Multidisciplinary Research:
An Endeavour to Advancement

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Multidisciplinary Research: An Endeavour to Advancement

ACKNOWLEDGEMENT

I am deeply grateful to all the individuals and institutions whose support and contributions made this book possible.

First and foremost, I would like to express my sincerest gratitude to my advisor, and all the trustees, whose guidance and encouragement throughout this research journey have been invaluable.

I am also thankful to the faculty members at Bhagwan Mahavir College of Commerce and Management Studies, whose insightful feedback and scholarly expertise enriched the content of this book.

I extend my appreciation to my colleagues and friends who provided valuable discussions and support during the writing process.

My heartfelt thanks go to the research participants whose willingness to share their insights and experiences made this study meaningful.

Finally, I express my deepest love and gratitude to my family for their unwavering support and understanding during the countless hours spent working on this book.

Thank you all for being an integral part of this endeavor.

MESSAGE

Today, I am thrilled and honoured to announce the release of our university's latest intellectual triumph - the publication of the edited book, SAMHITA. As the President of this esteemed institution, I am filled with immense pride and admiration for the remarkable achievements of our faculty, researchers, and scholars. This edited book stands as a testament to the calibre of research and the spirit of inquiry that thrives within our university's ecosystem. This edited book serves as a beacon of knowledge and inspiration for our current and future scholars. It showcases the power of collaboration and the potential that emerges when diverse minds come together to pursue shared goals.

- Dr. Sanjay Jain

President, Bhagwan Mahavir University

MESSAGE

We founded this university with the noble mission of nurturing intellect, fostering innovation, and empowering individuals to shape a better future. Today, we see this mission come to life through the ideas and discoveries shared within the pages of this edited book. I am deeply grateful to the writers of the research papers included in this book. You clearly have a strong enthusiasm for your subjects of study, and your research makes a substantial contribution to the current conversation that spurs advancement and creativity. Recall that this accomplishment is but a first step in our never-ending quest for knowledge as we celebrate it. As a team, we have to keep pushing the envelope in academia and aim for even higher standards of performance. Your work never ceases to uplift and confirm our dedication to the highest standards of research and instruction.

I'm wishing everyone more success in both your professional and personal life.

- Shri Anil Jain
Managing Trustee, Bhagwan Mahavir University

x

MESSAGE

It is a privilege for me to oversee the outstanding calibre of research that our faculty and researchers do in my capacity as Chairman of this prestigious university. Your unwavering curiosity and devotion to academic endeavours have once again demonstrated the university's dedication to promoting an atmosphere of academic achievement and innovation. The result of our combined efforts to push the frontiers of knowledge in the fields of technology and management is this edited book. The wide range of viewpoints and innovative concepts that are discussed in its pages demonstrate the depth and breadth of knowledge that our university community has to offer. My heartfelt gratitude goes out to the editorial staff for their painstaking efforts in molding this publication into a coherent and influential book. Their dedication to upholding strict academic standards while showcasing your research contributions is commendable.

- Shri Jagdish Jain
Chairman, Bhagwan Mahavir University

As the Vice Chairman Trustee, I am delighted to present this compilation that showcases the dedication, expertise, and collective efforts of our distinguished authors and researchers. These pages not only encapsulate your hard work but also reflect the spirit of collaboration and intellectual exchange that defines our institution. I extend my gratitude to every author, reviewer, and contributor who has played a pivotal role in making this publication a reality.

- Satbir Jain
Vice Chairman, Bhagwan Mahavir University

MESSAGE

A book of this caliber can only be written with devotion, skill, and numerous hours of hard effort. The editorial board's diligent efforts to shape and polish the content have paid off handsomely, producing a compilation that brilliantly demonstrates the breadth and depth of research. Throughout this process, the meticulous attention to detail, persistent dedication to academic honesty, and thorough comprehension of the importance of each research paper have been obvious. I also want to use this opportunity to say how much I value the atmosphere of cooperation and camaraderie that has characterised this project. A book that is bigger than the sum of its parts has been made possible by the editorial board's members working together effectively and by the researchers extensively

- Dr. Harshita Jain

Trustee, Bhagwan Mahavir University

I am filled with immense gratitude as I extend my sincerest appreciation to each one of you for your exceptional contributions and dedication as the editorial board of our recently published book Samhita. I would also like to acknowledge the countless hours the team have dedicated to nurturing and supporting the authors throughout the editing process. their valuable feedback and guidance have not only enhanced the content but have also empowered our scholars to reach new heights in their research endeavors.

- Smt. Leena Jain

Trustee, Bhagwan Mahavir University

MESSAGE

We are thrilled to launch our book Samhita for research in the field of Information technology and Management. It gives me pleasure to congratulate all the editorial members, authors and researchers to publish a chapter in this book. Your contribution stood out among many impressive submissions, and we believe it has greatly enriched the content of the book. We appreciate your dedication to advancing knowledge in your field and are excited to showcase your work to a wider audience. Thank you for being a part of this important endeavor.

- Smt. Purnima Jain

Trustee, Bhagwan Mahavir University

MESSAGE

As a university, we take great pride in creating an atmosphere that supports academic endeavors and cross-disciplinary cooperation. This anthology of edited books is evidence of our university's thriving academic inquiry culture. Let us remember that this is just the beginning of our journey even as we celebrate this accomplishment. I hope that this edited volume will act as a springboard for future academic successes. As a team, we'll keep pushing the boundaries of knowledge, shattering myths, and improving society.

- Dr. Nirmal Sharma

Provost, Bhagwan Mahavir University

We are proud to put one more step on the ladder of the success, one more achievement in the milestone. This edited book is the witness of the contribution towards the society in the field of Management and technology. The academicians, research scholars have put in their efforts to conduct the research work. It is not only the publication of the research work by the university but the heart and soul of the university that is put on by the editorial team members for this publication. It is my immense pleasure to be a part of this edited book and I am grateful to the researchers to contribute their efforts in this edited book. Your dedication to intellectual exploration and pursuit of excellence is what sets our university apart as a beacon of knowledge and innovation.

- Dr. Vijay Matawala

Registrar, Bhagwan Mahavir University

MESSAGE

It is with great pride and enthusiasm that I present to you this remarkable work, which embodies the collective efforts of and a shared vision.

As the Editor, I had the privilege of guiding this manuscript through its journey of refinement and discovery. Each chapter is meticulously written to engage, educate, and inspire, ensuring that the content resonates with both the mind and heart.

I am confident that this book will serve as a valuable resource, sparking curiosity and encouraging meaningful conversations among readers. It has been an honor to contribute to the shaping of this incredible piece, which I believe will leave an indelible mark on its readers. May it inspire you, provoke thought, and encourage new perspectives, just as it has for those of us involved in its creation.

- **Dr. Cheta Desai**
I/C Director
Bhagwan Mahavir College of Commerce & Management Studies

MESSAGE

It is a privilege to introduce Samhita IV, a vibrant tapestry of ideas and innovation. This book is more than a collection of writings; it is a platform for bold thoughts, creative exploration, and transformative knowledge. Each contribution in this edition pushes boundaries, sparking curiosity and encouraging new perspectives. As the Editorial Associate, I am inspired by the brilliance and originality of our contributors and hope this volume ignites a journey of discovery for its readers.

- Dr. Harshita Bhatia

Interdisciplinary studies involves the combination of multiple academic disciplines into one activity. This book has the potential to encourage interdisciplinary thinking and position themselves for success in today's rapidly changing business landscape. The book "Multidisciplinary Research: An Endeavour to Advancement" gave the great opportunity for the research scholars to showcase their talent.

- Miss Khushboo Lalwani

MESSAGE

It is a great pride to be a part of Samhita IV: Multidisciplinary Research - An Endeavour to Advancement. This compilation reflects the collective intellect and dedication of scholars from diverse disciplines, showcasing their pursuit of knowledge and innovation. As an editorial associate, I am honored to have contributed to curating this treasure trove of ideas and insights. I extend my heartfelt gratitude to the authors, reviewers, and the entire editorial team for their unwavering commitment to excellence. May this edition inspire future explorations and interdisciplinary collaborations.

- **Mrs. Komal Shah**

It is with immense pride and privilege that I present Samhita IV: Multidisciplinary Research - An Endeavour to Advancement, a symphony of scholarly ingenuity and intellectual rigor. This volume is not merely a collection of research but a dynamic confluence of diverse perspectives, fostering dialogue across disciplines. Each contribution is a testament to the unyielding spirit of inquiry and the relentless pursuit of knowledge that drives progress. As an editorial associate, it has been a rewarding journey to witness this vision take shape. I am deeply grateful to the authors for their groundbreaking ideas, the reviewers for their discerning insights, and the editorial team for their steadfast dedication.

