PV systems.*

You can use large efficiency solar interactive photovoltaic systems with Generation Control Circuit to drive entire series of photovoltaic arrays, but they require a lot of electricity. Additionally, the cost of obtaining a 240 V power grid is higher for these solutions.[5]

Therefore, the balanced PV composition presented below in Fig. 2 is more adequate than the series composition due to finer PV efficiency.
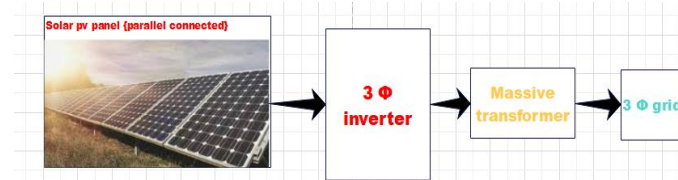
Fig (2) *3-Φ Conventional grid connected PV systems.*

Low power output that can easily be met as maintained for home use is resulted from the balanced composition. Maximum power point tracking (MPPT) is used to abstract valuable power from photovoltaic panels, composition presented below in Figure 3.
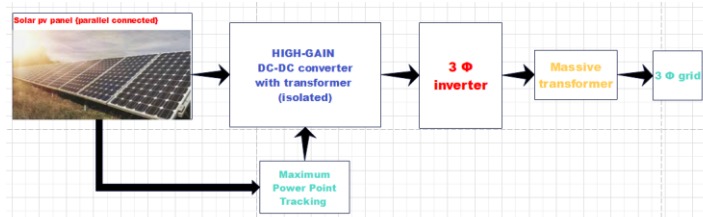

Fig (3) *3-Φ Conventional grid connected PV systems with (MPPT).*

The voltage range of MPP is 20V-40V corresponding to the voltage dimensions of the PV panel. To solve the problem of inconsistency between the balanced low-voltage photovoltaic array and the standard power grid, a cooling system (PCS) should be used to increase the voltage. To solve the problem of inconsistency between the balanced low-voltage photovoltaic array and the standard power grid, a cooling system (PCS) should be used to increase the voltage. Therefore, high-boost Front-end converters are often used as DC-DC converters, as presented below in Figure (4).
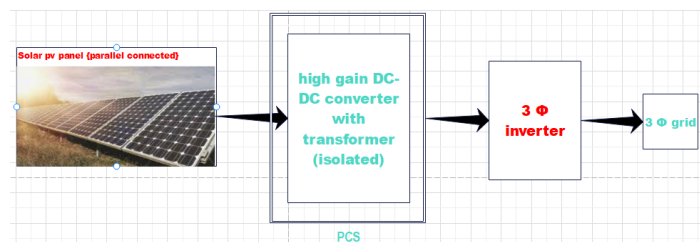

Fig (4) *PV photovoltaic systems with high gain DC-DC converter(isolated).*

Using above high boost the size of the power transformer used before the connecting line is reduced by the DC-DC converter, resulting in a great reduction in system costs. In general, Isolated (with transformer) and non-isolated (transformer-less) converters generally divide high-gain DC-DC converters.
The isolated DC-DC converter presented in Figure 4 uses a transformer whose output can be adjusted as demand increases. This makes the entire system cumbersome. Furthermore, the main switches of these converters are subjected to high voltage spikes, which lead to greater power variation caused by the leakage inductance of the transformer. [5-7]
The non-isolated DC-DC converter presented in Figure 5 does not need a transformer and can achieve high gain by using passive devices themselves.
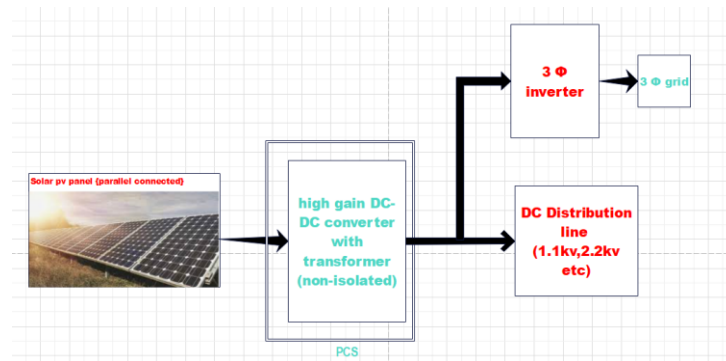
Fig (5) *PV photovoltaic systems with high gain DC-DC converter (non-isolated).*

As a result, non-isolated step-up DC-DC converters find more tenacity and perform better. The best choice for PV grid connection is determined to be non-isolated DC-DC converters since overall performance of the entire PV grid is mainly dependents on the DC-DC converter stage. [5-7]

The output voltage of the conventional step-up converter is limited to multiple of 6 to the applied voltage by practical application. To achieve high supply of output voltage, extremely high duty-cycle proportion must be operated by the conventional boost converter. Inefficiently small off-times or low switching frequencies are imposed by extreme duty cycles. Severe diode reverse-recovery current is caused by small off-times, which will increase the levels of EM interference. Higher ripple current and increased magnetic components are caused by lower switching frequency. [7-8]

II.   High gain-low power converters (HGLP)

a.   Three level boost converters

The three-level boost converter as presented in figure (6) can twofold the voltage gain of a conventional step-up converter. At the same time, just half the output voltage is experienced by the switch as the maximum stress. However, in a difficult transition, the electronic device operates and the output diode reverse recovery problem is relentless. [8] To minimize the switching losses, active or passive alteration is used to soft switch the power switches. Significant advantage is had by three level boost converters as compared to conventional boost converter. The bulk of the inductor is reduced and switch voltage rating is half of the output voltage. The overall circuit is reduced and the efficiency is improved in three-level DC-DC converters. [8-9]
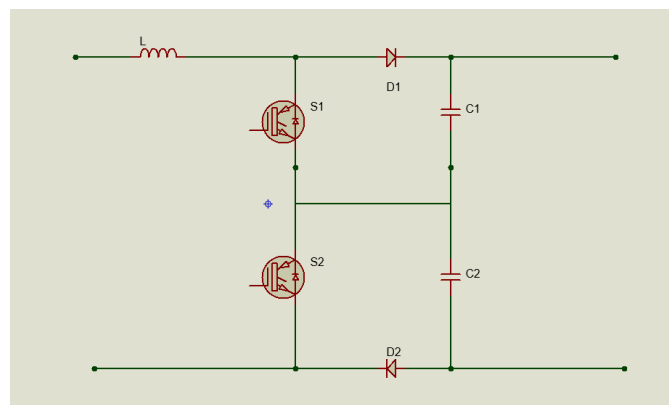
Fig (6) *Three level boost converters*

Working Principle: Symmetrical operation of three level step-up converter is explained with its operating regions.

In this converter there are two switches s1 and s2 with switching frequency fs. The carrier signals are from PWM generation (triangular for both switches but those are in 180° phase shift to each other). both switches can be turning ON and OFF at the same time using these signals. Vc are the voltage across the capacitors (C) respectively. [10-11]

It operates in 4 modes:

In mode 1, both switches are ON and inductor voltage is equal to input voltage.

In mode 2, s1 is active and s2 is inactive and inductor voltage $VL = Vin - Vc2$.
In mode 3, s1 is inactive and s2 is active and inductor voltage $VL = Vin - Vc1$.
Where as in mode 4 both the switches are in inactive and inductor voltage $VL = Vin - Vc2 < 0$
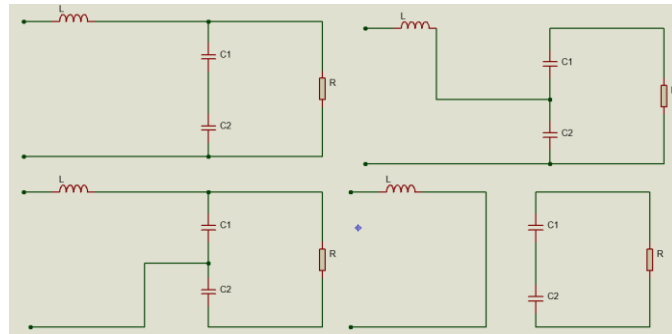

Fig (7) *Four-quadrant operation of Three level boost converters*
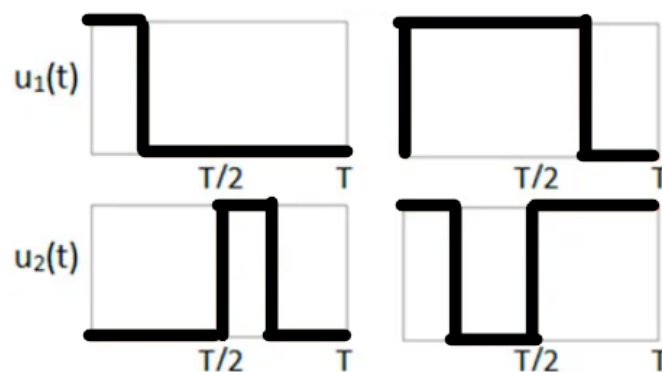
Fig (8) *Four-quadrant operation*

Hence, the voltage conversion of the three-phase boost converter is still not large enough for advanced boost applications.[11]

b. Voltage multiplier cells

The key advantages achieved by voltage multiplier cells (VMC) is it combines with classical converters and it operates with high static gain, reduces the maximum switch voltage, acts as a regenerative clamping circuit, reducing problems with lay-out and the EMI generation, zero current switch turn-on and minimization of the effects of the reverse recovery current of all diodes with the addition of a small inductance. It allows to operate with high efficiency and to obtain a compact circuit for applications where the isolation is not required.[12] It delivers more output with less input without the need for expensive power transformer. These characteristics allows to operate with high static again, high efficiency and to obtain a compact circuit for applications where the isolation is not required.

Fig (9) *Voltage multiplier cell*

To achieve high voltage gain and efficiency in general we use voltage multipliers are used to achieve low frequency rectification. This is achieved with modular circuit structure. The complexity of the circuit increases with high voltage gain. [12-13]
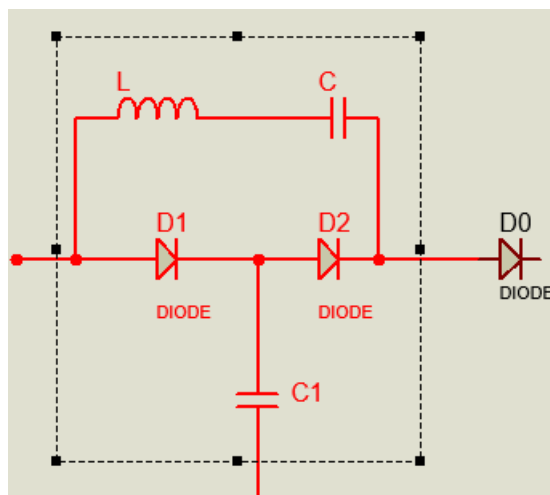
c.   Multilevel switched capacitor (SC) technology

The term "multilevel" refers to total number of voltage levels that can be generated. The more levels that are used, the finer the control over the output voltage. The configurations include two-level, three-level, or even more complex designs. It involves the use of multiple levels or stages of switched capacitors to achieve desired voltage levels. This technology is often employed in situations where high-voltage conversion, filtering, or analog signal processing is required.

At its core, switched capacitor technology operates by rapidly switching capacitors between different voltage to achieve the desired voltage levels. This switching action occurs in discrete steps, which allows for precise voltage control. The switching frequency of the capacitors is a critical parameter in multilevel SC technology. It determines the bandwidth, efficiency, and noise characteristics of the circuit. Higher switching frequencies are often desirable for improved performance but can also lead to higher power consumption. Voltage Balancing in more than two levels, ensuring that the voltage across the capacitors is balanced is crucial. Voltage balancing circuits are often incorporated to maintain uniform voltage distribution among the capacitors.[13]

It offers high precision and accuracy in voltage or signal generation. circuits can be more compact than traditional analog solutions, making them suitable for integrated circuits. it is commonly used for DC-DC converters, voltage regulation, power amplifiers, analog signal conditioning, such as filtering, amplification, and analog-to-digital conversion. It offers some losses, particularly due to switching and parasitic capacitances. Efficient control algorithms and circuit design are essential to minimize these losses. Multilevel switched capacitor technology offers a versatile and efficient approach to voltage conversion and analog signal processing in a wide range of applications, providing benefits such as high precision, compactness, and flexibility in voltage or signal generation.

d. Voltage doubler

A voltage doubler is basically Voltage multiplier cells with multiplication factor twice. It contains diode and capacitor. The voltage doubler charges the capacitor with the input voltage and converts the stored charge to produce exactly twice the input voltage at the output. Not at all voltage doubler circuits are higher level. [14] The higher the balance of the equation can be achieved by cascading the multipliers at the same level, but this comes at the cost of increased productivity, reduced losses, and efficiency.
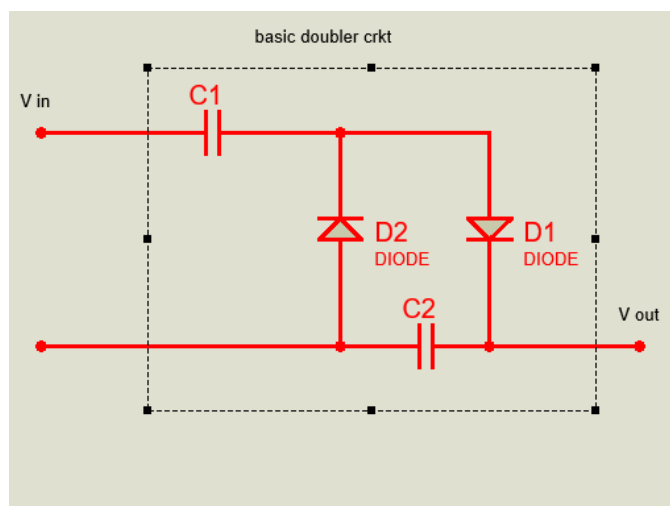
Fig (10) *Voltage doubler*

voltage doubler, although effective, can cause some voltage ripple and capacitors and diodes must be appropriately sized to ensure the required voltage is achieved with distortion or fluctuations. since they do not provide voltage control, the output voltage may vary depending on the input voltage or load.

III.   Conclusion

High gain DC-DC conversion has gained popularity in recent times. With the recent development in the renewable energy sector need of high gain DC-DC converter has increased. The traditional boost converter has limitation in terms of voltage gain. Few high gain low power converters where discussed and it was seen that multi-level switch capacitor gives high voltage gain but the number of components required is quite high. Other converters like three level boost converter and voltage multiplier cell gives limited voltage gain compare to multilevel SC technology but has lower number of components.

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Social Hierarchy in Buchi Emecheta's *the Joys of Motherhood* and P. Sivakami's *the taming of women*

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ABSTRACT

This paper analyses trauma-related meaning for both victim and perpetrator groups and makes the novel claim that trauma is not just a destructive occurrence but also an indispensable component in the production of collective meaning. As a result, there may be additional benefits to collective trauma for victim groups that are generally underestimated, such as keeping the memory of trauma alive and leading following generations to absorb the pain into their collective self. For perpetrator groups, trauma acts as a catalyst, stimulating the development of a new social representation that, if successful, may support a collective self that acknowledges prior misdeeds in a neither defensive nor debilitating way, promoting positive social identity. As a result, collective trauma may enable the creation of many dimensions of meaning and social identity, such as purpose, values, effectiveness, and collective worth. These impacts of trauma on the production of communal meaning may, ironically, grow with time as the focus of memory switches from the terrible loss of lives to the long-term lessons communities acquire from the tragedy.

Keywords: Collective Trauma, Social Hierarchy, Identity, Collective Identity

1. INTRODUCTION

The impacts of collective trauma on meaning construction are not limited to the victim group, which must reinvent itself and rebuild everything lost, but also to the perpetrator group, which must redefine itself and construct a positive moral image of the group in light of the atrocities it committed. Collective memory fosters identity creation and the maintenance of a positive communal identity and a sense of value. This can be accomplished by social comparisons and devaluations of other groups, as well as through reconstructing reality and memory in order to maintain a good image of the group. We have seen how trauma creates meaning for victim groups; it alleviates imminent crisis, induces a search for collective meaning, operates to integrate the individual in a cultural circle that transcends physical existence, promotes a constant historical self that spans centuries and millennia that is appreciated above individual life, and increases group identification and group cohesion. Communities with a trauma history are constantly building and rewriting the meaning of the trauma, not so much to comprehend the past as to make sense of the present. The present actively shapes memory of the past; as present conditions change, the incentive to recall the past in a particular manner may shift. This reconstructed meaning comprises reweaving the fabric of fundamental connection, discovering purpose, values, and worth, and a sense of effectiveness to make a difference. Yet, these results presume a monolithic link between trauma, memory, and meaning, with all group members assumed to get the same sense of purpose from the same collective experience. Yet, people interpret history in various ways, and what causes remorse in some may inspire pride in others, depending on how they depict the past and the attributions they make for their group's wrongdoings. This difference between consensual and non-consensual societal representations is critical for understanding how individuals make sense of history and their group and other groups' roles. For example, offenders' actions are sometimes difficult to comprehend, and experts and laypeople make assumptions about why perpetrators reacted the way they did.