- **Ms.Bhumika Panchal**

MESSAGE

It is with great honor and profound enthusiasm that I present Samhita IV: Multidisciplinary Research - An Endeavour to Advancement, a vibrant tapestry of intellectual exploration and academic excellence. This volume transcends traditional boundaries, offering a kaleidoscope of ideas and innovations that exemplify the transformative power of multidisciplinary collaboration. Every contribution within these pages reflects not only rigorous scholarship but also the courage to question, innovate, and redefine conventions. May this edition of Samhita IV spark curiosity, inspire dialogue, and serve as a catalyst for meaningful advancements across disciplines. Together, let us embrace the limitless potential of collaborative inquiry and shared wisdom.

- **Mrs. Jeny Doctor**

Being part of this journey as an editorial associate has been a transformative experience. I am profoundly grateful to the authors for their bold and insightful contributions, to the reviewers for their sharp and constructive guidance, and to the editorial team for their tireless dedication to this shared vision. Samhita IV is not just a book; it is an invitation- a call to think differently, to engage deeply, and to innovate relentlessly. I hope it sparks in its readers the same sense of wonder and possibility that it inspired in its creation. Let this edition be a beacon for all who seek to advance knowledge and make a meaningful impact on the world."

- **Mrs.Ankita Agarwal**

MESSAGE

As the Editorial Associate of Samhita IV, I am delighted to present this enriching collection of ideas, research, and creative works. This book is a reflection of the dedication, intellectual curiosity, and passion of all contributors who have worked tirelessly to bring this vision to life. Each chapter offers a unique perspective, inviting readers to explore, learn, and grow. It has been an honor to be part of this journey, ensuring every piece resonates with quality and purpose. I sincerely hope Samhita IV serves as a source of inspiration and a platform for meaningful discussions and continued learning.

- **Mrs. Raksha Jhawar**

The main objective of interdisciplinary research is to form a broad and inclusive understanding of a topic. The process provides various perspectives and can often lead to unique intellectual discoveries. This book will provide the great opportunity for the upcoming researchers.

- **Miss Juli Savaliya**

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An Insight to Financial Literacy Among Millennialsin India

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Abstract

The purpose of this review paper is to understand financial literacy in India. A lack of knowledge about investment avenues, risk management skills, ignoring the importance of budgeting and retirement planning, easy accessibility to credit and debit cards, and a lack of understanding of the time value of money, inflation, and tax planning have led to financial debt. Despite India's large population and fast-growing economy with a national focus on inclusive growth and the urgent need to develop a vibrant and stable financial system, education finance is also necessary.

Keywords: Financial Literacy, Millennials

1. Introduction

Economic growth and development of any country depend upon a well-knit financial system. The monetary system comprises a set of sub-systems of financial institutions, financial markets, financial instruments, and services, which help the formation of capital. It provides a mechanism through which savings are transformed into investments.(Hridhya.PK & Reddy, 2020). Many kinds of financial products and services are available now, and they are being advertised using technology and other ways. But it's difficult for regular people to understand all this information and make good choices. This is why having knowledge and skills about money is essential, which can be learned through financial education. Financial literacy plays a crucial role in preventing individuals from making mistakes with their money.(Maheria, 2023)

2. What is Financial Literacy?

"Financial literacy is a combination of skills, awareness, attitudes, knowledge, endeavor that are essential to sound financial decisions and that would ultimately ensure financial well-being for individuals as well". (OECD, 2013)

Financial literacy means different things to different people. For some it is a wide-ranging concept, incorporating an understanding of economics and how household decisions are affected by economic conditions and circumstances. For others, financial literacy means focusing quite narrowly on basic money management skills - budgets, savings, investments, insurance.(P., 2018)

3. Objectives

The objective of the study is to assess the level of financial literacy among millennials in India and to explore the need for and importance of financial literacy as India has one of the largest millennial populations.

4. Literature Review

Dr. Anita Tiwari and Akash Yadav analyzed "A STUDY OF FINANCIAL LITERACY AND FINANCIAL BEHAVIOUR AMONG MILLENNIALS AND GENERATION Z". The objectives of the study were to measure the level of financial literacy, and awareness regarding financial products, investment behaviors, association between gender and investment frequency and association between level of income and saving for retirement planning among millennials and Gen Z. sample size for the study was 109 respondents. The study found that financial literacy level is not up to the mark among millennials and Gen Z. The use of debit cards and digital payment is high among millennials and Gen Z, credit cardsare less used and preferable. The results show that knowledge of financial products is very low among millennials and Gen Z. There is no association between gender and investment frequency and level of income and saving for retirement planning are positively associated. (Tiwari & Yadav, 2022)

Anu Mohta and V. Shunmugasundaram assessed "Financial Literacy among Millennilas" in 2022. The study started with the objective of assessing the basic and advanced financial literacy level of millennials investor in Delhi NCR. 318 responses have been evaluated and it has been concluded that millennials have poor knowledge about time value of money, minimal knowledge on bond prices. Males are highly financially literate as compared to female. The study also conclude that millennials age, occupation, marital status and family size don't seem to affect the level of financial literacy. (Mohta & Shunmugasundaram , Financial Literacy among Millennials, 2022)

Shyamala G and Dr. R. Mahesh evaluated "A Study on Financial Literacy and it's Determinants among Millennials in Mysore City". 106 responses have been analyses. The study found that financial literacy does not depend upon gender, age, educational qualification, marital status. It depends upon occupation and income level. The level of financial literacy among millennials is very low in Mysore city. (Shyamala G & Dr. R. Mahesh, 2022)

Kavita CHAVALI, Prasanna MOHAN RAJ and Riyaz AHMED analyzed "Does Financial Behavior Influence Financial Well-being?". The study started with the objective of examining the influence of financial behavior and financial wellbeing. 150 responses have been collected and tested with its reliability using Cronbach's alpha. The study found that except for credit commitment all the other four behavioral factors like future security, savings and investments, credit indiscipline, and financial consciousness have an impact on the financial well-being of an individual. Many studies revealed credit indiscipline and lack of self-control on spending among the millennials. (CHAVALI, Prasanna, & AHMED, 2021)

Rashmy Moray and Vanishree Pabalkar assessed "Investing behaviour of the IT Millennials with respect to retirement planning" in Bangalore and Pune in 2019. The objective of the study was to analyze whether IT millennials are ready for retirement or not and to identify the demographic factors and behavioral biases affecting the financial planning of the Millennials. The study was made to analyze investment behavior of the millennials with respect to retirement planning using Retirement Wellness Score. Most of the respondents gave preference to saving account and fixed deposit as investment instrument. Due to low awareness of post-retirement liabilities, the primary motive for investment was tax deduction rather than long term perspective. Risk tolerance seems to be very low. Overconfidence and regret aversion were the main reasons for incorrect investing decisions among millennials. (Moray & Pabalkar, 2019)

Sudhir Chandra Das also studied on the "Financial literacy among Indian millennials generation and their reflections on financial behaviour and attitude." The sample for the study was 210 PG students of marketing, accounting/ finance and HR stream. The study shows that millennials have less knowledge of time value of money, corporate tax, share market due to their different area of study, except this financial literacy level among students do not varying. Financial literacy depends on gender, educational qualification, age and on the education of parents. The level of financial literacy is high among accounting students as compared to the students of marketing and HR. (Das, 2016).

Sekar M and Gowri. M studied on "Financial literacy and its determinant among Gen Y employees in Coimbatore city in March 2015." The objective of the study was to assess the level of financial literacy, financial knowledge, and financial matters among millennials. For this purpose, data collected from 189 millennials. Financial literacy level was 50.90 % among millennials. Millennials do not believe in savings. Easy availability of credit cards has a great impact on today's generation. A study revealed that financial literacy doesn't depend on age. Financial literacy depends upon educational qualification and income level of respondents. Unmarried employees possess lower financial knowledge. Marriage also affects one's financial decision due to the dependency of others on them. The study also concludes that financial knowledge among male is high as compared to female. (M & Gowri., 2015).

5. Research Methodology

This paper is based on descriptive study. Secondary data are collected from journals article, newspapers, website, research papers and from the financial institutions and regulatory bodies of India.