2. SOCIAL STRATUM IN *THE JOYS OF MOTHERHOOD* AND *THE TAMING OF WOMEN*

Social hierarchy in the novel determines the social status of women from the farthest end to the nearest. Women, regardless of their socioeconomic status, are an oppressed class. Women are expected to cook, raise children, and carry out their husbands' orders. From personal experience, women are not recognized and denied political, legal, social, career prospects, and even marriage rights. They are denied such chances because of their gender. They give their assets to their spouses if they are married. Buchi Emecheta's books capture the grief, sadness, and resilience with which women face the hardships of traditional African life in a modernizing world. Her works explore the conflict between Western and traditional values by portraying female characters who question their positions as beasts of burden and fight for economic and societal freedom. A woman is intended to think foolish in *Joys of Motherhood*; she is not expected to be a reasonable human. That was why Nwokocha Agbadi chastised his Ona when he thought she was being overly educated. He informed her that she is in the early stages of parenting and refuses to think like a woman; instead, she thinks like a male.

Being foolish is the only way to think like a woman. In the novel's worldview, males are content to regard women as victims, prey to be used and discarded. Similarly, in Joys of Motherhood, women are portrayed as commodities or property that may be purchased and inherited. Nnaife desired to return home and traditionally marry Adankwo. Adankwo is his heir by right of inheritance (183). Women are portrayed as commodities to be traded or sold, much like cows and goats, causing considerable psychological harm. Her inheritance and commodity selling are unsavoury features of the society that Emecheta brought to light for censure.

In traditional Ibuza culture, the Chief is given the highest position. The man of the tribe is given prominent status and respected by the clan in the same way. The people in the tribe obey the decision of the Chief and follow it unthinkingly without cross-examining. Ona promised Agbadi that if she bore a baby girl, she would give the baby to Agbadi. But Obi Umunna says, "She is a woman, so I don't see why not (26)." A woman can break her promise and can still be considered authentic to herself. However, Amatokwu, is regarded as a man of words as he allows Nnu Ego to return to his village. The quality of a man is associated with the promises he keeps. The men are expected to stick to the promises, while women are allowed to break them. Buchi Emecheta discusses the plot against femininity in *The Joys of Motherhood*. Women are burdened with caring for their children even when their spouses are around. She pays for the meals with her husband's limited housekeeping funds. In her marriage to Nnaife, Nnu Ego bears this load. During her husband's absence, Nnu Ego sells goods such as cigarettes and firewood. Her male offspring did not recall her despite her efforts to instruct them. The society holds her responsible for her children's misconduct, which has caused her to become mentally unstable. She dies by the side of the road like a poor. Women lose whether they conform or revolt, according to tradition. Prof. Nnolim (2010) asserts that,

Motherhood which is the ideal reached after Nnu Ego in the Joys of Motherhood is no insurance or guarantee against unhappiness since that joy is a question mark because, as Emecheta puts it: if you don't have children, the longing for them will kill you, and if you do, the worrying over them will kill you..., Nnu Ego laments: ―God, when then will you create a woman who will be fulfilled in herself, a full human being not anybody's appendage. (102)

The image of women as people who will "never amount to anything" has been a dominant graphically painted image in many of Buchi Emecheta's works, particularly in *The Joys of Motherhood*, which cited the traditional African woman, in the person of Nnu Ego in *The Joys of Motherhood*, who is dumb because she lacks ambition to improve their lot. They consent to live in abject slavery, receiving very little love, devotion, and financial support from their husbands and, regrettably, seeking considerably less to gain some education to change their fates. These women are as ancient as history. Yet, their image should be replaced with that of modern women who are strong, smart, aggressive, and self-sufficient enough to take bold actions towards their survival in a "sea-like environment" ruled by (male) sharks eager to feed on defenseless (female) porpoises.

In this situation, the *chi* actively adds to Nnu Ego's sorrow by haunting her incessantly, yet neither the spirit nor the heinous crimes it perpetrates are unique events in this tale. Spectral figures in this literature frequently express grave harm as a result of organized societal injustices. Most intriguingly, they materialize around problems of interpretation that run throughout the novel - Nnu Ego and her community decipher her situation as the result of her spirit's malevolence - drawing attention to the links between interpretation, constructions of justice, and Emecheta's career-long preoccupation with gender. This novel employs ghostly irruptions and the metaphor of haunting to investigate the variably configured intersections of gender, interpretation, and justice, informally referred to here as gendered hauntings. (Robolin, 77)

The way hierarchy is set in the family also bewilders the readers. Even though Nnu Ego moves to Lagos, where there is colonial influence, the status of women is the same as in her traditional village. She is always treated as secondary in the family and is expected to cater to the husband's needs. The hierarchy set in the family gives importance to the male, and preference is given to their choices. The women are always expected to follow the instructions given by the men. Even though Lagos is a colonized city, the rules remain unchanged in this scenario. Women are slightly free to look over economic independence. They are allowed to have jobs to take care of their family. But when it comes to decision-making, women are always given secondary positions. People from traditional villages living in Lagos are always caught between trying to meet the needs of traditional roles and those of the new world. Nnu Ego tries to catch between the different realms of life and decides for herself by choosing to stay in her native village but fails miserably as she does not have the authority to choose her own life. Her father, the village chief, stands for her and makes amicable reasoning to avoid conflict in the household. She is either controlled by her fiancé or her father. Later in her life, her husband makes choices for her, which reflects the social hierarchy of the tribe.

The opening haunting scene, which occurs at the temporal midway, allows Emecheta to launch a forceful critique against the workings and trappings of gender as encoded and structured in a complex social order. The basis of Nnu Ego's suffering is her father's "sins," namely his involvement in the slave trade and, in particular, his "unfair"

"acquisition" of one lady who had been "promised to a river deity." Nnu Ego's choice of this linking structure as the site of her intended death is far from coincidental since this image spatially portrays the condition of complicated social interactions that Nnu Ego experiences daily in her endeavour to develop her own burdensome familial roots. As such, the bridge symbolizes the point of convergence for a variety of competing or dissonant social forces, whether sexual, cultural, or temporal. Most clearly, the bridge from which Nnu Ego totters represents the transitional zone between two warring political and cultural systems—one which is imported and pushed into the social space of the other, which is (more) indigenous, traditional, and historically based. The story is filled with evidence of the colonial administration's disruption of the latter and the tangled implications that follow; a state of flux and change notably marks Nnu Ego's social milieu. The encounter between equally diverse "culture temporalities"—indigenous Igbo tradition and Western modernity, respectively—is intricately linked to this contestation between political systems. Despite the heroine preferring a more traditional mindset, others around her, particularly those in Lagos and, in particular, her husband Nnaife, are captivated by the trappings of a more "modern" society and its purported (but long-deferred) benefits.

The protagonist's life in *Joys of Motherhood* follows an intriguing graph: Nnu Ego, the joyful bride of Amatokwu, was first slighted and ridiculed by her husband after she was discovered to be infertile. She seeks refuge in the feminine Nnaife (her second husband) since he can provide for her children, making her a genuine lady. But this, too, backfires, leaving her to die alone and without anybody around.

Nnu Ego lay down by the roadside, thinking she had arrived home. She died quietly there, with no child to hold her hand and no friend to talk to her. She had never really made many friends; so busy she had been building up her joys as a mother. (224)

The work emphasizes the utter futility of achieving such 'satisfaction' through motherhood alone, therefore criticizing the ancient African idea that "mother is supreme." (Mathew)

In terms of gender, race, and class, the African woman's existence was that of a subaltern. They bore a double yoke, working in the house and on the farm, with little payoff. Women were forced to repress their own needs in order to offer emotional and material support to the family's male. Emecheta's Joys of Motherhood, which depicts the tribulations of the black woman in an urban colony, embodies these features of female servitude. Buchi Emecheta's character, Nnu Ego, subverts ingrained ideals of the African feminine and the culture's idolization of motherhood in the novel. She may have a subaltern status, yet the African woman strikes out directly and indirectly against such a social position. After going through the stages of othering, ambivalence, and hybridity, the protagonist arrives at a crossroads on the road to selfhood.

Periyannan is a protagonist and Dalit leader who wields immense authority and respect among the Dalits in his town and neighbouring villages. Even upper-caste landlords and police personnel are swayed by him and fear him. Despite the fact that he has a legally married wife, Anandhayi, Periyannan invites another woman, Lakshmi, to his home. Lakshmi's widowhood renders her vulnerable to sexual exploitation by many men who abandon her quickly after their fulfilment. She has no help from her family, and her economic and social situation is incredibly precarious and pitiful. Periyannan kidnaps her for these reasons, torturing Lakshmi's body virtually every night. She once elopes with a lorry driver to escape his grasp, but he returns her within a week. As Lakshmi responds to his pestering with a sickle, it strikes Periyannan's hand and knocks him to the ground. Mani kicks Anandhayi in the breast while yelling, "Do you even call yourself a woman?" Lakshmi couldn't believe Mani was doing all of this for her. She collapsed on the ground, and Periyannan seized her, stamping forcefully on her chest and stomach. "Dear Amma, I'm being stamped to death," she sobbed (128). Mani and Periyannan then pull Lakshmi up the stairwells, toss her inside the room, and lock the door from the outside.

The depiction of Lakshmi in the novel *The Taming of Women* repeats the stereotype of an impoverished lady who becomes a concubine. Nagamani is a childless widow whom several men have used throughout her youth, the last of whom abandons her at a lodge. Her uterus is injured as a result of her sexual exploitation, and she is unable to conceive. Periyannan is presented to her as a wealthy, childless widower who is captivated by her beauty and places her in a townhouse apart from his family home. Lakshmi's post-widowhood lifestyle separates her from her original family, and she is afraid of being punished violently if she ever goes home. As a result, she decides to live with Periyannan. As a result, she decides to live with Periyannan. When his younger kid dies at home, and he finds it difficult to manage two houses and his official duties, he confronts Lakshmi:

Why don't you come and live with her? I am unable to keep both of you happy. This bridge will be done in a year. I want to get Kala married by then. Mani will move to the city to continue his studies. The rest are still little. You stay on the first floor with me. Anandhayi is a patient woman. She got married to me as a very young girl. She is scared of me and will not even squeak. (99)

Periyannan's wife appears as the "other woman" at various places throughout the story. While Periyannan has strong associations with professional prostitutes, including a distant cousin like Muthakka's, who visits to assist his wife in giving birth to her fifth child, Anandhayi is always held captive by repeated pregnancies and is constantly subjected to severe violence by her husband. Periyannan throws her to the floor, attacks her, and climbs the stairs to sleep with her even while she is in labour. Lakshmi, like Anandhayi, is physically and sexually abused by Periyannan. Periyannan enforces his patriarchal control via numerous acts of violence against all the ladies in his family, including his elderly mother, daughters, wife, and concubine. Physical violence oppresses women of all ages in *The Taming of Women*. Periyannan is out of the house for an extended period, and each time he returns, he brutally attacks Anandhayi, chastises her for being a negligent housewife, and accuses her of pursuing secret boyfriends during his absence. He shows little interest in or responsibility for their children's upbringing, blaming Anandhayi for every tiny error in their children's upbringing. He creates an environment of pure horror for the limited periods when he is at home. The house, far from being a safe haven for women, provides little safety for Anandhayi or her daughters. Mani, the eldest son, also follows his father in harassing his sisters. Patriarchal control over women's bodies—education, marriage, and, most importantly, sexuality—is most brutally enforced by the vicious assault on women's bodies.

Periyannan takes a concubine and treats her like a commodity. Every night, he takes advantage of Lakshmi. He constantly worries about her, will not allow her to talk to anybody, and frequently has forceful sex with her. While he is justified in inflicting abuse on his wife and forcing her to have recurrent pregnancies, in the instance of his wife: "He kept her under his watch. He built a modern toilet for her upstairs, so she did not need to come down even for that. She was isolated from human contact. Her food came to her on time. She felt like a dog" (187). In this regard, it is appropriate to reference Simone de Beauvoir's book *The Second Sex*, which discusses the "othering" of women extensively. She states, "She is defined and differentiated about men and not he concerning her. She is inessential, incidental, as opposed to the essential. He is a subject, absolute, and she is other" (8). When Vadakathiyaal meets Periyannan's wife and speaks in favour of Lakshmi, she replies, "I would not blame her, eh? She did make it clear that she wanted out. Why did not he let her go? Why torture her for even wanting to leave? And how can you be sure it will not happen to your daughters in the future? " (171). Periyannan's approach to exerting control and authority over women is imprisoning a woman's body and causing psychological pain.

Lakshmi elopes, first with a lorry driver and subsequently with Manickam, the philandering son of Periyannan's antagonist, Kangani. Every time Lakshmi elopes with someone to get free of Periyannan, his incarceration, aggressive behaviour, and sexual assault worsen once she returns. Periyannan's self-esteem deteriorates. Instead of releasing her from the living agreement, he boosts security to keep her imprisoned. In certain ways, Lakshmi's independence from a luxury enjoyed by the concubine but forbidden to a wife in a conventional culture is barely accessible to her. The points of intersection that intrude on Lakshmi and Anandhayi's life are scarcely discernible. They are enslaved, abused, and imprisoned. Because Periyannan is wealthy, he is unconcerned about Lakshmi's lower-caste family. He hurls a bag of money bills at her father and returns Lakshmi to his house. As parenthood binds Anandhayi and prevents her from ever committing, Lakshmi is constrained by the rigidity of her sexual identity. As a concubine, she must put up with any techniques her lord uses to get her pleasure.

Not only does Periyannan harass Lakshmi, but all the female members of his family are as well. Lakshmi's (as a concubine) and Anandhayi's (as an authorized wife) lifestyles are barely identifiable. Periyannan subjugates, assaults, and imprisons them. As parenthood binds Anandhayi and prevents her from committing suicide, Lakshmi is constrained by the rigidity of her sexual identity. He treats Anandhayi like a maid and refuses to pay her any money, not even for her costs. When he discovers that her kid, "Kala," is learning to cycle, he beats up Anandhayi instead of Kala. Sivakami says:

As soon as Periyannan entered, he grabbed Anandhayi by her bun and dragged her. "Oh my God, what did I do?" "Get up, you bitch, bloody pimp!" "Hey, tell me what I did before you slap me around. I warn you." "Oh, now you are warning me, is it?" He picked up the grass broom lying on the ground and went at her. "Aiyyo, he is hitting me! He is the one who has sluts all over the town, and he dares to call me a pimp!" (83)

Gendered geographical divisions affect Dalit women and Dalit girls. Dalit males impose stringent gender roles on their wives within the Dalit society. Dalit men clearly control the outside or public area, but Dalit girls and women are confined inside, that is, within the four walls of the house or, worse, the kitchen. Dalit males gain authority over their spouses and ensure their subjugation by confining Dalit women to the private realm. As a result, the Dalit woman's intimate life becomes a site of oppression. (Jayakumar, 6680)

Sivakami depicts female characters whose social identities are defined by their sexual position inside the family system. Sivakami's selected works investigated the predicament of a woman forced to become a second wife, or worse, called a concubine. In either situation, the lady remains outside the family's center. She remains an outsider who is never embraced by the patriarch's family or relatives who have welcomed her into their fold. The males

choose to "possess" a concubine or two in order to demonstrate their "masculinity," to give a "lesson" to their legally wedded wife, or simply because they yearn for women, whether in the rural, agrarian environment of *The Taming of Women* or elsewhere. Women—wives, daughters, mothers, and beloveds—are subjected to unrestrained violence and discrimination inside the home area that has historically been recognized as a woman's domain. As a result, people look for deliverance outside of their conventional positions.

3. CONCLUSION

Surveillance of women is maintained not just by male counterparts but also by female peers. Disciplinary authority is an administering master gaze, and it can duplicate a comparable genetic carrier in women's psyches to appropriate and execute the same male gaze. *The Taming of Women* by Sivakami depicts women's adoption of masculine ideas and their contribution to the plight of other women. Individual Dalit women are coerced into retrying norms, first set by their instant male counterparts, then monitored by matriarchs and co-women within their community, and finally from the higher mainstream, which prescribes a delimiting socio-moral limit sanctioned by an existing abrasive and older cultural genealogy. This triangulation of adherence, accountability (based on reward in the form of societal acceptance and punishment in the form of violent ostracization), and repetitive operability of disciplinary order loops into multiple discursive areas that anchor its power by developing a strong through queasy subjection to benign, and more often malign, modes of obedience. In *The Joys of Motherhood,* women are subjugated using the hierarchy set by men in the family. Hence, they are sidelined by the rules set by men, which in turn affects the range of actions of women.

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Assessment of Cumulative Effect of Modified Atmosphere Packaging, Packaging Material and Chemical Treatments on Post-Harvest Life of Button Mushroom (*Agaricus Bisporus*)

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ABSTRACT

Due to increasing numbers of vegans and vegetarians globally all around the world is shooting up demands for food items derived from plant sources like, mushrooms, which not only very delicious in taste but also good source of protein and other minerals. The post-harvest shelf life of button mushroom is nearly 1-3 days at ambient temperature and 8–10 days under low temperature storage. For improving shelf life of button mushroom, we have combined Modified Atmosphere Packaging (MAP) with different chemical treatments and packaging material which leads to successful increment in its shelf life up to 12-14 days. Button mushrooms were treated with $CaCl_2$, citric acid, and sorbitol and packed under three MAP air composition (MAP_1: 6%O_2, 12%CO_2; MAP_2: 12%O_2, 6%CO_2; MAP_3: 20.95% O_2, 0.04% CO_2) then packed under two different Packaging Materials PM_1 (Polyamide 20µm-Polyethylene 70µm) and PM_2: (Polyamide 40µm-Polyethylene 120µm) and stored at 8°C. Packaging material with higher thickness showed beneficial effects on ascorbic acid content, protein content, electrolyte leakage rate as it had less gas permeability and less water vapour transmission rate of 1.5 g m^{-2} day^{-1}. Packaging button mushrooms in thin films causes outer air to accumulate inside packed samples and causes its fast browning and degradation.

Keywords: Button Mushroom, Packaging material, modified atmosphere packaging

1. Introduction

Cultivated white button mushroom can be considered as important food source globally all around the world. The increased button mushrooms production and advances in post-harvest technology has resulted in high demands for safe and good quality button mushrooms. Button mushrooms are heterotrophic fungi that grew on dead and degraded organic matter (**Ban *et al.*, 2023**). Changing the head space gas concentration in polyethylene packages are considered as important tool for enhancing shelf life and maintaining market value. Types of packaging material, initial gas composition and the interaction between mushroom respiratory rates and gas permeation determines the equilibrium gas concentration in the packages (**Srivastava *et al*, 2020**).High CO_2 concentration in combination with low Oxygen concentration shows enhanced shelf life due to low respiratory rates. CO_2 and O_2 concentration are very difficult to maintain because of high gas permeability values of packaging material.

2. Purpose of research

Fresh button mushrooms are bright white in colour, firm and can easily be chewed. But during long term storage these parameters undergo very rapid change leading to quality deterioration (**Kumar *et al.*, 2014**). Deterioration of button mushrooms are mainly due to browning of button mushroom, stipe elongation, cap opening, water loss which ultimately leads to spongy texture (**Jiang *et al.*, 2012**). Button mushrooms have a very short post-harvest shelf life and are very sensitive to browning mechanical damage. This perishable nature of button mushroom can cause severe problem in enlarging the market anf long- distance transport.

3. Research Gap

The post-harvest shelf life of button mushroom is nearly 1-3 days at ambient temperature and 8–10 days under low temperature storage**.** Packaging material proves to be very importance aspects in quality control of the mushroom. Carbon dioxide and oxygen gas permeability rate and water vapour transmission rate are the most effective parameters for selection of packaging material. Permeability of gases is the important factor for determination of atmosphere around the product.

4. Methodology

Button mushroom has been widely produced and consumed globally all around over the world. Button mushroom are perishable in nature and its commercial value continues to degrade after harvest due to water loss, browning and microbial attack. Button mushroom were obtained from Department of Plant Pathology and Mycology, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi in the morning hours. Matured button mushroom which were physically free from any injury were sorted and selected for the experiment. Fresh and uninjured button mushrooms were taken to the Centre of Food Science and Technology, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi.

Mushroom that are free from injury were selected, washed and dried followed by different three chemical treatments i.e.

C_1: 2.5% $CaCl_2$; C_2: 2.5% $CaCl_2$, 3% citric acid, 0.1% sorbitol; C_3: Blanched at 50ºC

Sample size : 40g.

MAP treatments: We had given three MAP treatments i.e.

M_1: 12% CO_2, 6% O_2; M_2: 6% CO_2, 12% O_2; M_3: 0.04% CO_2, 20.95% O_2 (Control)

After providing with different MAP treatments, the button mushroom air tight packets were stored at 8ºC in two different packaging material.

PM_1: Packaging Material 1: Polyamide 20μm-Polyethylene 70μm with EVA (Ethylene- vinyl acetate sealant layer)

PM_2: Packaging Material 2: Polyamide 40μm- Polyethylene 120μm with EVA (Ethylene- vinyl acetate sealant layer)

4.1 Head Space Gas Analysis

Head space gas composition is the concentration of the air left inside the packets after storage period. The head space gas analysis were measured by gas analyzer (MAP Mix 9001 ME, PBI Dansensor, Ringsted, Denmark). Air composition inside packets was expressed in percentage.

4.2 Electrolyte Leakage Rate

cell membrane permeability can be assessed by Electrolyte leakage rate (**Kaya et al., 2002).** Fruiting bodies of button mushroom were sliced into discs of 3mm thick, 3mm diameter and of around 5 grams. These discs were then immersed in 50 ml of distilled water for 1 hour for removing all the dirt and surface contamination. Then they were removed and further immersed in 50 ml distilled water and followed by incubation at ambient temperature of 20 ± 3^0C. Electrolyte conductivity was measured after 3 hour and after boiling for 30 minutes with the help of conductivity meter (DDB-303A, Leici Instrument Co., Shanghai, China).

4.3 Ascorbic Acid /Vitamin C Content

The Vitamin C or ascorbic acid content in button mushroom was determined by volumetric method (**Harris and Ray, 1935).**

   I.   Ascorbic acid standard: Weigh accurately 100 mg of L-ascorbic acid and make up to 100 ml with 3% HPO_3, solution.
   II. 2, 6-di-chlorophenol indophenol dye solution: Dissolve 42 mg of sodium carbonate in small amount of distilled water to which add 52 mg of 2,6-di-chlorophenol indophenol and make volume up to 200ml.
   III. Standardization of dye: Pipette out 5 ml ofthe standard ascorbic acid solution into a 100 ml conical flask and add5 ml of the 3% HPO_3, solution. Fill the microburette with the dye solution. Titrate theascorbic acid solution with the dye solution to a pink colour, which should persist for 15sec. Note the Titre value. Find the dye factor.
   IV. Dye factor: 0.5/Titrate value.

Button mushrooms were dried in microwave oven, grinded into powder form in mixer grinder and a sample of 2g was taken and dissolved in 3 % HPO_3 and volume was made up to 100ml followed by centrifugation at 2000g for 15 minutes. Add 5 ml of supernatant into 10 ml of 3% of HPO_3 and titrated against the dye (V_2 in ml). The initial and final volume of the dye solution was noted on appearance of the pink colour for each sample. The amount of Vitamin C or ascorbic acid in mg/g sample was calculated by formula:

$$\frac{Dye\ factor\ \times\ V_2 \times\ 10000}{V_1 \times W}$$

Where W is the weight of sample taken.

V_1 is the sample of extract taken.

V_2 is the required dye solution for titration.

4.4 Protein Content

Protein content in button mushroom was determined with the help of Bradford method (**Bradford, 1976).** An amount of 1g of button mushroom samples were taken and were sliced into small pieces with blade and grinded in mortar and pestle with 5ml of phosphate buffer (pH 7.6). Then extract was taken for centrifugation which was at 8000rpm for 20 minutes. Supernatant was collected in different test tubes and made equal by adding phosphate buffer followed by storage under refrigeration at 4ºC for further analysis. Out of mushroom extract 40μl of different mushroom samples were taken out in different test tubes and mixed with 260μl of phosphate buffer separately. 3 ml of Coomassive Brilliant Blue solution was added and mixed properly. All the test tubes were incubated for 5 minutes at room temperature and absorbance was taken at 595nm by spectrophotometer.

4.5 Total Polyphenol Content (TPC) and Free Radical Scavenging Activity (RSA)

Total polyphenol content was measured by method described by **Chirinang and Intarapichet, 2009.** For determination of polyphenol contents in button mushroom samples firstly button mushrooms were air dried in oven at 65°C overnight. Dried button mushrooms were taken and followed by grinding into fine powder. Dried mushroom powder (1g) were taken and mixed with 15ml of distilled water followed by keeping it on shaker incubator at room temperature (37°C) at 150 rpm for 24 hours. Samples were taken out from incubator filtered and were centrifuged at 2000 rpm for 15 minutes in centrifuge tube. Total phenolic compounds of mushroom's extract was found by using Folin-Ciocalteu reagent. An aliquot of 100μL (1:5 dilution) was added to 100μl of Folin–Ciocalteu reagent (1:1 dilution with distilled water) and add 2ml of 10% sodium carbonate solution followed by incubating it for 30 minutes at room temperature.

Extract prepared for finding total phenolic compounds can be used for finding the radical scavenging activity. Different concentration (0.05-1.0) of button mushroom extract were mixed with 2.0ml of 100μM DPPH (2,2-diphenyl-1-picrylhydrazyl) in methanol in different test tubes. The test tubes were shaken properly for proper mixing and keep it in dark for 30minutes. The samples were taken for the centrifugation at 5000rpm for 15 minutes. The absorbance was taken at 515nm with the help of spectrophotometer.

5. Analysis & Discussion

For head space gas composition, O_2 concentration continuously decreases with time and CO_2 concentration increases with time **(Antmann *et al.*, 2008)** as shown in Table no.1 Drastic changes have been reported in atmosphere surrounding button mushrooms were due to higher consumption rates of O_2 and production of CO_2 as by-product of respiration.**(Jafri *et al.*, 2013)**.

Packaging of button mushrooms in two types of films shows significant results in case of electrolyte leakage rate, ascorbic acid content, protein content, total phenolic content and radical scavenging activity. PM_2:(Polyamide 40μm-Polyethylene 120μm) depicted beneficial effects on these parameters as compared to PM_1: (Polyamide 20μm-Polyethylene 70μm) as it had less gas permeability and less water vapour transmission rate of 1.5 g m^{-2} day^{-1}. Thin films causes outer air to accumulate inside packed samples and causes its fast browning and degradation. There is steady decline in ascorbic acid content with storage period. Lowest ascorbic acid content was observed after 12 days in PM1 in C3M3 (Table 1). Ascorbic acid oxidase oxidizes ascorbic acid to dehydroascorbic acid (DHA) and DHA reductase reduces dehydroascorbic acid (DHA) to ascorbic acid as this reaction is reversible. So formation of dehydroascorbic acid (DHA) does not indicate complete loss of ascorbic acid but if DHA is further converted to diketogulonic acid (DKA) then it indicates complete loss of ascorbic acid as this reaction is irreversible in nature. DHA formation increases with time and temperature and higher oxygen concentration **(Arumuganathan *et al.*, 2012)**.

Total phenolic compounds are mainly responsible for antioxidant activity which continuously decreases with storage period. Compounds like BHT (butylated hydroxytoluene) and Gallic acid are directly correlated with total polyphenols. Total phenolic compounds are directly linked with the radical scavenging activity of the button mushrooms. Radical scavenging activity continuously declined with storage time (Table 2). It was noted that decline in ascorbic acid content, total phenol content and radical scavenging activity followed same pattern with the storage time, indicating radical scavenging activity is dependent on both ascorbic acid content and phenol content **(Utto *et al.*, 2013)**. **Jiang *et al.*, 2012** also reported decrease in radical scavenging activity of fresh commodity with the storage time. Among the chemical treatments C_2: 2.5% $CaCl_2$, 3% citric acid, 0.1% sorbitol depicted better performance as compared to C_1: 2.5% $CaCl_2$ and blanched samples. Controlled samples resulted into more tissue exudation and browning that could be main reason for degradation of tissue. This also demonstrated the role of sorbitol and $CaCl_2$ as water holding and tissue firming agents **(Singh *et al.*, 2018)**.

6. Conclusion

Most commonly used films in MAP is low and high density polyethylene (PE), Polystyrene (PS), Polypropylene (PP) and Polyvinyl chloride. The shelf-life of button mushrooms can be increased and their qualitative and biochemical characteristics can be best preserved by package in high density packaging material 2: Polyamide 40μm- Polyethylene 120μm with EVA (Ethylene- vinyl acetate sealant layer) and with MAP treatment: 2.5% $CaCl_2$, 3% citric acid, 0.1% sorbitol up to 12 days.

The films and MAP had a significant effect on color and weight loss of the mush-rooms. In the case of texture, the gas composition alone exerts a significant effect. The optimal conditions for prolonging the shelf life of mushrooms were found for packaging with medium oxygen level and film of higher permeability. In optimal conditions, mushrooms were characterized by lightness of 93 and 85, and a browning index of 11 and 23 in 0 and 14 days of storage, respectively

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Table 1. Effect of Modified Atmosphere Packaging , packaging material and Chemical treatments on Head Space gas composition (Percentage oxygen concentration), Electrolyte leakage (%), Ascorbic acid content of button mushroom.

Chemical and MAP treatments			C_1M_1	C_1M_2	C_1M_3	C_2M_1	C_2M_2	C_2M_3	C_3M_1	C_3M_2	C_3M_3	Mean
Head space gas composition (percentage oxygen concentration)	4 Days	PM_1	1.98	7.59	15.31	2.80	8.47	15.34	2.10	5.45	11.8	**7.87**
		PM_2	2.22	7.52	15.12	2.70	8.32	15.22	2.02	5.28	11.36	**7.75**
	8 Days	PM_1	0.67	3.47	6.84	0.53	3.52	6.14	0.28	2.11	4.48	**3.12**
		PM_2	0.53	3.27	6.28	0.25	3.47	6.00	0.23	1.90	4.23	**2.91**
	12 Days	PM_1	0.05	0.32	1.23	0.11	0.03	1.57	ND	0.05	1.03	**0.49**
		PM_2	0.02	0.17	1.12	0.03	ND	1.27	ND	ND	0.88	**0.39**
Electrolyte leakage (%)	4 Days	PM_1	4.44	4.74	5.07	4.35	5.14	5.32	5.21	5.60	5.77	**5.07**
		PM_2	4.33	4.56	4.90	4.27	5.13	5.27	5.03	5.48	5.49	**4.94**
	8 Days	PM_1	6.84	7.01	7.42	6.44	8.36	8.63	7.22	8.34	8.73	**7.66**
		PM_2	6.60	6.91	7.29	6.34	8.23	8.48	7.16	8.22	8.33	**7.51**
	12 Days	PM_1	9.94	11.16	12.23	9.51	11.49	11.64	11.25	15.53	17.34	**12.23**
		PM_2	9.82	10.98	11.69	9.74	11.45	11.43	11.13	15.02	17.13	**12.04**
Ascorbic acid content (mg/100g)	4 Days	PM_1	8.84	8.67	8.45	8.86	8.43	8.15	8.64	8.01	7.90	**8.44**
		PM_2	8.66	8.92	8.15	8.81	8.31	8.19	8.45	7.93	7.83	**8.36**
	8 Days	PM_1	8.44	8.31	7.59	8.15	8.17	7.51	8.02	7.61	6.27	**7.78**
		PM_2	8.54	8.38	8.02	8.47	8.27	7.51	8.19	7.79	6.32	**7.94**
	12 Days	PM_1	7.32	7.38	7.13	7.69	7.03	6.35	6.67	6.34	5.63	**6.84**
		PM_2	7.86	7.48	7.14	7.71	7.20	6.59	6.63	6.45	5.71	**6.98**

Table. Effect of Modified Atmosphere Packaging, packaging material and Chemical treatments on Soluble protein content , total phenolic compounds, and radical Scavenging activity of button mushroom.