6. Need for and Importance of Financial Literacy

Financial Literacy helps in developing the lives of people with effective financial planning and decisions. No one wants to lose their hard-earned money because of a wrong choice. Hence, it becomes essential to have minimum knowledge, awareness and idea about financial

services and related issues(Rath & Patra, 2023). People must decide on short-term savings and borrowing for paying bills on time, for mortgage payment, for their vacancies, and for medical and insurance expenditures. In addition, they must plan for long-term investments such as putting money aside for a rainy day, for retirement and for their children's education(Nano & Cani). Financial literacy helps individuals to improve their level of understanding of financial matters which enables them to process financial information and make informed decisions about personal finance. Financial literacy aids in improving the quality of financial services and contributes to economic growth and development of a country. (M. Bala Swamy, 2016)

Financial literacy is the function of continuous, repetitive learning over a lifetime. The final aim is not to create financial experts; it is more important to equip individuals with sufficient knowledge to make sense of financial activities, seek out appropriate information, and be able to understand and interpret the information that they subsequently acquire.(P., 2018)

7. Financial Literacy in India

Millennials are a high-impact generation poised to shape the national and global economy in new and significant ways and their economic influence is expected to grow over the next decade. Butthe platform from which they will wield this influence is a troubling one. They engage in expensive credit card behaviors, stand at the forefront of the growth of student loan debt, and many are already raiding their retirement accounts.(Das, 2016) A country like India with high young demographic dividend and socio-economic diversities should undergo research in this topic. With 65 percent of its population under the age of 35 years, India today assertions one of the largest available workforces in the world. A large segment of this demographic belongs to the younger generations. So, measuring financial literacy among the people under the age of 35 becomes more important.(Mr.S.Karthik, 2018)

The overall Financial Literacy in India is measured at 27%. Out of total 35 States/UTs around 19 States/UTs (54%) are having financial literacy above average literacy level of India. Goa, Chandigarh and Delhi are the top 3 States with financial literacy above 50%. At the bottom of financial literacy are Odisha, Sikkim and Chhattisgarh with 11%, 10% and 9% FL respectively.(NCFE, 2019)
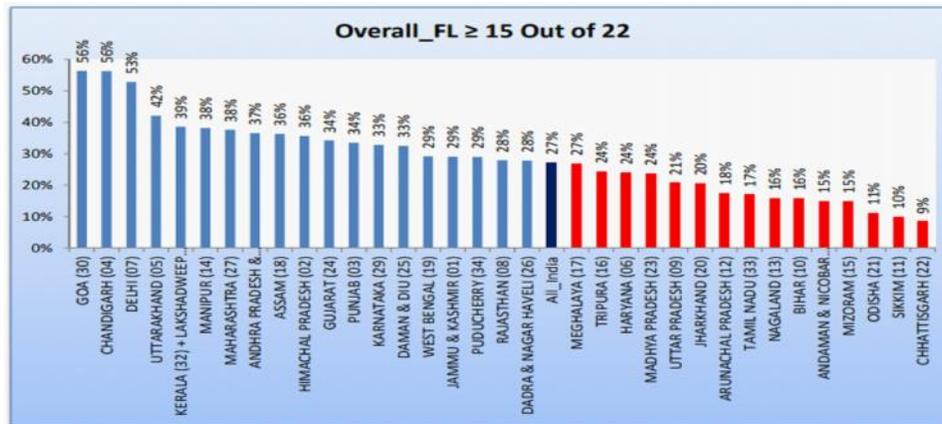
Source: Executive Summary: NCFE Financial Literacy and Inclusion Survey 2019

Reserve Bank of India (RBI) has been observing Financial Literacy Week (FLW) every year since 2016 to propagate financial education messages to public at large to empower them to engage in responsible financial behavior and take informed financial decisions. The theme for this year's Financial Literacy Week to be observed during February 26 - March 01, 2024, is "Make a Right Start: Become Financially Smart", with emphasis on "Saving and Power of Compounding", "Banking Essentials for Students" and "Digital and Cyber Hygiene" which aligns with overall strategic objectives of the National Strategy for Financial Education: 2020-2025. The theme for this year is targeted towards young adults, mainly students. The objective is to increase awareness on the advantage of inculcating discipline from an early age.(PIB Ahmedabad, 2024)

8. Conclusion

Financial literacy plays a very important role in financial decision making, financial attitude and behavior. Several studies have been conducted to assess the level of financial literacy among millennials in India. Study proves that the level of financial literacy among millennials is very low. Financial literacy is not affected by age, education qualification and income. A comprehensive study should be made to understand the level of financial literacy.

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A Study on Investor's Perception Towards Credit Rating Agencies with the Reference to Surat City

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Research Scholar, Gujarat Technological University

Abstract

Credit ratings are playing an increasingly dominant role in assessing risk in Indian financial markets. Credit rating is the opinion of a recognized entity on the relative creditworthiness of an issuer or instrument. It is a body of corporations engaged in scrutiny, evaluation of securities, and questioning by investors, media, and regulators. Therefore, it is essential to understand credit rating agencies' methodology, process, rating symbols, and services for investors before making investment decisions. This study focuses on the perception of investors towards credit rating agencies like CRISIL, ICRA, CARE, and Fitch India. It also examines investors' awareness and satisfaction level of credit rating through a questionnaire survey. The study found that there was a positive perspective of investors toward credit rating agencies according to mean value. To find out the awareness level of investors about various credit rating agencies, frequency analysis has been calculated and it has found that the majority of respondents are aware of various credit rating agencies. As per the mean value, investors are moderately satisfied with the information provided by various credit rating agencies.

Keywords: Credit rating, awareness, perception, Satisfaction

Introduction

A credit rating agency (CRA) evaluates and assesses an individual's or a company's creditworthiness. That is, these agencies consider a debtor's income and credit lines to analyze the debtor's ability to repay the debt or if there is any credit risk associated. Securities and Exchange Board of India (SEBI) reserves the right to authorize and regulate credit rating agencies according to SEBI Regulations, 1999 of the SEBI Act, 1992.Credit rating agencies analyze an organization, individual, or entity and assign ratings to it. These agencies have the authority to rate companies, state governments, non-profit organizations, countries, securities, local government bodies, and special purpose entities. Many factors are considered while settling with a rating such as financial statements, type of debt, lending and borrowing history, repayment capability, past credit repayment behavior, and more. Each of these factors contributes to a specified share in computing the result, credit score. The credit rating agency does not provide any decision to

financial institutions on whether an entity should get a credit facility or not; rather it provides the report and additional inputs making it easier for the lender to analyze and an informed decision. (cleartax.in)

CRISIL - Credit Rating Information Services of India Limited

Year of Establishment	1987
Headquarters	Gurgaon, India
Rating scale	➢ CRISIL offers 8 different grades of credit scoring. They are, ➢ CRISILAAA, CRISIL AA, CRISIL A – The three grades offer maximum safety for timely servicing of the loans. ➢ CRISILBBB, CRISIL BB – Offer moderate safety. ➢ CRISIL B, CRISIL C, CRISIL D – High-risk individuals

ICRA - Investment Information and Credit Rating Agency of India Limited

Year of Establishment	1991
Headquarters	Mumbai, India
Rating scale	➢ The ICRA rating system includes symbols that represent the ability of a corporate entity to service its debt obligations promptly. The rating symbols vary with the financial instruments considered.

CARE- Credit Analysis and Research

Year of Establishment	1993
Headquarters	Mumbai, India
Rating scale	CARE offers two different categories of bank loan ratings for short-term and long-term debt ranges- ➢ The short-term debt ratings are as follows and mentioned in the descending order of safety level for servicing loans appropriately. CARE AAA, CARE AA, CARE A, CARE BBB, CARE BB, CARE B, CARE C, CARE D. ➢ The long-term debt ratings are as follows and mentioned in the descending order of safety level for servicing loans appropriately. CARE A1, CARE A2, CARE A3, CARE A4, and CARE D.

Fitch India

Year of Establishment	1995
Headquarters	Mumbai, India
Rating scale	➢ Rating Scale for Long-Term Debt Instruments [the instruments with an original maturity exceeding one year]: AAA to D ➢ Rating Scale for Short-Term Debt instruments [the instruments with an original maturity of up to one year]: A1 to D

(INDIALENDS)

REVIEW OF LITERATURE

Duggal (1992) tried to find out the relevance of credit rating in the Indian context and the extent of awareness about the concept of credit rating and the rating agencies in India. She evaluated the working of rating agencies in light of the experience of the rated companies.

Shankar (1992) tried to evaluate the operations of CRISIL which include the methodology of rating. Ratings were not frequently revised by the agency as done in other countries. It was also found that the agency was not engaged in the rating of equity instruments.

Khan and Akbar (1993) studied the conceptual and methodological aspects of CRISIL rating as well as the progress of its operations in India. They suggested some measures to make the credit rating scheme a successful scheme in India, including revising its ratings frequently. They explained that the methodology of CRISIL considers various factors including business analysis, financial analysis, and fundamental analysis, management evaluation, and geographical analysis, regulatory and competitive analysis.

Bheemanagauda and Madegowda (2010) attempted to evaluate the performance of credit rating agencies in India. During the study period, the maximum percentage of instruments rated is assigned the investment-grade rating. The study further highlights that among the agencies that maintain the stability of ratings, Fitch India Ratings holds the top position followed by CRISIL, ICRA, and CARE in line.

Michele Modina (2012) reported that credit rating has introduced important changes in the credit process. Fitch India Ratings holds the top position followed by CRISIL, ICRA, and CARE in line. During the study period, the maximum percentage of instruments rated is assigned the investment-grade rating.

PROBLEM STATEMENT

The growth of the financial markets over the last years would have been unthinkable without Credit Rating Agencies. The availability of clear, accepted indicators of the risk of default helps

investors toinvest in securities whose credit quality they would have been virtually unable to assess on their own. The Credit Rating Agencies worked for decades on designing a simple and readily understandable system that would allow any investor to invest in securities with which they were not directly familiar. Where securities are concerned, this system has proved reliable and enabled investors to diversify their portfolios. In the markets, the role of the Credit Rating Agencies goes far beyond eliminating information asymmetry. Markets for structured products could not have developed without the quality assurance provided by Credit Rating Agencies to unsophisticated investors about inherently complex financial products. Credit Rating operated as trusted gate keepers. All these issues mentioned above and the research gap i.e., there are no studies concerning credit rating regarding categories of investors in Surat induced the researcher to attempt to study the perspectives of credit rating concerning investors in Surat.

OBJECTIVES OF THE STUDY

•   To study the perspective of investors towards credit rating agencies.

•   To study the awareness level of investors about various credit rating agencies.

•   To know the satisfaction level of investors regarding credit rating agencies.

METHODOLOGY OF THE STUDY:

The study is based on a Descriptive research design and primary data has been collected through a well-structured questionnaire from 100 investors from Surat city. The study consists of four major credit rating agencies i.e. CRISIL, ICRA, CARE, and FITCH Ltd. of India. Also, the study is based on secondary data which is collected from credit rating agencies' websites, journals, articles, books, and annual reports.

SAMPLING

Sampling frame:	For this study sampling unit is people from different areas of Surat city.
Sample technique:	Non-probability convenient sampling technique
Research instrument:	Structured questionnaire
Sample size:	100 respondents

TOOLS FOR DATA ANALYSES

For analysis of data frequency tables & pie-chart have been used. The coding of the questionnaire is done by the Excel and SPSS software.

LIMITATION FOR THE STUDY:

- The respondents were also biased in giving their opinion.
- The availability of time at the disposal of the researcher has also acted as a limitation in making an in-depth and exhaustive study.
- The study is limited to Surat City only.

SCOPE FOR FUTURE RESEARCH

The area of study gives scope for further research which is outlined as follows:

- Credit Rating - A study from the point of view of the issuer of debt instruments.
- Credit Rating - A study on instruments of Financial, Banking, and Non-Banking Finance Companies.
- A comparative study on awareness of Credit Rating by Indian and Foreign investors.
- Equity Rating in India.
- Quantitative Techniques in Credit Rating.
- A study on Sovereign Rating.

DATA ANALYSIS
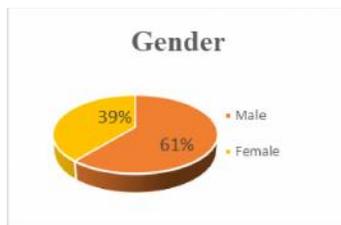
Chart 1: Gender of the respondents
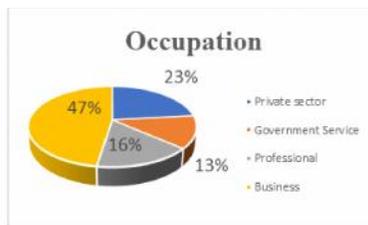
Chart 2: Occupation of the respondents
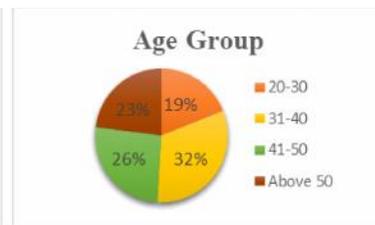
Chart 3: Age of the respondents
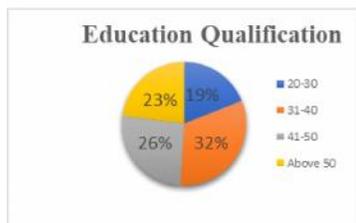
Chart 4 : Qualification of the respondents

AWARENESS OF INVESTORS ABOUT CREDIT RATING
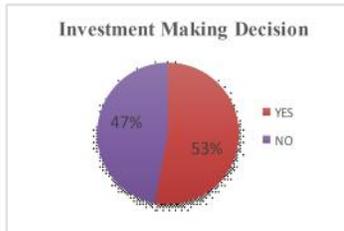
Chart 5 : Investment decision of the respondents
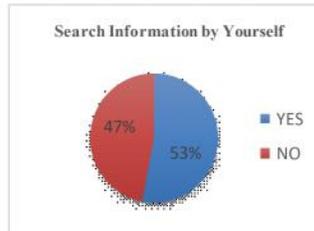
Chart 6 : Information of the respondents
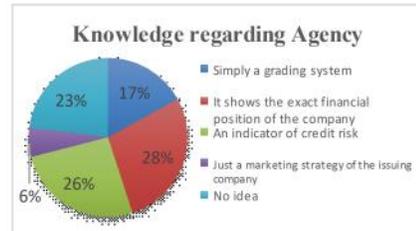
Chart 7 : Knowledge about agency
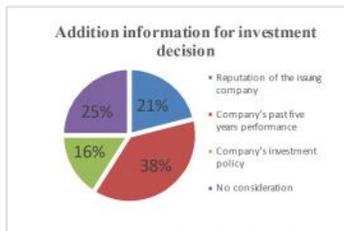
Chart 8 : Additional investment Decision
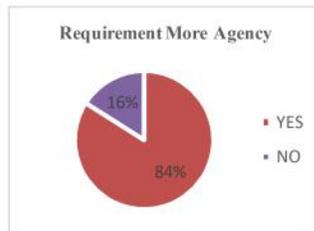
Chart 9 : Requirement more agency
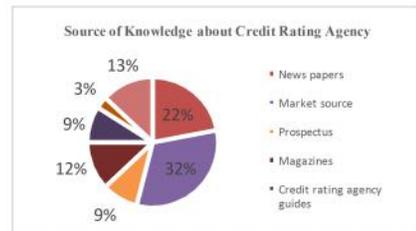
Chart 10 : Source of knowledge about agency.
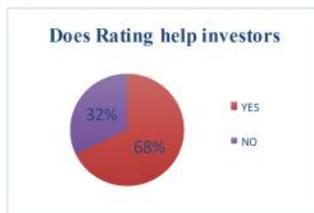
Chart 11 : Rating help invstors