Synthesis of opposites in Bhabani Bhattacharya's *Music for mohini*

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Music for Mohini is the second novel of Bhabani Bhattacharya. The novel shows that Indian society is just like a melting-pot due to contrary ideologies and puts forward the view that a synthesis between the conflicting ideas, ideals, values, beliefs, tradition and modernity can lead to a happy and healthy life.

The novel depicts two sets of characters: first, those who uphold the old, established values of the past and secondly, those who advocate for a change and deviation from the dead past in favour of the new and unconventional value-pattern that suits the modern age. Bhabani Bhattacharya juxtaposes different antagonistic characters in order to bring out their ideological conflict, and then finally leads them towards a reconciliation so as to create harmony in social life.

In the earlier part of the novel, as the story unfolds itself at Mohini's parental home, her father, the Professor, is shown in conflict with Old Mother. Mohini's father is a highly educated and modern-minded man. He gets his daughter, Mohini, admitted to a Christian convent school, and also allows her to become a radio singer. He does not see any harm in Mohini's songs being recorded and sold in open market. But his mother—Old Mother—is very much opposed to this wide publicity of his grand daughter. The old lady does not like her son's ideas, which appear odd to her. When he does not pay attention to her, she threatens to renounce the world. Though there is a truce for the time being, but the real crisis occurs on the question of Mohini's marriage. As the Professor is a man of modern ideas, he naturally wants to marry his daughter to an educated, urban-bred and cultured boy. He finds a bright young man, good-mannered, gracious and courteous. The Professor appreciates the boy wholeheartedly, and agrees to marry Mohini to him. But Old Mother does not like the match at all. There ensues a conflict in the family. Bhattacharya describes the discord as follows: "His voice was joyous and proud. "Mother, we've found the right match for our girl. Look up the almanac for an auspicious day."
"No, childing, "She shook her head with quite decision. "He is not the right sort for our
Mohini." *(Music For Mohini*, p.44)
The difference between the mother and the son are, however, soon after resolved when Jayadev appears on the scene and is found to be the most suitable groom for Mohini. Mohini herself accepts him not only by the Professor and Old Mother, but also as he combines in him the traditional as well as the modern values in being both a great scholar and master of Behula village.The Professor also synthesizes the old and the modern values in his character. He knows very well that the path of compromise is the better one, and that one cannot always do without the old values of life. When with the old lady's help, Mohini's marriage is settled with Jayadev, the Professor gratefully acknowledges: "The old customs and conventions are not too unsound." *(Music For Mohini*, p.55)

Even the Old Mother is not very rigid in her attitude towards modern values. The novelist observes that Old Mother has compromised with modernity and is of the old and of the new. Bringing this fact to light, Bhattacharya remarks:"Every Sunday evening the family went to the cinema, often an Indian film, though Old Mother, with all her orthodox heart, enjoyed English pictures as well–the "shadow–show" was to her mind a wonder of wonders, the supreme achievement of the Western people." *(Music For Mohini*, p.30)

Mohini is happily married to Jayadev and comes to Behula as the new mistress of the Big House. Here she again encounters the old values personified in her mother-in-law. She is a beautiful girl who likes all the good things of life. She judges the world around her in terms of aesthetic values. Her heart is full of love for her husband, and she wants to be admired and loved by him in turn. Jayadev, who is a visionary and an idealist, expects his wife to be different from an ordinary young woman with basic physical needs. He sees her as "Gargi" or "Maitreyi", and no household drudge, nor a decorative being, but an intellectual, striding beside man in a tireless quest for knowledge. Mohini also knows that her married life can be peaceful and meaningful only if she adjusts herself to the wishes of her husband, shares his ideals and renders him positive help in his programme of social re-construction.

Besides Jayadev, Mohini has to adjust herself to the obsolete ideas and superstitious beliefs of her stubborn mother-in-law too. Mohini is aware of the fact that she will have to adjust herself to a great extent to the traditional life-pattern of the Big House.

At first Mohini finds life at the Big House almost unbearable. As she has been brought up in an altogether different type of environment, she has to struggle hard to retouch her mental values, readjust her expectations before she is able to accommodate herself comfortably at Behula. Her Mother-in Law tells her that modern songs make no sense and that she should sing only religious songs. Thus there is no end to prohibitions and restraints on Mohini. Subdued by these prohibitions, Mohini strives hard to adjust to the old ways and modes of life in the rural society and in this process she, too, changes unawares. Bhattacharya affirms: "Yes, the young mistress of the Big House took deeper colour from her new life everyday. Slowly she fitted herself to the rural design. Her sprightliness, her quick girlish laugh, she easily subdued. The mother was a ruthless teacher." *(Music For Mohini*, p.130)

Owing to her mother-in-law's sternness and old-world spirit, Mohini sometimes feels sore about her behaviour, but with the passage of time she begins to realize that the Mother is not completely devoid of the basic human qualities.

Gradually, the struggle between the contrasting values that is so intense and fierce in the beginning becomes less and less severe, and resolves finally into a happy compromise. Both Mohini and her mother-in-law, representing the modern and the traditional values respectively, begin to understand each other better and live amiably.

It is not that Bhattacharya always makes his younger characters submit before the aged ones in his bid to present the mutual adjustment. He makes his old characters also realize in their turn genuine demands of the new age. Jayadev's mother, too, begins to feel that her son is right and justified in his ideas and actions, and that the values to which she rigidly adheres count no more in the modern times. The only possible way to end all discord in life seems to her in a compromise between her old beliefs and the new values of life upheld by her son and daughter-in-law. She and Jayadev have previously been in constant conflict with each other because of their contrasting ideas and outlooks. But soon the mother realizes that her son's path is the right one.

The synthesis of the old and the new values is also evident in the story of Harindra's family. Harindra's father, the old Kaviraj, has been practising the ancient Indian Ayurvedic system of medicine for over forty years. He considers this medical system very efficacious as a cure for all sorts of diseases. But his son, Harindra, is a full-fledged surgeon, educated and trained in a Western-style medical college. Often he argues with his father that his rigid ideas about the supremacy of the Ayurvedic medical system over all the others are false and funny. He pleads with the old man that modern medicines are more effective in curing disease. But the old man openly ridicules his son and his ideas. However, later he recognizes the efficacy of the modern Allopathic medical system when he fails to cure his ailing wife.

Jayadev, the chief protagonist in the novel, believes in the integration of the traditional and the modern values. Jayadev embodies in his character the best of the Indian and the Western values. He is deeply devoted to the task of creating a harmony between the Oriental and the Occidental value-pattern. He dreams about a fusion of the past with the present. It is his earnest wish to create a profound union of today with yesterday. He wants to reshape the Indian society, but also recognizes the significant role of the ancient lore in the whole process of social reconstruction. He emphasizes: "Look back that you may look forward. Look to the roots of India in this fateful hour of flowering. Use the buried material of the past to write the new social charter." *(Music For Mohini*, p.68)

Being village-bred and city-wed, Rooplekha, a promising young girl combines in her character the traditional and the modern values. When Mohini doubts the possibility of the fusion of the city and the village, representing the modern and the traditional value-patterns respectively, Rooplekha emphatically remarks that such a union is worthwhile. Thus Bhabani Bhattacharya quite successfully synthesizes various contrary values and forces in *Music For Mohini* and holds a plea that such a fusionis the need of the hour in every sphere of life.

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Portrayal of the Predicament of Individual and Society in *so many hungers!* of Bhabani Bhattacharya

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Bhattacharya's first novel *So Many Hungers* paints a moving account of the plight, sufferings and hardships of Bengal during the dark war years when man made famine stalked through the land and millions died of starvation. It highlights the dehumanizing effects of poverty, starvation and corrupting influence of man's lust for flesh and money, which debase humanity. At the same time, it shows the exploitation of peasants and of moral degradation of the rich landlords and the capitalists and human suffering. It presents man's desire for possession, which degrades him to unimaginable depths. K.R.S. Iyengar rightly remarks in this connection: "The novel really unfolds the story of a largely man-made hunger that took a toll of two million innocent men, women and children in Calcutta and Bengal." (*Indian Writing in English*, p.412)

The novel depicts the miserable life of Baruni (an Indian village in Kolkata) and gives us a clear idea of poverty and suffering of the people. Devata tells Rahoul that at Baruni village, out of a hundred householders, a quarter own land on lease from the zamindar; another quarter are landless kisans – peasant – labourers – who work for others for a day–wage and meals; and the rest are fishermen or have some other kind of occupation. Thereupon Rahoul observes that an Indian's daily income is less than two annas, though it appears incredible. This prompts Devata to give a realistic picture of poverty in Indian villages. He opines "… Facts never tell much unless they are seen in terms of human experience. On his petty income, the landed peasants can have just enough of his own rice to eat, no reserve for lean days. And the kisans – they must always be hungry, save for a spell of two or three months in the year, when they earn meals and a wage for field–work. The hundred million kisans of India must always be hungry. It is a rare gracious day to have the stomach full." (*So Many Hungers!,* p.22)

In different episodes, the novel deals exclusively with criminal and morally wrong sinful practices like greed and exploitation due to which human beings suffer. It shows cruel and merciless exploiters of mankind who are possessed with insatiable greed and are incessantly busy in growing wealthier at the cost of the poor. They do not have any goodness of heart and are worse than animals. They befool and suppress poor and downtrodden for their gain with clever tricks and lies. Kanu, a young peasant lad, exposes the truth about them while talking to a fisherman.

In the novel, Bhabani presents a profound concern for the eradication of dire issues like prostitution which is a curse on our society. Through the character of Kajoli he tries to show that human chastity, probity and dignity are above all superficial comforts and luxuries of life. This is apparent from an incident where a betel women (a prostitute) tries to tempt Kajoli to join the hell of prostitution because of her poverty which Kajoli rejects altogether. The novelist comments: "Then Kajoli knew that the woman was truly a jackal emissary. She shuddered and kept away from her. The persistent woman pursued her into the alley. Seventy rupees in advance – a fortune! Why, that carcass of a fellow might even part with ten more if properly squeezed between the jaws of a 'No' and a 'Yes'! Why rot in this hell from which there was no other way of escape? Why put up with this living death?" (*So Many Hungers!,* p.74)

Bhabani Bhattacharya rejects violation of any kind. He believes that lust and violation of chastity are evils which degrade human dignity and crush morality. He discards heinous and nefarious actions as animal passions which hinder human progress to an unfortunate extent. He pathetically narrates the situation where Kajoli is brutally raped by a soldier. Kajoli is going to Calcutta due to poverty and starvation. She hopes to earn her livelihood there. In the way, because of extreme hunger, she takes the food from a soldier who comes across. All of a sudden the soldier clutches her arm and violates her chastity. The novelist describes this inhumanity and cruelty of the soldier as follows: "The soldier's grip tightened round her thin upper arm. He pulled and led her away from the road down the wet sloping grass to the meadow….."(*So Many Hungers!,* p.198)

Bhabani presents Kajoli's family which experiences a lot of sufferings on the way to Calcutta. Kajoli and her family members come across famished skeletons groaning in pain while jackals crouch and eat their bodies. Vultures circle over the dead bodies and make a prey of human flesh. At times hungry people eat what animals refuse to take. These sufferings are the result of cruelty of the rich people. Man himself is responsible for this misery. Bhattacharya comments on the causes of this poetry: "The empty stomach was due to no plight of nature, no failure of crops, Rahoul knew. It was man-made scarcity, for the harvest had been fair… But there was no

rationing. Forty thousand country boats were wantonly destroyed. Many villages evacuated. The uprooted people pauperized. Nothing was left to the foundation of life." (*So Many Hungers!,* p.32)

Bhabani is a great literary artist who has firm faith in human greatness, goodness and virtues. In spite of all dark aspects and scenes there are unique incidents which present characters like Devata, Rahoul and Kajoli who not only oppose negative and sinful forces but also assist people to overcome them. These characters in the novel always seem to be ready to share the burden of the poor, hungry and downtrodden. In crises, they help destitutes. Bhabani Bhattacharya is a visionary who believes that human potentiality can eradicate all evil forces to establish a better society to live in and provide an opportunity to every individual to overcome all issues and challenges.

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A Study on Human Capital Development on Firm Performance

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Abstract

Human capital is obtaining wider attention with increasing globalization and additionally the saturation of the task market because of the recent worsening within the numerous economies of the globe. Developed and developing countries place emphasis on an additional human capital development towards fast the economic process by devoting necessary time and efforts. Thus human capital development is one in all the basic solutions to enter the international arena. Specifically, corporations should invest necessary resources in developing human capital that tends to possess a good impact on performance. This paper examines the extent to that human capitals have direct impacts on firm performance from numerous important views. Firm performance is viewed in terms of economic and non-financial performance. Finally, this paper develops a model that explains the connection between human capital and firm performance.

Keywords: Human capital, firm performance and workforce

1. Introduction

In the current world market, firms are composed of competitors, despite trade. To develop a competitive advantage, it's necessary that companies really leverage on the hands as a competitive weapon. A strategy for up hands productivity to drive higher prices for the companies has become a very important focus. Firms look to optimize their hands through comprehensive human capital development programs not solely to attain business goals however most vital is for a protracted-term survival and property. To accomplish this endeavor, firms will need to invest resources to ensure that employees have the knowledge, skills, and competencies they need to work effectively in a rapidly changing and complex environment. In response to the changes, most firms have embraced the notion of human capital has a good competitive advantage that will enhance higher performance. Human capital development becomes a vicinity of AN overall effort to attain cost-efficient and firm performance. Hence, companies ought to perceive human capital that might enhance worker satisfaction and improve performance. This literature-based paper begins by shaping the ideas of human capital and firm performance. It then explores the human capital theory and affiliation between human capital and firm performance. In the final section, we tend to develop the model and conclude the importance of human capital as a pillar in the future analysis of firm performance.

2. Definition of Human Capital and Firm Performance

To sustain aggressiveness within the organization human capital becomes Associate in Nursing instrument wont to increase productivity. Human capitals ask processes that relate to coaching, education and alternative skilled initiatives so as to extend the degree of data, skills, abilities, values, and social assets of an employee which will lead to the employee's satisfaction and performance, and eventually on a firm performance. Rastogi (2000) explicit that human capital is a crucial input for organizations particularly for employees' continuous improvement in the main on data, skills, and abilities. The perpetually ever-changing business surroundings needs corporations to attempt for superior competitive blessings via dynamic business plans that incorporate creative thinking and originality. This is essentially important for their long term sustainability. Undoubtedly, human resource input plays a significant role in enhancing firms' competitiveness (Barney, 1995). At a look, substantial studies were carried out on human capital and their implications on firm performance were widely covered and obviously, human capital enhancement will result in greater competitiveness and performance (Agarwala, 2003; Guthrie et al., 2002). Meantime, there's a major relationship between originality and firm performance underneath the human capital philosophy (Lumpkin &Dess, 2005).

3. Human Capital Theory

The theory of human capital is frozen from the sector of economic science development theory (Schultz, 1993). Becker's (1993) classic book, Human Capital: A Theoretical and Empirical Analysis with special relevance education, illustrates this domain. Becker argues that there square measure totally different types of capitals that embrace schooling, a laptop coaching course, expenditures on treatment. And actually, lectures on the virtues of timing and honesty square measure capital too. In the true sense, they improve health, raise earnings, or increase a person's appreciation of literature over a lifespan. Consequently, it's absolutely to keep with the capital concept as historically outlined to mention that expenditures on education, training, and treatment, etc., square measure investment in capital. These don't seem to be merely prices however investment with valuable returns will be calculated.

4.   The Relationship between Human Capital and Firm Performance:

Human capital focuses on 2 main elements that are people and organizations. This concept has any been delineated by Garavan et al., (2001) that human capitals have four key attributes as follows: (1) flexibility and adaptableness (2) sweetening of individual competencies (3) the event of structure competencies and (4) individual employability. It shows that these attributes successively generate add values to individual and structure outcomes. Their area unit varied findings that incorporate human capital with higher performance and property competitive advantage (Noudhaug, 1998); higher structure commitment (Iles et al., 1990); and enhanced organizational retention (Robertson et al., 1991). Hence, all these debates fundamentally focuses on individual and organizational performance.

From the individual level, Collis and Montgomery (1995) suggest that the importance of human capital depends on the degree to that it contributes to the creation of competitive advantage. From associate degree economic purpose of reading, transaction-costs indicate that firm gains a competitive advantage after they own firm-specific resources which will not be derived by rivals. Thus, because the individuality of human capital will increase, firm has incentives to take position resources into its management and also the aim to cut back risks and exploit productive potentials. Hence, people have to be compelled to enhance their ability skills so as to be competitive in their organizations. The human capital theory has undergone a speedy development. Within its development, greater attention has been paid to training-related aspects. This is much related to the individual perspective. Human capital investment is any activity that improves the standard (productivity) of the employee. Therefore, coaching is a vital element of human capital investment. This refers to the knowledge and training required and undergone by a person that increases his or her capabilities in performing activities of economic values.