PERCEPTION TOWARD CREDIT RATING

Note: SA - Strongly Agree, A - Agree, UD - Undecided, DA - Disagree, and SDA - Strongly Disagree
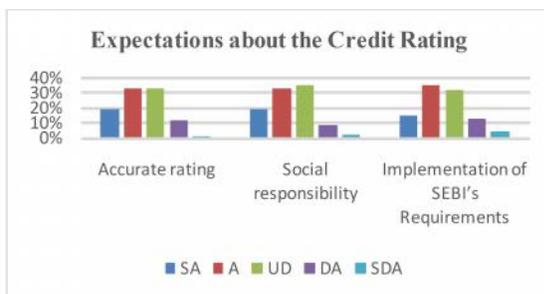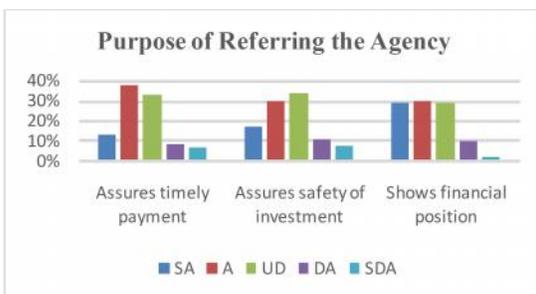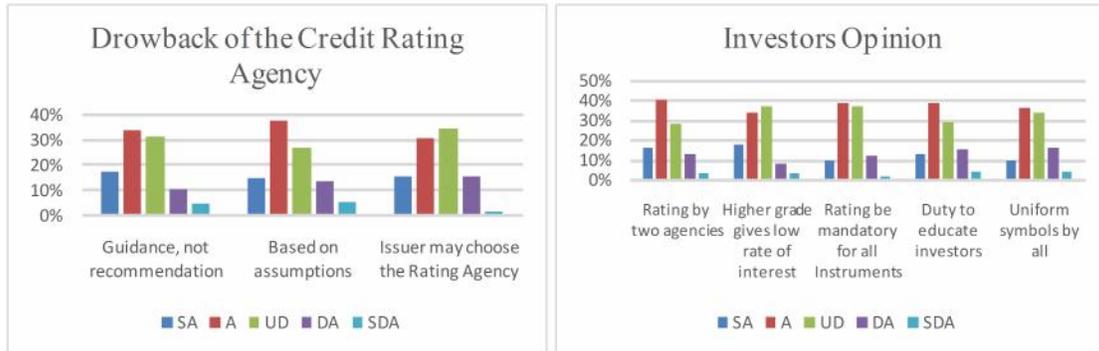
Credit Rating Attributes and Satisfaction Level

Descriptive Statistics

Table 1: Credit Rating Attributes and Satisfaction level

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std.Error	Statistic	Std.Error
Quality of Analysis	100	1.00	5.00	**2.4800**	.96901	.193	.241	-.350	.478
Rating Accuracy	100	1.00	5.00	**2.6200**	1.00282	.460	.241	-.058	.478
Timelines in Rating	100	1.00	5.00	**2.5100**	.94810	.043	.241	-.569	.478
Rating Updating	100	1.00	5.00	**2.4600**	.93657	.156	.241	-.493	.478
Trans of Methodology	100	1.00	5.00	**2.6400**	.96943	.239	.241	-.293	.478
Surveillance	100	1.00	5.00	**2.5600**	1.10390	.581	.241	-.076	.478
Usefulness of Research	100	1.00	5.00	**2.5300**	1.15867	.721	.241	-.101	.478
Proper Forecasting of Data	100	1.00	5.00	**2.3200**	1.01384	.505	.241	-.095	.478
Practical Utilities	100	1.00	5.00	**2.4200**	.96588	.369	.241	-.245	.478
Update In for In Market	100	1.00	5.00	**2.6100**	1.04345	.463	.241	-.323	.478
Valid(list wise)	100								

Very highly satisfied (1), highly satisfied (2), somewhat satisfied (3), Dissatisfied (4), strongly dissatisfied (5)

Interpretation:

- Quality of analysis: - The mean value (i.e.2.48) investors are highly satisfied.

- Rating accuracy:- The mean value (i.e.2.62) investors are somewhat satisfied.

- Timeliness of rating: - The mean value (i.e.2.51) investors are somewhat satisfied.

- Rating upgrading: - The mean value (i.e.2.46) investors are highly satisfied

- Transparency of methodology:- The means value (i.e.2.64) investors are somewhat satisfied.

- Surveillance: - The mean value (i.e.2.56) investors are somewhat satisfied.

- The usefulness of research means value (i.e.2.53) investors are somewhat satisfied.

- Proper forecasting of financial data means value (i.e.2.32) investors are highly satisfied.

- Practical utility: - The mean value (i.e.2.42) investors are highly satisfied.

- Update information on the credit market: - The mean value (i.e.2.61) investors are somewhat satisfied.

Perception of investors on credit rating:

Descriptive Statistics

Table 2: Perception of investors on credit rating

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std.Error	Statistic	Std.Error
Assurance Payment Interest	100	1.00	5.00	2.5900	1.05500	.574	.241	.029	.478
Assurance Safety Payment	100	1.00	5.00	2.6300	1.13400	.391	.241	-.390	.478
Show Financial Position	100	1.00	5.00	2.2600	1.05044	.418	.241	-.569	.478
Accurate rating	100	1.00	5.00	2.4000	.97442	.187	.241	-.637	.478
Social responsibility	100	1.00	5.00	2.4100	.96499	.261	.241	-.272	.478
Impl.of SEBI Req	100	1.00	5.00	2.5500	1.02863	.374	.241	-.286	.478
Guidance	100	1.00	5.00	2.5100	1.06832	.430	.241	-.258	.478
Based on Assumption	100	1.00	5.00	2.5800	1.09341	.477	.241	-.380	.478
Favorable Rating	100	1.00	5.00	2.5700	1.00760	.107	.241	-.612	.478
Rating by Two Agency	100	1.00	5.00	2.4700	1.00960	.444	.241	-.273	.478
Rated instrument	100	1.00	5.00	2.4400	.97773	.337	.241	-.057	.478
Compulsory for All	100	1.00	5.00	2.5700	.90179	.292	.241	-.074	.478
Educate Investors	100	1.00	5.00	2.5800	1.02671	.409	.241	-.345	.478
Uniform symbols	100	1.00	5.00	2.6800	.99372	.306	.241	-.318	.478
Valid N(list wise)	100								

Note: SA - Strongly Agree (1), A - Agree (2), UD - Undecided (3), DA - Disagree (4) and SDA - Strongly Disagree (5)

Interpretation:

- **Purpose of referring credit rating agencies:-** The mean value investors neither agree nor disagree regarding timely payment and principal, the safety of investment, and the financial position of the company.

- **Expectations about the credit rating agencies:-** The mean value investors neither agree nor disagree regarding the accuracy of rating, social responsibility, and implementation of SEBI's requirements.

- **Credit rating and drawbacks:-** The mean value investors neither agree nor disagree regarding guidelines, assumptions, and favorable rating of credit rating agencies.

- **Opinion about rating agencies:-** The means value investors neither agree nor disagree regarding Rating by two agencies, rated instrument, educate investors, and uniform symbols of credit rating agencies.

Conclusion

Credit rating is defined as an opinion of credit rating agencies as to the issuer and depositor by a simple symbol system given by various agencies into three levels, viz. investment grade, non-investment grade, and default grade. The analysis and comparison provided by various credit rating agencies allow investors to examine and understand the risks and opportunities associated with the various investments. Rating is undertaken by four different agencies in India, namely, CRISIL, ICRA, CARE, and FITCH India, with minor differences in the four, the basic parameters of all of them remain the same. However, the presentation of each agency has its methodology, analysis, and implications. The present study investigated the perspective of investors toward credit rating agencies. The study found that there was a positive perspective of investors toward credit rating agencies according to mean value. To find out the awareness level of investors about various credit rating agencies, frequency analysis has been calculated and it has found that the majority of respondents are aware of various credit rating agencies. As per the mean value, investors are just satisfied with the information provided by various credit rating agencies.

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WEBSITES:

h.   All About Credit Rating Agencies in India (indialends.com)

i.   Credit Rating Agencies in India: What are Credit Rating Agencies & How do they work? (clear tax. in)

A Study on Mutual Funds in India

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Abstract

This paper examines the journey of the mutual fund industry in India, exploring its origins, periods of decline and growth, and projecting its potential future for investors. A mutual fund, also known as an investment company, serves as an investment vehicle that pools money from multiple investors. The fund manager invests these funds in securities such as stocks and bonds, collectively forming the fund's portfolio.

The development of money market and short-term bond funds may have been spurred by restrictions on competing products. This study analyzes and compares the performance of various types of mutual funds in India, concluding that equity funds outperform income funds. Additionally, the research highlights that equity fund managers demonstrate notable market timing ability. Institutional fund managers effectively time their investments with market conditions, while broker-operated funds do not exhibit such market timing capabilities. Empirical evidence further supports that fund managers can strategically align their investments with prevailing market conditions, showcasing significant timing expertise.

Key words: *Mutual Fund Industry, India, Equity Fund, Money Market*

Introduction

A mutual fund is a professionally managed portfolio comprising securities from multiple corporations. These corporations earn dividends on their held shares and realize capital gains or losses from trading their securities. Investors buy shares in the mutual fund as though it were a single security. After covering operating expenses, the mutual fund distributes its earnings-whether dividends, capital gains, or losses-to investors based on their proportionate investments.

This investment model aligns with the principle of diversification, encapsulated by the saying, "Don't put all your eggs in one basket." By pooling resources, mutual fund investors can achieve a level of diversification that might be financially unattainable individually, reducing the risk that losses in one asset outweigh gains in another.

Mutual funds can be categorized as either open-end or closed-end funds. An open-end mutual fund does not have a fixed number of shares; instead, its share count fluctuates as investors buy or sell. Shares in an open-end fund can be purchased or redeemed at any time at the current market price, providing liquidity and flexibility for investors.

History of Mutual Funds:

The concept of the modern mutual fund originated in Belgium in 1822 and quickly spread to Great Britain and France. Mutual funds gained popularity in the United States during the 1920s and have remained widely favored, particularly open-end mutual funds, since the 1930s. The industry experienced remarkable growth after World War II, especially during the 1980s and 1990s.

In India, the Life Insurance Corporation (LIC) launched its mutual fund in June 1989, followed by the General Insurance Corporation (GIC) in December 1990. A significant milestone came in 1993 with the entry of private sector funds, which ushered in a new era for the Indian mutual fund industry by offering investors a broader range of fund families. This year also saw the introduction of the first Mutual Fund Regulations, which mandated all mutual funds, except for the Unit Trust of India (UTI), to be registered and regulated.

The first private sector mutual fund in India, Kothari Pioneer (now part of Franklin Templeton), was registered in July 1993. Over time, the number of mutual fund houses grew, with many foreign funds entering the Indian market and the industry witnessing several mergers and acquisitions. By January 2003, there were 33 mutual funds managing total assets of Rs.1,21,805 crores, with UTI leading at Rs.44,541 crores in assets under management.

In February 2003, the repeal of the Unit Trust of India Act, 1963, led to UTI's bifurcation into two separate entities. The Specified Undertaking of the Unit Trust of India (SUUTI) managed assets worth Rs.29,835 crores as of January 2003, which included the US-64 scheme, assured return schemes, and other select schemes. SUUTI operates under the governance of an administrator and the rules framed by the Government of India, remaining outside the purview of Mutual Fund Regulations.

MUTUAL FUND PROSPECTUS:

At first glance, a prospectus can seem daunting. It is often lengthy, filled with tables and graphs, and written in technical and legal language. However, this document is designed to help you make informed decisions before investing in a mutual fund. To navigate it effectively, focus on the following key sections:

Investment Objective: A concise statement outlining the fund's goals, which could range from achieving short-term growth to ensuring long-term stability.

Investment Strategy: Details how the fund intends to achieve its objectives, including the types of assets it plans to invest in.

Fees and Expenses: Mutual funds, like any business, aim to generate profits. They charge shareholders various fees and expenses, all documented in the prospectus. A table at the beginning of the document breaks down these fees and includes a hypothetical projection of their impact on a Rs.10,000 investment over 10 years, allowing for easy comparison between funds.

Account Information: Provides basic details on how to buy and sell shares and manage your account. It also outlines the available redemption methods for withdrawing funds.

Risks: One of the most critical sections, this highlights the risks the fund takes and those associated with its specific investments.

Performance: Includes data on the fund's performance over the past 10 years. While past performance is not a guarantee of future results, it shows how the fund has historically compared to benchmarks like the S&P 500. This section also covers factors such as volatility, dividend payments, and turnover rates.

Management: Lists the fund managers' names, qualifications, and experience. This information can help assess their expertise and track record in managing other funds, providing insight into their strategies and results.

MUTUAL FUND SHARE CLASSES:

Morningstar, a widely recognized authority in investment research, categorizes stocks into eight distinct types based on objective financial criteria and its proprietary algorithm. These classifications reflect broad investment characteristics and economic fundamentals. The types are as follows:

Distressed: Companies facing serious operational challenges, such as declining cash flow, negative earnings, or high debt levels. These "turnaround" stocks are highly risky but may present intriguing investment opportunities.

Hard Asset: Companies primarily involved in the ownership or exploitation of tangible assets like real estate, metals, or timber. They typically have a low correlation with the overall stock market and are often viewed as inflation hedges.

Cyclical: Businesses whose performance closely tracks the broader economic cycle. These companies thrive during economic booms but struggle during recessions, with growth stalling or even turning into losses.

Speculative Growth: Companies with inconsistent or negative profitability but high potential for future profits. These are risky investments, as many such companies fail to achieve profitability and may face bankruptcy. However, successful speculative growth firms can transform into world-class companies.

Aggressive Growth: More mature than speculative-growth companies, aggressive-growth firms exhibit rapid profit growth alongside sales growth. These companies demonstrate greater staying power and begin generating substantial earnings.

Classic Growth: Companies in their prime, consistently delivering steady growth, high returns on capital, positive free cash flows, and increasing dividends. While their growth is slower than aggressive-growth firms, they are highly reliable money-makers.

Slow Growth: These companies have matured, with their growth rates significantly reduced. They focus on paying out the bulk of their earnings as dividends rather than reinvesting in the business, offering investors stability and income.

High Yield: Similar to slow-growth companies, high-yield firms prioritize distributing earnings to shareholders through dividends. These companies often have high payout ratios and are favored by income-focused investors.

PROFESSIONAL MANAGEMENT & RANKING OF MUTUAL FUNDS:

Professional Management

Mutual funds are managed by professional investment managers who make informed decisions about buying and selling securities. These managers determine how the pooled funds will be allocated among various investment opportunities, which are often complex and diverse. Their responsibilities include evaluating available options, assessing associated risks and potential returns, understanding transaction costs, and adhering to industry laws and regulations. Professional management aims to maximize returns while managing risk on behalf of investors.

Ranking

Mutual funds are ranked based on their performance both as individual entities and in comparison to their peers. Companies like Morningstar provide an industry-recognized rating system to assess mutual funds. Morningstar uses a one-to-five star system, with five stars indicating the highest quality.

Funds are rated on how well they have performed after accounting for risk and sales charges, relative to similar funds. Within each category:

- The top 10% of funds receive five stars.
- The bottom 10% receive one star.

MUTUAL FUND ANNUAL REPORT:

Every year mutual funds send each investor an Annual Report. The Annual Report includes a list of the fund's financial statements, a list of the fund's securities, and explanations from the fund's management as to why the fund performed as it did for the previous year.

CONCLUSION:

With the structural liberalization policies no doubt Indian economy is likely to return to a high grow path in few years. Hence mutual fund organizations are needed to upgrade their skills and technology. Success of mutual fund however would bright depending upon the implementation of suggestions. With regard to the Mutual Fund investor we are of the view that the investor needs to adopt two crucial skills for successful investing i.e. a sense of timing and investment discipline both need to be adopted at the same time.

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A Study on the Impact of Selected Macro-Economic Factors on Share Price Movement of Certain Vital Sectors

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Abstract

Investment decisions are highly influenced by macroeconomic variables as changes in macroeconomic variables effect stock markets differently according to the country economic conditions and government policies. The study contributes by determining the effect of various macroeconomic variables on stock prices this study will be useful for the investors who might be able to identify some basic economic variables that they should focus on while investing in stock market and will have an advantage to make their own suitable investment decisions.

Keywords: *Share market, inflation, investments, cement, information technology*

Introduction

In finance a share may be a unit of account for numerous financial instruments as well as stocks, mutual funds and limited partnerships. In British English, the usage of the word share alone refer exclusively to stocks is therefore common that it virtually replaces the word stock itself. In simple words, a share or stock may be a document issued by an organization that entitles its holder to be one among the owners of the company. A share is issued by an organization or is purchased from the stock exchange. By owing a share one will earn a little and selling shares stockholder gets financial gain. So, the return is that the dividend and the financial gain. However, the investors also run a risk of constructing a financial loss if the share is oversubscribed below the buying value.

Objectives

To study the share price movements in certain sectors like Cement and Information Technology, Power due to the impact of certain Macro-economic factors like Inflation, Call Money Rate, Sensitivity Index, Dollar Value, Deposit Rate, Investments by Foreign Institutional Investors.