Conceptual Model

The purpose of this study is to develop a model to point out the connection between human capital and firm performance. As argued within the earlier discussions, the overall human capital investment includes coaching, education, knowledge, and skills that may enhance human capital effectiveness. Based on the literature reviews, it is therefore postulated that human capital leads to greater firm performance. Firm performance can be viewed from two different perspectives; financial performance and non-financial performance. Financial performance includes productivity, market share, and profitability, whereas, the non-financial performance includes customer satisfaction, innovation, workflow improvement, and skills development.

5.   Conclusion

This paper explored the present literature on human capital and its impact on firm performance. The conceptualization of human capital is closely linked to some fundamentals of economics and firm performance. The literature reviews show that there is reasonably strong evidence to show that the infusion of 'human capital enhancement' in organizations promotes innovativeness and greater firm performance. Studies also clearly substantiate the fact that financial performance is positively impacted through the consideration of human capital. In light-weight of this, the understanding of firm performance in relation to human capitals should not be regarded as a phenomenon that only adds 'more zeros' in a firm's profits; it is rather transforming the entire workforce as the most 'valuable assets' in order for the organization to pave ways for greater achievements via innovativeness and creativity. Hence, corporations ought to, therefore, come up with some effective plans especially in investing the various aspects of human capital as not only does it direct firms to attain greater Performance however conjointly it ensures companies to stay competitive for his or her long run survival.

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Portrayal of Class Struggle, Poverty in Aravind Adiga's *The White Tiger* Through The Lens of Class Consciousness

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Abstract

'The White Tiger' is a debut novel by Aravind Adiga. This novel is the recipient of Man Booker prize in 2008. It is a masterpiece which portraits socio-economic condition of contemporary India. Adiga has tried to depict two sides of India. India of darkness and light. He speaks of various sections of Indian society belonging to poor community who are exploited and humiliated. Through the protagonist of this novel Balram Halwai, he has depicted the class struggle, poverty and social discrimination. This struggle is longing from many epochs in various forms. Balram Halwai tries to break the chains of slavery. This novel exposes how people of lower strata are maltreated by the greed of higher-class people. I therefore through this paper wants to explore Class Consciousness in Adiga's novel '*The White Tiger'*.

Keywords: class struggle, freedom, exploitation, slavery, class consciousness

Introduction

Struggles are result of class conflicts. These conflicts result in protest, violence and revolution. In Indian society dispute arises because of social economic competition. Our society is divided into two sections rich and poor. Karl Marx had denoted the two classes into the proletariat and the bourgeoisie. Both the classes act in opposition against each other, creating class conflicts. According to Marx society is divided into two classes which are against each. They are the bourgeoisie and the proletariat. If we see back and turn the pages of history, history itself speaks about class struggle. As stated in '*Communist Manifesto'* "The history of all hitherto existing society is the history of class struggle." (31). Marx has analysed society in terms of struggle between oppressed and oppressor.

Adiga was influenced by the Victorian author Charles Dickens who emphasizes on weaker sections and contributed a lot in creating awareness in the society. Similarly, Adiga also wants to write about India and wants to see an improved India.

Due to class struggle, society enters into another state of struggle. Marx has asserted various stages like Primitive Communism where no competition and no class conflicts with limited sources. Next stage is Slavery, which denotes the conflict between masters and slaves. Feudalism, this is the social system took the shape of conflict between lords and vassals at medieval age. Capitalism, another phase of economic system based on the private ownership where owners exploit the labour force and take the undue advantages from them. This system is totally based on biasness, poor begets richness through their labour force and rich begets poverty by exploiting and providing social injustice. Communism is this system holding totalitarian system of government with classless society.

Karl Marx gave the theory Marxism. Along with his friend and philosopher Friedrich Engels wrote '*Communist Manifesto'* which was published in 1848. Marxism was against capitalist society as it does not provide equal opportunities.

The concept of class consciousness was also developed during 19th century. It means to create awareness of social and economic conditions and also becoming aware that they are being exploited.

Balram Halwai, the protagonist of this novel lives in a village named Laxmangarh in Gaya. He belongs to marginalised community who has to toil hard to live his livelihood and deprived of basic rights too. Balram's father who is a rickshaw puller had a hope to get a better life but died due to ignorance of corrupt medical officers. He wanted his son to study and move away from this trench as many fathers like him had spent their whole life like donkeys. He was also aware that consciousness can only bring revolution in their lives. It is like quagmire where poor once entangled will never come out. Balram wanted to break the fetters of slavery.

Since childhood Balram was an intelligent boy. Due to his brainy mind, education officer named him White Tiger and encouraged to study. But the poverty has snatched his hope. To earn his livelihood, he started working with his brother at tea stall. He usually eavesdrops on the talks of customers aiming to gain knowledge and information about the society. He aimed to remove poverty to lead a better life. Balram believes that education can illuminate the pit of darkness where poor is continuously trenching since ages.

Later, Balram learnt driving and got a job at the Stork's house in Delhi where Mr. Ashok was his master. Balram was appointed as the driver but he was asked to do other menial jobs too, as he belongs to the poor community. This shows how bourgeoisies treat proletariats. They treat lower ones disgracefully and are humiliated and discriminated. Capitalist society has brought inequality in society, depriving human rights. Here people are exploited to produce more money. Workers has to work for their survival at meagre low wages which is insufficient to fulfil their basic needs. In the name of job workers live the traumatic life like hell with no fixed working hours, no insured life and worst environment. Adiga has observed people in India and has talked about universal reality between haves and have-nots. He has also shown the darker side of India, where people are

deprived of their basic needs and system is mingled with different evils like corruption, unemployment, bribing, and various malpractices which dominates the society. The novel attacks various evils practised in India. Through his character Balram, Adiga has shown the journey from adversity to prosperity.

Adiga has portrait his keen observation by pointing cuts and whips on the body of poor which is an identity to a poor. Balram witness the orthodoxy and stubbornness of the class-based society. He finds poor ones are exploited in the name of all means of preserving society like religion, class, caste, tradition and many more. By using the term rooster coop, he has described situation of unprivileged ones. He has also discussed about their helplessness and slavery which is like blood running in their nerves that cannot be separated.

Like other servants, Balram also gets the chance to show his loyalty towards his master by accepting the crime and putting himself behind the bars. His master's wife Pinky in drunken state, runs over a child with her car. Balram was asked to accept the Pinky's crime of run and hit case. This incident reflects dominance of upper ones towards their subordinates. *'Communist Manifesto'* by Marx states that bourgeoisie is not fit to be the ruling class in the society as this class has drowned proletariats into deep trench. People of upper strata will adopt any means to suppress lower ones. In this novel Balram became victim of the ruling class. He was forced to accept the corrupt ways of life, which is well depicted from Balram's statement "I was corrupted from the sweet innocent village fool into the citified fellow full of the debauchery, depravity and wickedness." (Adiga 167)

On one side where Balram is trying to improve his condition but unplanned darker part has overshadowed him. Balram through his letter to Chinese premier had declared that "I cannot live the rest of my life in a cage." (Adiga 278). He, unlike others refuses to surrender and stoo firm to fight for his better life against social injustice and poverty. Due to injustice done, a rage of anger burst and he chose to kill his master Ashok and ran away with his money to Bangalore. He accepts the challenge to break the social bondage and wanted to escape from the suppression of this society. Our social system and their remorseful practices have made him rebellious and compelled him commit heinous crime.

Balram, justified himself by murdering tyranny in form of Ashok because his fight against exploitation by the wealthy. He finally, escape from rooster coop and got a better improved life in Bangalore by becoming self-entrepreneur. This was the struggle of a poor villager to reach the higher social status. *'Communist Manifesto'* by Marx states that bourgeoisie is not fit to be the ruling class in the society as this class has drowned proletariats into deep trench.

Conclusion

Adiga in his novel *'The White Tiger'* has highlighted social and economic issues. These issues are bothering each one of us present in the Indian society. This is also hindering our development. According to him it is a high time now to take serious and immediate steps to tackle, before it becomes giant and cannot be destroyed. This novel is the portrayal of social disparity between rich and poor by considering social structure where upper dominates lower ones. People should gain class consciousness to uproot this system. Adiga has shown his protagonist becoming successful in liberating himself from the social constraints.

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Application of Artificial Intelligence in Education: Advantages and Disadvantages

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Abstract

One of the most advanced technologies that can now change every aspect of our social connections is artificial intelligence. AI in education has started to develop innovative teaching and learning techniques that are currently being evaluated in various settings. This paper review a brief introduction to AI and its framework, the impact of AI on teaching and learning is examined in the light of a literature review,this has the potential to enhance both the effectiveness of teachers' instruction and the quality of students' learning. The advantages and disadvantages of AI in education are then discussed. Finally, it gives a brief overview of challenges that future uses of AI in education can encounter and offers resources for using AI to support educational reform.

Key Words- Application, Artificial Intelligence, Education, Advantages, Disadvantages

Introduction

One of the pillars of human progress, education is constantly evolving to satisfy demands of a changing environment. Education is not an exception in the digital age, when technology influences every part of our life. Artificial intelligence, which has already started to change the educational environment by opening up new opportunities for learning, teaching, and research, is a revolutionary force in many fields. As AI develops at an unprecedented rate, its incorporation into education has the potential to completely transform how knowledge is transmitted and gained.

Singh and Jain (2018) writes "The term Artificial Intelligence or AI was coined by John McCarthy in 1956,two years after the untimely death of Alan Turing, who came to be known as the father of AI. In 1950, at a time when the first general purpose computers were being built, Turing was already grappling with the question "Can machines think?" He developed a hypothetical machine, called a Turing machine, for encrypting codes built to test and defines Machine Intelligence and thus refers to computer programs that exhibit human-like intelligence such as logical reasoning, problem solving and learning". It should be emphasized that within the above outlined paradigm, AI systems have changed over time. Reviewing the development of AI systems historically reveals that they seem to have followed a different path, one that has been propelled by algorithm and technological advancement. (Singh and Jain,2018) .

Framework for Artificial Intelligence

The following structure for AI is suggested by Singh and Jain (2018) and includes the following components. Which are:

• Perception - The capacity to gather knowledge about the natural world via the use of language and sensory systems.

• Problem analysis - The capacity to process the information acquired from the sources mentioned above in order to recognize a problem, examine it, and propose a solution.

• Abstract knowledge – the capacity to transfer knowledge gained via perception in one area to another.

• Experiential learning - The capacity to continuously gather knowledge and perception-enhancing lessons from real-world data patterns. The term "artificial intelligence" (AI) refers to systems that make predictions about future events based on learning from vast amounts of past data. It is necessary to examine various digital transformations in the education sector holistically. These include blockchain, virtual reality, movies, and augmented reality. It is important to take advantage of digital technologies like AI to assist teachers in delivering instruction (Sarkar, 2018) [3].

Impact on Teaching and learning

The widespread use of AI in education has demonstrated significant application benefits, which have a significant impact on the delivery of instruction and classroom management (Chassignol, Khoroshavin, Klimova, & Bilyatdinova, 2018; Roll & Wylie, 2016).

Teachers understand the importance of artificial intelligence. Artificial intelligence is highly helpful to the professional growth of teachers, according to 52.1% of teachers. Artificial intelligence, according to 32.3% of teachers, is more beneficial to their professional development. Artificial intelligence is recognized by 12.5% of teachers. (Yajing Xue and colleagues,2022)

AI systems provide excellent support for online learning and teaching by personalizing learning for students, automating everyday tasks for instructors, and powering adaptive evaluations. (Kyoungwon Seo and colleagues, 2021)

AI technology is evolving quickly with current science and technology. As a result of the study findings in related domains, AI has been further applied to the field of education and has demonstrated positive application impacts that have helped to transform teaching.

The application of AI in the field of education has realized the full integration of teaching and learning, and also provided an opportunity for the reform of teaching and learning.
AI simulates human listening (machine translation, speech recognition) (Delić et al., 2019), speaking (speech synthesis, human-computer dialogue) (Chiba, Nose, Kase, Yamanaka, & Ito, 2019), watching (computer vision, image recognition, text recognition) (Paglen, 2019), thinking (Theorem Proving) (Sarma & Hay, 2017), learning (machine learning, intelligent adaptive learning) (Colchester et al., 2017) and action (robot) (Khandelwal et al., 2017). Particularly, artificial intelligence (AI) technologies like computer vision, natural language processing, and intelligent adaptive learning have altered traditional education and teaching (Yufei, Saleh, Jiahui, & Abdullah, 2020) and given universities and educators new concepts for reshaping the classroom.

One of the benefits of AI in education is that it helps to advance individualized instruction and learning. The way pupils learn and how teachers educate have both been impacted by AI. To assist students increase their capacity and effectiveness as learners, it can create a tailored learning plan based on their needs and current learning scenario (Dishon, 2017), offer an immersive learning environment (Ip et al., 2019), and implement intelligent learning tracking. According to Bingham, Pane, Steiner, and Hamilton (2018), AI can evaluate student performance in-depth on a daily basis and during tests using big data and machine learning. This can reduce students' learning time (Quer, Muse, Nikzad, Topol, & Steinhubl, 2017) and increase learning effectiveness (Kong et al., 2019). Personalized one-on-one instruction between computers and students can be implemented with the aid of adaptive learning technologies. According to Kakish and Pollacia (2018), intelligent adaptive learning technology is a type of AI education technology that simulates the one-on-one teaching method used by teachers to instruct pupils. The 1990s marked the beginning of adaptive education in the United States.

Excellent adaptive education businesses with a focus on higher education include Knewton (Conklin, 2016), Cognitive Tutor (Elazhary & Khodeir, 2017), among others. China's adaptive education development began later than it did in the United States, and the technology is not as advanced. It has only recently experienced a tremendous growth. Companies that excel at intelligent adaptive education, such New Oriental and Yixue Education-Squirrel AI (Knox, 2020), concentrate on K12 tutoring and English tutoring in their educational offerings. Another benefit of AI in education is that it can lighten the load on instructors and help them concentrate more on providing humanistic care.

Correcting homework assignments and exam papers takes up a large portion of instructors' time today. Teachers' research and teaching time, as well as their time with students, are taken up by these repetitious tasks. Intelligent tutor systems (Holstein, McLaren, & Aleven, 2017), intelligent assessment systems (CUI & LI, 2019), educational robots (Chevalier, Riedo, & Mondada, 2016) and other AIs can help teachers solve many mechanically repeated daily tasks, such as correcting homework and correcting test papers, alleviating the pressure of teachers in various tasks, and freeing teachers from heavy knowledge transfer.
According to Du, Meng, and Gao (2016), the third benefit of AI in education is that it encourages the development of smart campuses. AI technology has altered conventional educational and instructional practices. Technical support for the development of smart campuses is provided by face recognition, text recognition, human body recognition, voice interaction, augmented reality, and other AI technologies (Kwet & Prinsloo, 2020).
 teachers a higher-quality teaching and learning experience, and reducing management costs. There are a large number of students living in the student hostel, and the management staff cannot fully identifsuspicious outsiders and improve the safety of the student hostel. In the classroom, through AI

The issue of teachers being unable to correct homework that students submitted from various subject areas is resolved at the same time by intelligent homework correction carried out through AI (Azad, Chen, Fowler, West, & Zilles, 2020). Additionally, it enables teachers in remote locations to concentrate more on students' ability development, intelligent adaptive learning, and tailored instruction.

Advantages of AI in Education
Nowadays, young people frequently use their cellphones or tablets. This gives students the chance to use AI applications to study for 10 to fifteen minutes in their free time. As AI becomes more powerful, the computer can now analyze a student's facial expressions or hand motions using gesture recognition technology, allowing it to determine whether the student is having trouble understanding the lecture and adjust the lesson accordingly.

Machines driven by AI are capable of customizing the academic curriculum. With the use of AI tools, worldwide classrooms can accommodate students who have hearing or vision impairments. Students who are ill

and unable to attend class can also benefit from this. Additionally, it aids in providing advice on how to close learning gaps.

People who speak different languages or have hearing or vision issues can access a variety of resources thanks to AI. The AI-based system application Presentation Translator delivers subtitles in real-time mode. Students can read and hear in their native language, for instance, with the aid of Google Translate.