Statement of the Problem

Investment decisions are highly influenced by macroeconomic variables as changes in macroeconomic variables affect stock markets differently according to the country's economic conditions and government policies. The study contributes by determining the effect of various macroeconomic variables on stock prices this study will be useful for the investors who might be able to identify some basic economic variables that they should focus on while investing in the stock market and will have the advantage to make their own suitable investment decisions. Many different kinds of investors would find this study as an assistant, especially, individual investors, portfolio managers, institutional investors and foreign investors.

Need for the Study

Apart from the company's performance, Profitability, etc… investors can know how far the external factors have an impact on the share price variations to enable them to make informed investment decisions.

Scope of the Study

The study mainly concentrates on certain sectors and certain companies. The study would be helpful for the investors for making prudent investment. The companies are selected based on market capitalization of the shares. The major macro-economic factors are taken in to consideration.

Limitations of the Study

1. The area of study is restricted to certain sectors and certain companies and hence the results may not be extended to other companies.

2. Due to the time constraint, the sample size is restricted.

3. Many other aspects other than the factors selected may cause the share prices to change.

4. Only some of the external factors are taken, due to the time constraint

Review of Literature

Galbraith (1954) has found that the Great Crash of 1929 was followed by boom. Due to rapid economic growth of the 1920s created euphoria in investment. The Element of loan from brokers added fuel in it i.e. dangerous leverage. All these are due to irrational investors.

DeLong and Summers (1989) show that the variance of real GNP was not much higher during the financial panics from 1890-1913 than during non-panic periods. Schwert (1988) shown that the standard deviation of both stock returns and industrial production growth are higher during recessions than during expansions.

Schwert (1989a, b) shown that volatility was higher during recessions and around the major banking panics in the nineteenth and early twentieth century. Negative returns lead to larger increases in volatility than do positive returns. The risk borne by investors in the stock market, and where stock volatility reflects uncertainty about more fundamental economic aggregates, they provide information about the health of the economy.

White Eugene N. (1990) found that the major reason for the crash of 1929 was the irrational behavior of the investor. The mania of the investor was also due to expansion of broker's loan. Fundamentals of certain companies were supported it. Many people who had never bought stock before entered the market.

Avadhani V.A. (2008) has noted that trading on May 5th 2000 was Teji (Bullish) while trading the next day May 8th, was Mandi (Bearish) both involving wide wings of 140 to 230 points in a day and both sawed by market rumors and sentiment.

Avadhani V.A. (2008) had mention in his book, if purchases of FIIs are more than sales involving a net long position, the market may turn out to be Bullish and if net sales are more involving a short position, the market turn Bearish.

Ahmed Gauher and Syed Abdul Malik (2009) had shown that according to the Indian establishments, India is not going to be much touched by the crisis if growth rate of some 8 to 9 percent is going to hold good. But according to the first or preliminary symptoms, the Indian Economy is also going to be hit by the crisis, as already there is a crisis of liquidity in the economy and the estimates of the growth rates are also being lowered.

Kawai (2008) described subprime story: Bubble burst in 2008, collapse of the financial system of US, affected global level.

Research Methodology

Area of the Study: All the companies in the equity market listed in National Stock Exchange.

Sampling Method: In this study, purposive sampling method is used a type of non-probability sampling, where the researcher purposively chooses the particular units of the universe for constituting a sample on the basis that the small mass that they so select out of a huge one, will be typical or representative of the whole.

Sample Media: Sample media for the present research is based on the market capitalization of shares

Sample Unit: Each and every company in the equity market listed in national stock exchange has been treated as the sample unit by the researcher.

Sample Size: Eight sectors, each with three companies, having a sample size of 24 has been decided by the researcher.

Sample Design: Descriptive design is used for the following purpose in this research study,

- To describe the share price fluctuations in the equity market in certain sectors.

- To estimate the factors that causes the share prices in the equity market to change.

Source of the Study

The study is primarily based on the secondary data which have been collected from various marketing research books, company brochures, statistical books, journals, magazines, reports and publications of various associations connected with business, and industry, stock exchanges etc, public records and statistics, historical documents and other sources of published information, and through literature review.

Statistical Tools

The following statistical tools are used to analyze the data, Regression coefficient, ANOVA and T-Test.

Data Analysis and Interpretation

Table 1

Regression Analysis Cement Sector	Multiple R	Multiple R^2	Adjusted R^2	Std. Error of Estimate Se
INDIA	0.955	0.913	0.808	16.434
GUJARAT	0.716	0.513	0.000	32.217
ACC	0.976	0.952	0.894	4.411

Table 2

Cement Sector	Source	SS	Df	MS	F	P-value
India Cement	Regression SSR	14,097.6123	6	2,349.6020	8.70	.0156
	Residual SSE	1,350.4162	5	270.0832		
Gujarat Ambuja Cement	Regression	5,455.8967	6	909.3161	0.88	.5692
	Residual	5,189.7377	5	1,037.9475		
ACC	Regression	1,930.0375	6	321.6729	16.53	.0037
	Residual	97.3016	5	19.4603		

From the above table,

- Probability value of India cement (.0156) < significance level (0.05). So, Null hypothesis is rejected.

- Probability value of Gujarat Ambuja cement (0.5692) > significance level (0.05). So Null hypothesis is accepted

- Probability value of ACC cement (0.0037) < significance level (0.05), Null hypothesis is rejected

It is clear that share price variations of India cement and ACC are dependent on some of the factors.

Table 3

Cement Sector	Calculated Probability Value	Significance Level	Accept Ho/Reject Ho
India Cement			
Inflation	.5503	0.05	Accept Ho
Call money Rate	.7375	0.05	Accept Ho
Sensex	.0091	0.05	Reject Ho
Deposit rate	.2744	0.05	Accept Ho
Dollar value	.5558	0.05	Accept Ho
FII	.0364	0.05	Reject Ho
Gujarat Ambuja Cement			
Inflation	.1525	0.05	Accept Ho
Call Money Rate	.3308	0.05	Accept Ho
Sensex	.3490	0.05	Accept Ho
Deposit rate	.7481	0.05	Accept Ho
Dollar value	.5321	0.05	Accept Ho
FII	.6175	0.05	Accept Ho
ACC			
Inflation	.0637	0.05	Accept Ho
Call Money Rate	.3350	0.05	Accept Ho
Sensex	.0006	0.05	Reject Ho
Deposit rate	.0553	0.05	Accept Ho
Dollar value	.5647	0.05	Accept Ho
FII	.4925	0.05	Accept Ho

Interpretation

- The variations of share price of India cement is dependent on Senex and FII.
- The variations of share price of Gujarat Ambuja cement is Independent on the factors.
- The variations of share price of ACC cement is dependent on Sensex.

Table 4: Regression analysis

IT Sector	R	R^2	Adjusted R^2	Std. Error
WIPRO	0.942	0.887	0.752	16.414
INFOSYS	0.783	0.613	0.150	14.643
SATYAM	0.953	0.908	0.798	10.078

Table 5: ANOVA Table

Cement Sector	Source	SS	Df	MS	F	P-value
Wipro	Regression	10,587.6354	6	1,764.6059	6.55	.0285
	Residual	1,347.0685	5	269.4137	-	-
Infosys	Regression	1,701.6146	6	283.6024	1.32	.3883
	Residual	1,072.0436	5	214.4087	-	-
Satyam	Regression	5,017.8862	6	836.3144	8.23	.0176
	Residual	507.8301	5	101.5660	-	-

From the above table,

- Probability value of Wipro (.0285) < significance level (0.05) ,So Null hypothesis is rejected.

- Probability value of Infosys (.3883) > significance level (0.05), So Null hypothesis is accepted

- Probability value of Satyam (.0176) < significance level (0.05) ,So Null hypothesis is rejected

It is clear that share price variations of Wipro and Satyam are dependent on some of the factor.

Table 6

IT Sector	Calculated Probability Value	Significance Level	Accept Ho/Reject Ho
Wipro			
Inflation	.0179	0.05	Reject Ho
Call Money Rate	.1680	0.05	Accept Ho
Sensex	.0135	0.05	Reject Ho
Deposit rate	.7303	0.05	Accept Ho
Dollar value	.9966	0.05	Accept Ho
FII	.6794	0.05	Accept Ho
Infosys			
Inflation	.9860	0.05	Accept Ho
Call Money Rate	.5437	0.05	Accept Ho
Sensex	.1423	0.05	Accept Ho
Deposit rate	.4391	0.05	Accept Ho
Dollar value	.9483	0.05	Accept Ho
FII	.1691	0.05	Accept Ho
Satyam			
Inflation	.0868	0.05	Accept Ho
Call Money Rate	.7740	0.05	Accept Ho
Sensex	.0033	0.05	Reject Ho
Deposit rate	.2846	0.05	Accept Ho
Dollar value	.0121	0.05	Reject Ho
FII	.9866	0.05	Accept Ho

Interpretation

- The variations of share price of Wipro are dependent on Inflation and Sensex.