Modern technologies like VR and gamification are useful for more participatory meetings. There are now improvements in the direction of utilizing computers to grade written type answers, such as paragraphs and assertions. There were already several settings where multiple-choice tests were graded through machines. As a result, a teacher's job is made simpler, there is no time wasted, and the time saved can be used to focus more on the development and assessment of each individual student.

Students can be divided into groups by AI that are most suited for specific assignments. Adaptive group formation is the term for this. Software using artificial intelligence that can evaluate student essays right away. These essays are added to a central database, and the database's prior essays can be used to compare future articles. A computer-based technique called artificial intelligence in education offers individualized, flexible, and perceptive instruction.

The Domain Knowledge model, which gives the system the ability to finish tasks that encourage students to judge and contribute to the solution, is one of the major components of the AIED system. The learner is represented by the student model in terms of their evolving knowledge and abilities. Finally, the Interface component offers the channel via which the learner and the system communicate. The Model of Pedagogy component depicts the teaching capability of the system.

Voice Assistant is the second aspect of AI that is very beneficial in teaching. This is a ground-breaking use of AI. This includes the Google Assistant, Microsoft's Cortana, Apple's Siri, and Amazon's Alexa.

Disadvantages of AI in Education

Despite the enormous opportunities AI presents, there may also be some possible hazards. AI has the potential to be the best or worst for humanity. The development of AI applications in higher education has new ethical concerns and risks that could help teaching and learning. One such instance is when administrators may consider replacing teaching with profitable automated AI solutions due to the continuing corona virus outbreak and budget cuts. As the use of AI in education grows, there is a possibility that students will become more dependent on technology and that personal relationships would decline. Sometimes, this will be detrimental to students' learning rather than beneficial. The faculty members, student counsellors, teaching assistants and administrative staff might get feared that the Intelligent Tutor System which is application of AI might replace them.

A lot of data, including sensitive information about students and staff, is needed for AI systems, which raises severe privacy concerns. AI is very expensive when compared to the price of installation, maintenance, and repair. Only institutions of higher learning with substantial funding can allow themselves to use such advanced technologies. When this technology is overused, it might lead to a lack of interpersonal relationships, which could be detrimental to the users. We are unable to determine the exact amount of data lost when an AI requires repair due to an accident or other unforeseen event.

Challenges of AI in Education

The study by Celik et al. (2022) indicated a number of drawbacks and difficulties for teachers using AI, including its limited reliability, technical capability, and applicability in many contexts. AI-based systems only use a small variety of techniques and data channels. It appears that AI-based educational systems underutilize the potential of multimodal data. While diverse data modalities can increase opportunities to study teaching and learning processes, the majority of AI apps used by instructors exclusively make use of self-reported and/or observational data (Järvelä & Bannert, 2021).

The ever-widening algorithmic divide now threatens the loss of many educational opportunities given by AI, much as the digital divide has divided those who can access the Internet from those who cannot. The majority of AI algorithms originate from developed nations, thus they are unable to completely consider the circumstances of developing nations and hence cannot be directly implemented (Yu, 2020).

To establish the necessary conditions for AI to enhance learning, the education industry must overcome severe challenges like a lack of foundational infrastructure and technology. Second, we must be aware of the safety and ethical concerns connected to data collection, use, and dissemination. In terms of giving pupils individualized advise, gathering personal data, data privacy, and the ownership of duties and data feed algorithms, AI has created several ethical difficulties (Bodó et al., 2017; Southgate, 2020). The public needs to talk about the ethics, responsibility, and safety issues related to strengthening the regulation of AI technology and its products.

The demands on students' capacity for independent learning have increased as a result of changes in learning approaches. Students will be at the center of learning in the age of AI, and they will hold a

disproportionate amount of power in educational activities (Chang & Lu, 2019; Fu, 2020). Students can develop personalized learning plans, independently select learning resources, set up learning progressions, and participate in cooperative group learning based on the intelligent teaching system. (Walkington & Bernacki, 2020; Yilmaz, 2018; Fang et al., 2019). According to Bergamin and Hirt (2018) and Tseng, Yi, and Yeh (2019), individualized learning approaches place more demands on students' capacity for self-regulation and self-management. As a result, teachers must focus on encouraging independent learning in their pupils throughout the instructional process. student-to-student communication requires more focus. The difficulty with a student's social communication abilities will arise when more and more students use AI platforms for learning and communicate with machines as their object of conversation. Students should encourage collaborative learning. In short, with the in-depth development of economic and technological globalization, the important role of AI technology in education has become increasingly prominent. In the process of building the innovation educational ecosystem, schools, teachers, and students are facing various challenges and problems brought by AI. To solve these problems and realize the perfect connection between AI technology and education, teachers,students, and other education ecosystems members need to work together.

Conclusion

AI is a significant advancement in education. The next level applications of artificial intelligence in education have not yet been developed, according to a research published by the Centre for Integrative Research in Computer and Learning Sciences. Therefore, those developing AI applications should thoroughly inform educators and decision-makers in the field of education. Although there are certain drawbacks to adopting AI in the educational sector, this is the technology of the future, thus educational institutions should start exposing their pupils to it. The effects of AI will be felt initially at the lowest levels of education and progressively progress to higher education. It will take some time before it is apparent how AI will affect education in the long term. AI's primary goal is to facilitate educators' work, not to take their position.

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Learning, Unlearning and Relearning: A dynamic process of knowledge management under different development stages

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Abstract

The objective of this study is to investigate the dynamic process of knowledge management from the viewpoints of learning, unlearning and relearning which are aimed at fostering an environment that is conducive at different developmental stages. The model is provided on the basis of an exhaustive examination of the relevant literature. The concept proposes that the evolutions of learning, unlearning and relearning be investigated separately, and that the relationships among them are shown. The findings indicate that the components that are essential to the dynamic management of knowledge are learning, unlearning and relearning. Unlearning has a positive impact on dynamic knowledge management because it involves the elimination of knowledge that is no longer relevant or useful. On the other hand, relearning has a positive impact on dynamic knowledge management because it involves the acquisition of new information at all the stages of life. Limitations and implications of the research: This work provides a theoretical illumination of the linkages in learning, unlearning, organizational relearning, and knowledge management; however, it does not provide an empirical test for these interactions.

Keywords: Learning, Relearning and Unlearning

1. Concept of Learning

Education is a continuous endeavor, and individuals can participate in learning activities at various points in their lives. The approaches and incentives for acquiring knowledge can differ based on one's age, living circumstances, and individual aspirations. (Lave, 2009)

1.1 Factors that drive individuals to engage in learning activities at various stages:

- Curiosity: Innate longing for acquiring knowledge and comprehending.
- Career Advancement: Obtaining skills that are pertinent to one's occupation.
- Personal Development: Enhancing one's own abilities and qualities for personal fulfilment.
- Adaptation: Acquiring the ability to deal with alterations and obstacles in life.
- Social Connection: Engaging in collective activities and communal learning experiences.

Learning is a fluid process that develops in conjunction with one's age and life circumstances. The search of knowledge endures as a constant throughout life, despite the potential variations in motivations and means.

2. Concept of Unlearning

Unlearning refers to the deliberate process of relinquishing previously acquired knowledge, beliefs, or habits to provide space for the assimilation of new ideas and viewpoints. Adaptability is a vital component of personal and professional growth, enabling individuals to adjust to evolving situations and embrace new perspectives (Tlostanova, 2020). Unlearning can take place at many periods of life, and this is how it may emerge at various points:

2.1 Reasons for engaging in the process of unlearning vary depending on the different stages of development or learning.

- Personal Growth: To transcend constraints and embrace self-improvement.
- Adaptation: The process of modifying oneself or one's actions in order to remain pertinent and efficient in a dynamic and evolving setting.
- Open-mindedness: The willingness to embrace novel ideas and different viewpoints.
- Crisis or Change: Frequently instigated by momentous life events or transitions.
- Self-reflection refers to the intentional process of examining and reassessing one's own beliefs and assumptions.

2.2 Challenges of Unlearning:

- Cognitive Dissonance: The process of unlearning might cause discomfort as it challenges one's established ideas.
- Emotional Attachment: Individuals may develop a strong emotional bond to their preexisting ideas or behaviors.

- Fear of the Unknown: The lack of confidence regarding what follows the process of unlearning can be intimidating.
- Unlearning is a continuous process that necessitates receptiveness, introspection, and a readiness to question one's own presumptions. Adapting to the ever-evolving nature of life is a highly valuable ability.

3.   Concept of Relearning

Relearning is the process of acquiring knowledge or abilities that one has previously gained but may have lost or needs to refresh. Relearning can be carried out in a variety of ways. The information that was previously learned or performed is revisited and reviewed as part of this process (Attig, 2001). There are many different circumstances in which relearning is frequently required, including schooling, professional development, and personal development or growth. The process of relearning is a dynamic one that develops during the various stages of development that a person goes through in their lifetime. It is possible for the approaches, motivations, and difficulties that are connected with relearning to change based on the various stages of growth.

3.1 Features of Relearning

- Improvements in Retention which involved repeating of information that has been learned in the past helps to strengthen brain pathways, which in turn makes it simpler to recall and apply information.
- Relearning acts as a reinforcer as the process of relearning entails practicing and perfecting talents that may have grown rusty over time and occurs frequently in fields such as the study of musical instruments, the acquisition of a language, and athletics.
- Adaptation to Changes as in fields that are undergoing rapid change, professionals may be required to participate in constant learning and relearning in order to maintain their knowledge of the most recent information, technology, and processes.
- For individuals to be able to adjust to changes in their job paths or to explore new possibilities, it may be necessary for them to relearn or acquire new abilities. This is especially important in light of the dynamic nature of the employment market today.
- Relearning is an essential component of learning that continues throughout one's life. It is a manifestation of the realization that education is not the only means of learning; rather, learning is a process that occurs continuously throughout one's life.
- The ability to adjust to new information and circumstances is referred to as cognitive flexibility, and acceptance of relearning helps to improve this ability. When it comes to problem-solving and decision-making, this flexibility is really beneficial.

3.2. Effective way for relearning

rereading notes, textbooks, or online resources; taking part in refresher courses or workshops; seeking mentorship; and actively practicing skills. Recognizing relearning as a chance for personal and professional development rather than a setback is essential, and it is very important to adopt a positive attitude toward the process of relearning.

4.   Developmental Stages of Human Being

Human developmental stages encompass the distinct periods of bodily, intellectual, societal, and emotional advancement and maturity that individuals experience from birth to old age. (Havinghurst, 1948) These stages are commonly classified into separate epochs, each distinguished by certain milestones and challenges. Below is a comprehensive summary of the standard progression of developmental stages:

- Early childhood (0-2 years) includes Swift physiological maturation, encompassing motor abilities, development of initial bonds with primary caregivers, commencement of language acquisition, environmental exploration.
- Preschool Age (2-6 years) includes Enhancement of both fine and gross motor skills, Linguistic growth and broadening of lexicon, Development of one's self-identity, Enhancement of interpersonal abilities and engagement with peers.
- Middle childhood (6 to 12 years) includes enhancement of fine motor abilities and coordination, enhancement of cognitive abilities, such as the capacity for logical reasoning and the ability to solve problems, development of a perception of productivity and proficiency, enhancement of social growth through interpersonal connections with peers. (Fanos, 1997)
- Adolescence (12 to 18 years) includes physiological development, advancement of conceptual thinking and logical deduction, development of one's identity and self-perception, investigation on the concepts of independence and autonomy, formation of moral and ethical principles.

- Young adulthood (18-40 years) includes formation of individual and occupational identity, engagement in the acquisition of knowledge, professional endeavors, and interpersonal connections, establishment of close interpersonal connections and creation of familial units, advancement of autonomy and self-reliance.
- Middle adulthood (40 to 65 years) includes concentrate on professional progression and familial obligations, contemplation over decisions made in life and achievements attained, Age-related physiological changes, Shift to novel positions and duties.
- Old age (65+ years) incudes adapting to retirement and the possibility of losing loved ones, contemplation of existence and enduring impact, possible deterioration in bodily well-being and cognitive faculties, adjustment to evolving societal responsibilities, possible involvement in recreational and social activities.

It is crucial to acknowledge that these stages are broad categorizations, and individual growth can exhibit significant variations. Furthermore, theories such as Erik Erikson's psychosocial phases and Jean Piaget's cognitive development stages offer more precise frameworks for comprehending development within each stage. The progression of various stages in an individual's life is shaped by biological, psychological, and environmental elements.

5. Process of Learning, Unlearning and Relearning under different developmental stages

Stages of Life	Learning	Unlearning	Relearning
Early Childhood (0-6 years)	**Informal Learning:** Children acquire knowledge and skills via engaging in play, exploring their surroundings, and observing their environment. (Macnamara, 1972) **Formal Education:** Preschool and kindergarten provide a foundation by introducing fundamental concepts through organized activities.	**Socialization:** During this stage, children may need to modify certain behaviors acquired in their early years as they acquire knowledge of social standards and appropriate behavior.	**Establishing a Supporting Foundation:** During the early years of development, relearning frequently involves the reinforcement of core skills which includes majorly the acquisition of language, motor skills, and social behaviors. (Cornel, 1979) Playing in a repetitive manner allows children to review previously learned concepts and skills, which is beneficial to both their **cognitive and physical development.**
Childhood (6-12 years)	Primary Education: During this stage, formal learning becomes more organized and systematic, with an emphasis on developing fundamental abilities such as literacy, writing, and numeracy. Inquisitiveness and Investigation: Children possess an innate curiosity and acquire knowledge through interactive encounters. (Hartley, 2009)	Evolving Perspectives: As children mature and are exposed to a wider array of experiences, they may need to discard simplistic viewpoints and cultivate a more sophisticated comprehension of the world.	Relearning is a process that involves **reviewing and reinforcing** academic subjects as children advance through their schooling. For the purpose of enhancing their comprehension, students routinely review subjects in the areas of mathematics, language, and science. **Abilities to Study:** Relearning typically entails refining study abilities, time management methods, and organizational structures.
Adolescence (12 to 18 years)	Students undergo secondary education. This level of education, commonly known as high school, offers a more comprehensive knowledge of several disciplines and	Individuals may encounter the need to challenge and overcome prejudices and biases that were learned during childhood. This period presents an opportunity for adolescents to explore and embrace a	Individuals may begin to specialize in particular subjects or areas of interest during the adolescent years. This phenomenon is known as subject specialization. Relearning entails **developing a more in-depth understanding**

	enables students to focus on certain areas of interest. • Extracurricular Activities: Students engage in activities that are not part of the regular curriculum in order to explore their interests.	more inclusive perspective of the world. (Mio and Brenner, 2023)	of these particular subjects. (Musselman et al., 2016) Exam preparation is an important feature of relearning. Common practices include going over content from prior years and becoming proficient in more complex subjects.
Young Adulthood (18-30 years)	• Higher Education: Pursuing a college degree or occupational training provides individuals with specific knowledge. Career Development: Learning frequently focuses on acquiring skills relevant to a selected occupation. (Salji, 1990)	Reevaluating Career Objectives: During this stage, young individuals may need to modify or discard their career objectives due to evolving interests, values, or economic circumstances.	Relearning takes on a more independent and self-directed aspect in higher education, which is a transition that occurs during the young adulthood stage. It is common for students to return and further develop their comprehension of difficult subjects within the fields that they have chosen. The process of relearning encompasses not only the acquisition of academic knowledge but also the development of practical skills that are essential for both professional and personal achievement.
Adulthood (30 – 65 years)	Professional Development: Engaging in ongoing education, attending workshops, and participating in conferences enable individuals to remain up-to-date in their respective industries. Personal Growth: Learning include activities such as pursuing hobbies, acquiring new languages, or developing other abilities that contribute to personal enrichment.	Technological Adaptation: During this stage, adults may be required to discard outdated technologies and approaches in order to remain competitive in the job market or adjust to evolving communication tools.	Professional Development: Relearning is sometimes prompted by the requirement to adjust to changes in the workplace among those who are in the middle of their professional lives. It is possible for professionals to get new skills, improve upon the ones they already have, or continue their education. The process of relearning typically entails adjusting to new technology developments. This is because individuals in the middle of their adult lives may be required to keep up with the latest tools and systems.
Middle Age (40-65 years)	Career Transitions: During this stage, individuals may need to learn new skills in order to successfully transition to a different career. Lifelong Learning: The continuous pursuit of information for personal fulfillment and maintaining cognitive engagement.	Parenting Strategies Adaptation: As children mature, parents may need to abandon certain parenting techniques that are no more efficient or suitable for their children's age and requirements.	Later Adulthood: Learning That Lasts a Lifetime Beginning in later adulthood, the emphasis switches to learning that lasts a lifetime. The process of relearning becomes a means of preserving cognitive function, remaining engaged, and following personal interests. Memory Improvement: Relearning may incorporate measures to improve memory, such as mnemonic devices or

			cognitive exercises, because memory function may diminish with age. Memory enhancement may be a part of relearning.
Retirement and Older Age (65+ years):	Participating in activities for enjoyment and personal fulfillment, such as reading, painting, or playing musical instruments. Digital Literacy: Acquiring the skills to effectively utilize technology for communicating and accessing information.	Adjusting to Health Changes: Older adults may need to abandon certain lifestyle behaviors and adopt new health-related practices in order to maintain their well-being.	The Years Following Retirement: Hobbies and Leisure Activities: A source of satisfaction and fulfillment during retirement can be found in the process of relearning. People might try out new hobbies, artistic endeavors, or intellectual pursuits, or they might revisit old ones. Relearning in later life requires adapting to changing conditions, such as societal upheavals, health issues, and new technology. This is referred to as "adapting to change."
During the entire course of one's life:	Informal Learning: Learning takes place through everyday experiences, interactions, and exposure to novel concepts. Adaptive Learning: The ability to adjust and respond to evolving technologies and societal advancements. (Kim and Merriam, 2004)	Individuals may be required to abandon cultural biases or assumptions and conform to changing societal standards and ideals.	After gaining an understanding of the specific components of relearning that are associated with each developmental stage, it becomes easier to adjust educational approaches and strategies to effectively fulfill the requirements and objectives of individuals at various stages of their lives.

The process of learning, unlearning, and relearning can be likened to reinstalling the operating system of a device when the previous version becomes outdated or corrupted. Understanding the definitions of learn, unlearn, and relearn enables one to venture outside their comfort zone and embrace novel approaches to remain pertinent. Acquiring, discarding, and acquiring knowledge again is essential in the contemporary professional's life. Through the process of unlearning and relearning, we can enhance our abilities and enhance our understanding in order to adapt to the swiftly evolving world.

6. Conclusion

The dynamics of work processes and technology are perpetually advancing. By relinquishing traditional patterns, we enhance our professional expertise. Nevertheless, the capacity to unlearn and relearn is a challenging task as it necessitates the abandonment of previously acquired knowledge.

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Role of Government Officials and Politicians in the Development of a Nation

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Abstract

The study explores the critical role of government officials and politicians in the development of a nation. It delves into their multifaceted responsibilities, spanning economic governance, social welfare, and political leadership. Government officials, as custodians of public service, translate policies into tangible initiatives, while politicians, as elected representatives, shape legislative frameworks. The interplay between these roles influences economic stability, social justice, and democratic principles. The discussion also highlights challenges such as balancing economic development with environmental concerns and the importance of inclusive governance. Overall, the study emphasizes the collaborative efforts of government officials and politicians in fostering a holistic approach to nation-building.

Keywords: Nation, Development, Government Officials, Politicians, People Welfare

1. Introduction

Government officials and politicians play a pivotal role in shaping the present and future trajectory of a country. Their influence extends across various spheres, encompassing economic, social, and political dimensions that collectively contribute to the growth and progress of a nation. The interplay between policymakers, elected representatives, and public administrators creates the foundation upon which the development of a nation rests. Government officials, including bureaucrats and administrators, are the custodians of public service and administration. They are tasked with translating policy decisions into actionable initiatives that can drive tangible outcomes for citizens. From crafting effective public policies to executing development programs, the role of government officials is dynamic and multifaceted. These individuals are responsible for ensuring the efficient functioning of public institutions, fostering a conducive environment for economic activities, and addressing the needs of diverse societal segments.

Politicians, on the other hand, are the architects of legislative frameworks and governance structures. Elected representatives wield the power to shape laws and policies that underpin the socio-economic fabric of a nation. Their decisions influence resource allocation, public welfare programs, and the overall direction of the country. The political landscape serves as the arena where ideologies are debated, compromises are struck, and decisions are made that can profoundly impact the lives of citizens. One of the fundamental responsibilities of government officials and politicians is economic governance. Through the formulation and implementation of economic policies, they steer the nation's economic course, striving to achieve stability, growth, and equitable distribution of resources. The decisions made in this realm directly influence factors such as employment rates, inflation, and the overall standard of living. Sound economic governance is essential for attracting investments, fostering entrepreneurship, and creating an environment conducive to sustainable development.

Moreover, the social fabric of a nation is intricately woven through policies and initiatives championed by government officials and politicians. They are instrumental in addressing issues of social justice, education, healthcare, and poverty alleviation. Through the development and execution of social welfare programs, they seek to uplift marginalized communities and bridge societal gaps, fostering an inclusive and harmonious society. In the political arena, the decisions made by politicians shape the governance structures and democratic processes of a nation. The commitment to democratic principles, the rule of law, and transparency are vital elements that underpin a healthy and thriving democracy. Government officials, as stewards of public resources, are accountable for ensuring the judicious use of power and resources, thereby upholding the trust bestowed upon them by the electorate. The role of government officials and politicians in the development of a nation is expansive and nuanced. Their decisions and actions reverberate through the socio-economic and political landscape, influencing the lives of millions. As custodians of public interest, they bear the responsibility of steering the nation towards progress, fostering a sustainable and inclusive environment that empowers citizens and ensures the well-being of

the collective. This exploration into their roles sets the stage for a comprehensive analysis of the myriad ways in which government officials and politicians contribute to the development of a nation.

2. Statement of the Problem

In the wake of global environmental concerns and the imperative for sustainable development, the effective implementation of environmental sustainability practices in urban settings emerges as a critical challenge. Urbanization, characterized by rapid population growth and increased industrialization, has led to a surge in environmental stressors, including pollution, resource depletion, and habitat destruction. While the need for sustainable practices is widely acknowledged, the translation of this awareness into actionable strategies faces a myriad of obstacles, hindering the realization of comprehensive environmental sustainability in urban areas. The primary challenges are the conflict between economic development goals and environmental preservation imperatives. Urban centers, often seen as engines of economic growth, face the dilemma of balancing the demands of industrial expansion and infrastructure development with the imperative to mitigate environmental impact. The pursuit of short-term economic gains can lead to unsustainable practices, such as unchecked industrial emissions, deforestation, and inadequate waste management, exacerbating the ecological footprint of urban areas.

Furthermore, a lack of cohesive and integrated urban planning poses a significant obstacle to the effective implementation of sustainability initiatives. Urban landscapes are often characterized by fragmented governance structures, where different agencies are responsible for distinct aspects of city development. This fragmentation hinders the formulation of comprehensive and coordinated strategies, impeding the ability to address environmental challenges in a holistic manner. The absence of synergy among various stakeholders, including municipal authorities, environmental agencies, and private entities, contributes to the disjointed implementation of sustainability measures. The inadequate awareness and engagement of urban residents also pose a notable challenge. While environmental consciousness is on the rise globally, there remains a gap in translating this awareness into meaningful actions at the individual and community levels. Education and outreach programs aimed at fostering environmental stewardship are often limited or ineffective, leading to a lack of understanding among urban residents regarding the consequences of their daily activities on the local environment. Without a sense of collective responsibility and active participation from the community, the successful execution of sustainability initiatives becomes an uphill battle.

Moreover, the variability in the capacity and resources of different urban centers poses a challenge to the universality of sustainability measures. Smaller municipalities or those in developing regions may lack the financial resources, technical expertise, and institutional support necessary for the successful implementation of robust sustainability practices. This inequality in capability amplifies environmental disparities, potentially leading to the exacerbation of environmental challenges in already vulnerable communities. The effective implementation of environmental sustainability practices in urban settings faces a multifaceted problem landscape. The tension between economic development and environmental preservation, fragmented governance structures, limited public awareness and engagement, and disparities in urban capacities collectively contribute to the complex challenge of fostering sustainable urban environments. Addressing these issues requires a comprehensive understanding of the interconnected nature of the problems at hand and the development of innovative, inclusive strategies that can pave the way for a harmonious coexistence of urban development and environmental sustainability.

3. People Welfare in the Responsibilities of Government Officials and Politicians

The welfare of the people serves as the linchpin for the responsibilities shouldered by government officials and politicians. Their roles extend far beyond the corridors of power, reaching into the daily lives of citizens, and the commitment to people welfare is a fundamental tenet that underlies the essence of public service. This study delves into the crucial importance of people welfare in the responsibilities of government officials and politicians, exploring the various dimensions that define this commitment. At the heart of the matter lies the duty of government officials and politicians to ensure the well-being of the populace. This encompasses a broad spectrum of concerns, ranging from access to quality healthcare and education to the provision of basic amenities such as clean water, sanitation, and housing. The effectiveness of governance is measured not merely by economic indicators but by the tangible improvements in the standard of living and the overall welfare of the citizens.

Government officials, as administrators and executors of policy, are tasked with translating political decisions into concrete actions that directly impact the lives of people. Their responsibilities include the development and implementation of social welfare programs aimed at addressing issues such as poverty, unemployment, and inequality. The creation of a robust social safety net is integral to mitigating the adverse

effects of economic fluctuations and ensuring that no segment of society is left behind (Keating and Jan Germen, 2016). Politicians, being elected representatives, bear the responsibility of being the voice of the people in legislative forums. Crafting and advocating for policies that safeguard the rights and interests of citizens are inherent to their role. This involves not only addressing immediate concerns but also envisioning long-term strategies that foster sustainable development, creating an environment where the benefits of progress are equitably distributed.

In the realm of healthcare, government officials and politicians play a critical role in establishing and maintaining healthcare systems that are accessible, affordable, and of high quality. The provision of adequate medical facilities, preventive healthcare programs, and initiatives to address public health challenges are essential components of their responsibilities. A healthy population is not only a fundamental human right but also a prerequisite for a productive and thriving society. Education stands as another cornerstone of people welfare, and government officials and politicians are entrusted with the task of ensuring universal access to quality education. The formulation of education policies, allocation of resources, and the establishment of institutions that cater to the diverse needs of the population contribute to fostering an informed and empowered citizenry. Education is the key that unlocks opportunities, and its accessibility is paramount in breaking the cycle of poverty and promoting social mobility.

Beyond the tangible aspects of welfare, there is an inherent responsibility for government officials and politicians to foster an inclusive and just society. This involves addressing issues of discrimination, promoting social cohesion, and safeguarding the rights of minority groups. Legislation and policies that uphold principles of justice, equality, and human rights are essential tools in the hands of politicians to create a society that values the dignity of every individual. The commitment to people welfare is the cornerstone of the responsibilities shouldered by government officials and politicians. The effectiveness of governance is measured by the tangible improvements in the lives of citizens, reflecting a commitment to social justice, economic well-being, and the overall welfare of the populace. As stewards of public trust, government officials and politicians must continually strive to ensure that their decisions and actions contribute to the betterment of the lives of those they serve, embodying the true essence of public service (Henn and Nick, 2014).

4. Navigating the Future: Strategic Planning for Government Officials and Politicians

In the ever-evolving landscape of governance, the future planning of government officials and politicians emerges as a critical facet of effective leadership. As societies grapple with complex challenges and dynamic changes, the ability of public officials to anticipate, adapt, and strategically plan for the future becomes paramount. This study explores the multifaceted aspects of future planning in the realms of policy formulation, technology integration, global dynamics, and the imperative of sustainable development. One of the primary responsibilities of government officials and politicians is to formulate policies that not only address current issues but also anticipate and prepare for future challenges. Strategic foresight in policy planning involves an in-depth analysis of emerging trends, societal shifts, and global dynamics. Whether it be in the fields of healthcare, economy, or environmental sustainability, leaders must adopt a proactive stance, envisioning the future implications of present decisions and shaping policies that are resilient and adaptable.

Technology, as a driving force of change, occupies a central role in the future planning endeavors of government officials and politicians. The rapid pace of technological advancements necessitates a forward-thinking approach to governance. From the integration of artificial intelligence in public services to the formulation of cybersecurity policies, leaders must anticipate the transformative effects of technology on governance structures, ensuring that regulatory frameworks remain agile and responsive to emerging challenges. Global interconnectivity adds another layer of complexity to future planning for government officials and politicians. In an era where geopolitical dynamics, economic interdependence, and transnational issues shape the global landscape, leaders must think beyond national borders. Collaborative strategies, diplomatic foresight, and international cooperation become integral components of future planning, as the actions of one nation invariably reverberate across the global stage.

Sustainable development stands as a cornerstone of future planning for government officials and politicians. The imperatives of climate change, resource depletion, and environmental degradation demand a paradigm shift in policy orientation. Leaders must navigate the delicate balance between economic growth and ecological preservation, envisioning a future where development is not only robust but also sustainable, ensuring the well-being of current and future generations. Moreover, demographic shifts and societal changes necessitate a forward-looking approach to social policies. Aging populations, urbanization trends, and evolving cultural norms shape the fabric of societies. Government officials and politicians must engage in inclusive dialogues,

fostering a deep understanding of these dynamics to formulate policies that address the evolving needs of diverse populations. Education, healthcare, and social welfare initiatives need to be designed with a view to the changing demographic landscape.

In the face of unforeseen challenges, the ability to adapt and innovate becomes a critical aspect of future planning. Leaders must cultivate a culture of flexibility and openness to change, encouraging experimentation and learning from both successes and failures. The capacity to adjust policies in response to real-time feedback and emerging issues is essential for effective governance in a rapidly changing world (Gulrajani, 2015). The future planning of government officials and politicians is a dynamic and intricate process that requires a blend of strategic foresight, adaptability, and a commitment to the well-being of society. As stewards of public trust, leaders must navigate the complexities of a rapidly evolving world, envisioning a future that is not only responsive to current needs but also sustainable and resilient. In doing so, they can lay the groundwork for a society that thrives amidst uncertainty, realizing the aspirations and expectations of those they serve.

5. Building a Bribe-Free Nation

In the pursuit of a just and transparent society, the vision of a bribe-free nation stands as a beacon of integrity, accountability, and ethical governance. The eradication of bribery is not merely a legal imperative but a moral commitment to creating a fair and equitable environment where public resources are utilized for the benefit of all citizens. This study delves into the essential components and far-reaching benefits of a bribe-free nation, exploring the multifaceted dimensions that contribute to its realization. At the heart of a bribe-free nation lies the principle of ethical leadership. Government officials and politicians play a pivotal role in setting the tone for ethical conduct in public service. By exemplifying integrity, these leaders foster a culture of accountability and discourage corrupt practices. Institutionalizing codes of conduct, strengthening oversight mechanisms, and promoting a culture of transparency contribute to the creation of an environment where bribery is not tolerated.

Legal frameworks form the backbone of a bribe-free nation. Robust anti-corruption laws, stringent enforcement mechanisms, and impartial judicial systems are indispensable in the fight against bribery. The legal landscape should be characterized by swift and fair justice, sending a clear message that corruption will be met with severe consequences. Additionally, whistleblower protection measures encourage individuals to come forward with information, serving as a crucial deterrent against corrupt practices. Education and awareness play a pivotal role in cultivating a citizenry that rejects bribery. Civic education programs that highlight the detrimental effects of corruption on society, the economy, and individual well-being empower citizens to become active participants in the fight against bribery. A well-informed public is better equipped to hold leaders accountable and demand transparency in public affairs (Srivastava and Larizza, 2013).

In the digital age, leveraging technology becomes a powerful tool in the quest for a bribe-free nation. E-government initiatives, online service delivery, and transparent procurement processes reduce the opportunities for corrupt practices. The use of blockchain technology, for instance, can enhance the transparency and traceability of financial transactions, providing a robust mechanism for preventing and detecting corruption. An independent and vibrant media plays a crucial role in exposing corruption and holding public officials accountable. A free press serves as a watchdog, investigating and reporting on corrupt practices, thereby creating public awareness and catalyzing action against corruption. Journalistic integrity and protection of media freedom are essential elements in ensuring that the press can fulfill its role as a check on power.

International cooperation is indispensable in the fight against bribery, considering that corruption often transcends national borders. Collaboration between nations, sharing of best practices, and adherence to international anti-corruption conventions contribute to a collective effort in building a bribe-free global community. This cooperation not only strengthens the resolve of individual nations but also fosters a sense of shared responsibility in the global fight against corruption (Brinkerhoff and Brinkerhoff, 2015). The benefits of a bribe-free nation are profound and far-reaching. Firstly, it enhances public trust in government institutions, fostering a sense of confidence and cooperation between citizens and the state. This trust is a cornerstone of a stable and well-functioning society, encouraging civic participation and contributing to social harmony. Secondly, a bribe-free nation attracts investments by providing a level playing field for businesses and ensuring that economic activities are conducted transparently and ethically.

The realization of a bribe-free nation is a collective endeavor that requires the commitment of government officials, politicians, citizens, and the global community. It involves a multifaceted approach, incorporating ethical leadership, robust legal frameworks, education, technology, media vigilance, and international cooperation. The pursuit of a bribe-free nation is not only a legal obligation but a moral imperative

that, when achieved, fosters an environment where integrity, transparency, and accountability flourish, ultimately benefiting the well-being of the entire society.

6. Conclusion

In conclusion, the study underscores the indispensable contributions of government officials and politicians to the development of a nation. Their dynamic roles, from economic governance to social welfare, collectively shape the trajectory of a society. Recognizing the challenges, such as the need for sustainable practices and inclusive governance, highlights the complexities they navigate. The commitment to democratic principles, economic stability, and social justice is pivotal. As stewards of public trust, their decisions resonate in the well-being of citizens. The synthesis of policies, ethical leadership, and strategic foresight is paramount in addressing contemporary challenges. In embracing their roles with integrity and a forward-looking perspective, government officials and politicians become architects of a nation poised for inclusive, sustainable, and equitable development.

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Role of Personal Affluence of Individuals towards Selection of Housing Apartments to Invest

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Abstract
The study investigates into the intricate dynamics of how personal affluence influences the selection of housing apartments for investment. Through examining the financial and non-financial dimensions at various affluence levels, the research sheds light on the nuanced factors guiding real estate decisions. The study employs a qualitative analysis, synthesizing insights from existing literature, market trends, and case studies. It checks the psychological and emotional aspects intertwined with personal affluence, providing a comprehensive understanding of the diverse motivations that shape investment choices. The findings contribute to both academic discourse and practical insights for investors, developers, and policymakers navigating the complex environment of real estate investments.

Key Words: Personal Affluence, Individual Investors, Housing Apartments, Investments, Selection of House.

1. Introduction

In the realm of real estate investment, the choice of housing apartments is significantly influenced by the personal affluence of individuals. The decision to invest in a particular residential property is intricately woven into the financial fabric of an individual's life, reflecting not only their economic standing but also their aspirations and lifestyle preferences. The role of personal affluence in this context extends beyond mere financial capacity; it encompasses a complex interplay of factors such as investment goals, risk tolerance, and the desire for a certain standard of living. The housing market serves as a dynamic arena where personal affluence acts as a compass, guiding investors towards properties that align with their economic capabilities and long-term objectives. High-net-worth individuals may seek exclusive, luxury apartments that not only offer a comfortable living space but also serve as a symbol of prestige and accomplishment. On the other hand, individuals with more modest means may prioritize affordability, focusing on properties that provide a stable investment and meet their basic housing needs. The study delves into the multifaceted relationship between personal affluence and the selection of housing apartments for investment purposes. It explores how varying levels of financial capacity influence decision-making processes, shaping the diverse sector of the real estate market. Through checking the complexities of this connection, a deeper understanding emerges of how personal affluence becomes a pivotal determinant in the quest for an investment property that aligns seamlessly with individual financial goals and lifestyle aspirations.

2. Statement of Problem

The decision-making process behind the selection of housing apartments for investment is a complex interplay of various factors, with personal affluence standing out as a critical determinant. However, there exists a gap in understanding how distinct levels of personal affluence influence the preferences and choices of individuals in the real estate market. This study aims to unravel the intricacies of this relationship, delving into the specific ways in which financial capacity impacts the decision-making process for housing investments. One aspect of the problem lies in the limited empirical research that systematically investigates the correlation between personal affluence and the criteria individuals consider when selecting apartments for investment. Existing literature tends to overlook the nuanced financial motivations that shape these decisions, making it imperative to conduct an in-depth exploration. Additionally, there is a lack of clarity on whether personal affluence predominantly dictates the choice of luxury apartments, or if it extends to influence decisions on more modest and affordable housing options. Furthermore, the study seeks to address the potential challenges and opportunities that arise when personal affluence becomes a guiding factor in real estate investment decisions. Understanding these dynamics is crucial for developers, policymakers, and investors to adapt their strategies in response to the diverse needs and financial capacities of individuals in the housing market. Identifying and dissecting the nuances of this relationship, the study aims to contribute valuable insights to the field of real estate economics and investment decision-making.

3. Need for the Study

The study on the role of personal affluence in the selection of housing apartments for investment is essential for several compelling reasons. Firstly, as the real estate market evolves, understanding the intricate dynamics influenced by personal affluence becomes paramount. This study addresses a significant gap in the existing literature by providing a comprehensive analysis of how various levels of financial capacity impact decision-making processes related to real estate investments. Secondly, the findings can offer valuable insights to real estate developers, investors, and policymakers. As a result of discerning the preferences and priorities associated with different levels of personal affluence, stakeholders can tailor their strategies to better cater to the diverse needs of the market. This knowledge is particularly crucial in a sector where trends and demands are constantly evolving, ensuring that the housing market remains responsive to the economic capacities and aspirations of potential investors. Additionally, this study holds practical implications for individuals contemplating real estate investments. Understanding the role of personal affluence in the decision-making process allows prospective investors to make more informed choices aligned with their financial capabilities and long-term goals. This knowledge empowers individuals to navigate the complex real estate market with greater clarity and purpose.

4. Review of Literature

The literature surrounding the role of personal affluence in the selection of housing apartments for investment presents a multifaceted landscape that explores the interplay between financial capacity, investment decisions, and real estate dynamics. While the existing body of research provides valuable insights, it also reveals gaps and areas for further exploration. The personal affluence not only determines the budget for investment but also influences the perceived value and desirability of housing options (Saravanakumar and Jayanthi, 2021). This aligns with the broader economic literature that underscores the significance of income and wealth in influencing consumer behavior, particularly in the context of durable goods such as real estate (Falkenbach, 2010).

However, a gap exists in the granularity of understanding regarding how distinct levels of personal affluence influence investment preferences. Individuals broadly based on income brackets, overlooking the nuanced financial motivations that guide investment decisions (Bhagwat et al., 2018). An exploration of this gap can offer a more intricate understanding of the specific criteria individuals consider at different financial levels and whether personal affluence predominantly steers preferences towards luxury or more affordable housing options (Khoo et al., 2019). Focuses on the financial aspects of real estate investments, neglecting the emotional and aspirational dimensions that personal affluence may bring into play (Aruna and Rajashekar, 2016). High-net-worth individuals, real estate investments often transcend financial considerations, incorporating prestige, lifestyle aspirations, and social status. This emphasizes the need for a more holistic examination of the intersection between personal affluence and the non-financial drivers behind housing investment decisions (Chaturvedi and Sharma, 2015).

The impact of personal affluence on real estate markets extends beyond individual decision-making to broader market trends. Fluctuations in personal affluence levels within a region can significantly influence the demand for specific types of housing, thereby affecting market dynamics (Anupama, 2017). Understanding these regional variations is crucial for developers, investors, and policymakers to tailor their strategies according to the unique economic landscapes of different locales. The role of personal affluence intersects with the challenges and opportunities in the real estate investment domain (Chia et al., 2016). For instance, little attention has been given to potential bottlenecks or facilitators that personal affluence may introduce in the decision-making process (Jayakumar and Velmurugan, 2016). Investigating these dynamics can provide a more comprehensive understanding of the factors that shape the housing investment environment (Soundarajan and Susithra, 2016).

5. Purpose and Methods

The purpose of the theoretical paper is to comprehensively examine the connection between personal affluence and the selection of housing apartments for investment. Synthesizing existing theories and research, the study aims to check the factors shaping real estate decisions at various affluence levels. Employing a qualitative analysis, the methods involve an in-depth exploration of academic literature, scrutinizing the financial and non-financial aspects influencing individuals' investment choices in the housing market.

6. Discussions

6.1. Personal Affluence and Selection of Housing Apartments for Investment

The selection of housing apartments for investment is a multifaceted process intricately intertwined with an individual's personal affluence. Personal affluence, encapsulating one's financial capacity, lifestyle aspirations, and investment goals, plays a pivotal role in dictating the preferences and decisions within the real estate market. The study delves into the dynamic relationship between personal affluence and the selection of housing apartments for investment, exploring the nuanced factors that shape this intricate interplay. At its core, personal affluence serves as the financial compass guiding individuals through the diverse landscape of real estate investment. High-net-worth individuals often seek exclusive, luxury apartments that not only meet their basic housing needs but also fulfill aspirational and status-related desires. For these investors, the selection process extends beyond mere financial considerations; it is a reflection of their affluence, a manifestation of their success and social standing.

Conversely, individuals with more modest means tend to focus on affordable housing options that align with their budget constraints while still offering stability and potential returns. The investment decisions of this demographic are often driven by a pragmatic approach, emphasizing the feasibility of returns within their financial capacity. The role of personal affluence, however, extends beyond monetary considerations. Lifestyle aspirations and non-financial motivations contribute significantly to the decision-making process. For instance, individuals with substantial affluence may prioritize aesthetic features, premium amenities, and exclusive locations, seeking a lifestyle that mirrors their economic status. On the other hand, those with moderate affluence may prioritize practical aspects such as proximity to workplaces, educational institutions, and essential services, emphasizing functionality over luxury.

The psychological dimension of personal affluence further influences the perception of value and desirability associated with housing investments. Personal affluence can create a psychological halo effect, where individuals perceive properties associated with their economic standing as more valuable, regardless of objective market metrics. This psychological bias can significantly impact the selection process, steering individuals towards investments that align with their perceived socio-economic identity. In terms of investment goals, personal affluence shapes the temporal horizon and risk appetite of individuals. High-net-worth investors may have a more extended investment horizon, allowing them to weather market fluctuations and capitalize on long-term appreciation. Conversely, individuals with limited affluence may adopt a more conservative approach, prioritizing short-term gains and stability.

The methods employed in understanding this dynamic relationship involve a qualitative analysis of existing literature, encompassing academic research, market trends, and case studies. This theoretical paper synthesizes insights from diverse sources to provide a comprehensive overview of how personal affluence intertwines with the selection of housing apartments for investment. The selection of housing apartments for investment is a nuanced process intricately linked with an individual's personal affluence. Whether driven by a quest for luxury, practicality, or socio-economic identity, personal affluence emerges as a guiding force shaping the intricate decisions within the real estate market. Recognizing the multifaceted nature of this relationship is crucial for investors, developers, and policymakers navigating the dynamic landscape of real estate investments.

6.2. The Factors Shaping Real Estate Decisions at Various Affluence Levels

Real estate decisions, a complex interplay of financial, emotional, and aspirational factors, unfold differently at various affluence levels. The intricate tapestry of considerations that shape these decisions reflects the diverse and evolving dynamics within the real estate market. The study explores the multifaceted factors influencing real estate decisions across different affluence levels, shedding light on the nuanced motivations that guide individuals in their pursuit of housing investments. At higher affluence levels, luxury often takes center stage in the decision-making process. The desire for exclusive living spaces with premium amenities becomes a defining factor. High-net-worth individuals seek properties that transcend basic functionality, aspiring for residences that reflect their affluence and social standing. This segment of investors often prioritizes aesthetic appeal, architectural uniqueness, and prestigious locations, viewing real estate not only as a financial investment but as a symbol of success and prestige.

Equally, at more moderate affluence levels, practicality and affordability come to the forefront. Individuals in this bracket navigate the real estate market with a pragmatic lens, emphasizing the feasibility of returns within their financial capacity. Proximity to essential services, transportation hubs, and educational institutions becomes paramount. For these investors, real estate decisions are grounded in the functionality and

utility that a property offers, aligning with their immediate needs and budget constraints. Nonetheless, the role of personal affluence extends beyond the tangible aspects of a property. Emotional dimensions significantly influence decisions, irrespective of affluence levels. The importance of emotional connections in real estate choices, highlighting that personal affluence can evoke feelings of security, accomplishment, and identity. The emotional resonance with a property, be it in the form of a luxurious mansion or a modest family home, becomes a key determinant in the decision-making process.

The psychological impact of personal affluence introduces a nuanced layer to real estate decisions. Individuals often perceive properties associated with their economic standing as more valuable, creating a psychological halo effect. This bias can influence the perceived desirability and long-term potential of a property, shaping investment decisions based on subjective rather than objective metrics. Investment goals diverge significantly across affluence levels, impacting the temporal horizon and risk appetite of individuals. High-net-worth investors may adopt a long-term perspective, viewing real estate as a stable asset with the potential for substantial appreciation over time. On the contrary, individuals with limited affluence may prioritize short-term gains and liquidity, opting for investments aligned with their immediate financial objectives.

The methods employed in understanding these factors involve a comprehensive analysis of market trends, academic research, and case studies. As a result of synthesizing insights from diverse sources, this exploration seeks to provide a holistic understanding of how various factors converge and diverge across different affluence levels within the real estate domain. In conclusion, real estate decisions are shaped by a myriad of factors that vary at different affluence levels. Luxury, practicality, emotional resonance, and investment goals all contribute to the complex aspect of considerations guiding individuals in their pursuit of housing investments. Recognizing the diversity of these factors is paramount for industry professionals, policymakers, and investors seeking to navigate the nuanced landscape of the real estate market.

6.3. Financial and Non-Financial Investment Choices in Housing Market

In the housing market, investment choices are a delicate balance between financial considerations and non-financial factors that extend beyond monetary metrics. This study explores the nuanced interplay between financial and non-financial elements that shape decisions in the housing market, revealing the intricate dynamics that investors navigate as they seek to align their investment choices with both economic and personal objectives. Financial considerations are undeniably pivotal in housing investment decisions. The potential for return on investment, property appreciation, and rental yields are crucial metrics that guide investors in determining the financial viability of a property. High-net-worth individuals may opt for luxury properties, anticipating not only a comfortable residence but also substantial long-term appreciation. Conversely, those with more modest means may prioritize affordable housing options that promise stability and moderate returns, reflecting a pragmatic approach to financial constraints.

However, non-financial factors exert a significant influence on investment choices. Emotional connections with a property, driven by factors such as aesthetics, architectural design, and sentimental value, play a crucial role. The importance of emotional resonance in real estate decisions, emphasizing that individuals often seek properties that align with their personal preferences, lifestyle aspirations, and identity. Lifestyle considerations contribute to the non-financial dimension of investment choices. Proximity to workplaces, educational institutions, recreational areas, and community amenities becomes a key factor. Investors often prioritize convenience and quality of life, recognizing that the location and surrounding environment of a property can significantly impact its desirability and long-term value. This emphasis on lifestyle factors is particularly evident in urban settings, where the integration of work and living spaces becomes a crucial consideration for investors of all financial capacities.

Personal aspirations also drive non-financial investment choices in the housing market. High-net-worth individuals may seek exclusive properties that reflect their status and contribute to a lavish lifestyle. This category of investors often values properties for their prestige, uniqueness, and the social standing associated with ownership. Individuals with more modest financial means may focus on properties that fulfill basic needs and align with their vision of a comfortable and stable home. The methods employed in navigating these financial and non-financial considerations involve comprehensive market research, feasibility studies, and a deep understanding of personal preferences. Investors often engage in due diligence, considering factors such as market trends, potential for property appreciation, and the overall economic climate. Simultaneously, they assess the non-financial aspects, evaluating the emotional and lifestyle dimensions that contribute to the overall desirability of a property. While financial considerations such as return on investment and property appreciation are fundamental,

non-financial elements like emotional resonance, lifestyle preferences, and personal aspirations significantly shape the decision-making process.

7. Conclusion

The role of personal affluence emerges as a pivotal factor influencing the selection of housing apartments for investment. The study reveals that personal affluence not only determines the financial capacity to invest but also intricately shapes lifestyle aspirations, emotional connections, and psychological perceptions associated with real estate decisions. The nuanced interplay between financial and non-financial considerations unfolds differently across affluence levels, impacting the preferences of investors. Understanding these dynamics is imperative for stakeholders in the real estate market, providing a foundation for tailored strategies that cater to the diverse motivations of individuals. As the housing market continues to evolve, recognizing the multifaceted nature of personal affluence in investment choices is crucial for fostering a responsive and inclusive real estate landscape. The study contributes valuable insights to academia and offers practical implications for industry professionals navigating the dynamic realm of housing investments.

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