- The variations of share price of Infosys are Independent of the factors.

- The variations of share price of Satyam are dependent on Sensex and Dollar value.

Findings

Cement sector

- The share price movements of India Cement are influenced by Sensex and FII.

- While, the share price movements of Gujarat Ambuja Cement is Independent of the factors.

- In case of ACC Cement the share price movement is influenced by Sensex.

IT sector

- Inflation and Sensex has an impact on the share price movement of Wipro.

- The considered Macro economic factors do not have an impact on the share price movement of Infosys.

- In case of Satyam share price variations is dependent on Sensex and Dollar value.

Conclusion

The study says that Sensex is the major factor having an impact on the share price variations in Cement and IT Sectors. FII has an impact on the share price movements in Cement and IT Sectors. Inflation and Dollar value have an impact to certain extent on the share price movements in IT Sector. Further studies can be made by taking many other factors in to consideration. In order to make the investment profitable, various recommendations has also been put forth in this research study.

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The Role of Information Asymmetry in Financial Markets: A Conceptual Analysis

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Abstract

Information asymmetry, a condition where one party holds more or better information than the other, is a critical concept in understanding the dynamics of financial markets. This paper examines the theoretical underpinnings of information asymmetry, focusing on its impact on market efficiency, asset pricing, and corporate governance. By exploring foundational theories like signaling and agency theory and concepts such as adverse selection and moral hazard, this research provides a conceptual framework that reveals how asymmetry affects both investor decision-making and broader market stability. Additionally, recent technological advancements, particularly in financial technology (fintech), are reviewed to understand their role in reducing or exacerbating information asymmetry. This paper aims to offer a comprehensive analysis of how asymmetry shapes modern financial markets and provide insights into emerging areas of research, including the ethical implications and policy challenges posed by new technologies.

Keywords: Information asymmetry, financial markets, market efficiency, agency theory, signaling theory, adverse selection, moral hazard, fintech, transparency, corporate governance, market stability.

Introduction

In financial markets, the flow and accessibility of information are pivotal in shaping investor behavior, asset prices, and market efficiency. Information asymmetry-a condition where some participants have more or better information than others-introduces complex dynamics that influence both individual investment decisions and broader market stability. This asymmetry is foundational to many of the risks, inefficiencies, and behavioral nuances seen in finance. The concept, though originating from economic theory, has implications that extend beyond transactional inefficiencies and plays a role in shaping corporate governance, regulatory approaches, and economic policy.

The impact of information asymmetry can be seen in everyday market interactions, from individual trading decisions to larger-scale corporate transactions. For example, insiders or corporate managers may have private information about their firm's future earnings or strategic

directions, creating an advantage that allows them to make decisions that can directly or indirectly affect market valuations. This uneven information distribution can lead to a variety of adverse outcomes, such as increased price volatility, reduced liquidity, and compromised investor confidence. In some cases, it can even trigger financial crises when misinformation or hidden risks become widespread. Consequently, understanding information asymmetry and its broader implications remains essential for creating fairer and more transparent markets.

Theoretical constructs such as signaling theory and agency theory provide a foundational basis for exploring how information asymmetry manifests in financial markets. Signaling theory suggests that informed parties, like managers or company insiders, can communicate their private knowledge through signals such as dividends, stock buybacks, or voluntary disclosures. Agency theory, on the other hand, explores the conflicts of interest that arise due to differing objectives between parties with unequal information, such as shareholders and company managers. These frameworks help elucidate the challenges associated with asymmetry, including issues like adverse selection-where parties with more information take advantage of those with less-and moral hazard, where one party engages in riskier behavior because they bear less of the financial risk.

Technological advancements in recent years, particularly the rise of financial technology (fintech), have both helped and hindered efforts to address information asymmetry. Blockchain technology, for example, has been widely adopted to create transparent and immutable transaction records, reducing asymmetry by enabling shared access to data. However, complex data analytics, artificial intelligence, and proprietary algorithms have introduced new forms of asymmetry. These tools, often accessible only to large institutions, allow for rapid data processing and pattern recognition, giving these entities an edge over retail investors who may not have access to similar resources. This has introduced new ethical and regulatory challenges, with debates centering on the need to balance innovation with fair access and transparency.

This paper seeks to provide a comprehensive conceptual analysis of information asymmetry in financial markets, exploring its theoretical foundations, practical implications, and the role of emerging technologies. Through an extensive review of relevant literature and a theoretical synthesis, this study examines how information asymmetry continues to shape market behavior and outcomes. Additionally, this paper discusses the need for regulatory frameworks and policy solutions that can mitigate the adverse effects of asymmetry, ensuring a more equitable financial system. This research aims to deepen our understanding of information asymmetry's persistent influence on finance, exploring potential areas for future research and innovation to address the growing complexities of information distribution in modern markets.

Literature Review

1. Fundamental Theories on Information Asymmetry

Signaling Theory: Initially proposed by Spence (1973) in the context of job markets,

signaling theory explains how informed parties use signals, such as dividends, disclosures, and certifications, to convey quality information to reduce asymmetry. In financial markets, signals are often intended to reduce the information gap between company insiders and external investors.

Agency Theory: Developed by Jensen and Meckling (1976), agency theory addresses conflicts of interest between principals (shareholders) and agents (management), who may have access to different sets of information. Information asymmetry in agency relationships can lead to moral hazard, with managers potentially prioritizing personal interests over shareholders' interests.

Adverse Selection and Moral Hazard: Akerlof's (1970) model on adverse selection, popularized through the "Market for Lemons," describes how asymmetry leads to market inefficiencies by discouraging high-quality offerings. In finance, adverse selection occurs when less-informed investors face higher risks due to the hidden attributes of assets, while moral hazard emerges when parties engage in riskier behavior after a transaction due to their information advantage.

2. Impacts on Market Efficiency and Asset Pricing

Market Efficiency and Pricing: According to Fama's (1970) Efficient Market Hypothesis (EMH), markets should fully reflect available information in asset prices. However, asymmetry challenges this hypothesis, as information is often distributed unevenly, allowing informed traders to exploit less-informed investors. Studies by Glosten and Milgrom (1985) demonstrated that information asymmetry affects bid-ask spreads, as market makers adjust prices to mitigate the risk posed by informed traders.

Liquidity and Volatility: Information asymmetry has been linked to reduced market liquidity and higher volatility, as investors demand higher premiums for trading in markets with uncertain information (Bali et al., 2023). The existence of asymmetry can also contribute to market bubbles and crashes, as misinformation or unequal access to data exacerbates irrational trading behavior.

3. Influence of Fintech and Technological Advancements

Transparency and Accessibility: Fintech has expanded access to financial information, enabling a wider demographic to participate in financial markets. Innovations like blockchain increase transparency and data traceability, which may reduce asymmetry by providing a shared, verifiable record of transactions (Haque & Zhang, 2023).

Challenges of Digital Information Asymmetry: Despite these benefits, fintech can also create new asymmetries through complex algorithms that privilege institutional investors, exacerbating information divides (Kumar & Sundaresan, 2022). These tools also raise ethical questions about data privacy and algorithmic bias, adding layers of complexity to information management.

Research Methodology

This study employs a qualitative, conceptual research approach, focusing on a comprehensive literature review to synthesize existing theories and empirical findings related to information asymmetry in financial markets. The research process followed a structured methodology, with each step aimed at collecting, analyzing, and categorizing academic sources that provide insights into the multifaceted effects of information asymmetry. This approach is appropriate for a theoretical paper as it emphasizes the identification and synthesis of established knowledge, building a conceptual foundation for further research.

Data Collection

Literature Review Approach: Academic journals, conference papers, and books were sourced from reputable databases, including JSTOR, ScienceDirect, and IEEE Xplore. Given the broad scope of this topic, the search was refined using keywords such as "information asymmetry," "signaling theory," "agency theory," "adverse selection," "moral hazard," and "financial technology." This search yielded a mix of foundational works and recent studies, ensuring that the review includes both classical theories and contemporary insights.

Selection Criteria: To maintain rigor, sources were selected based on relevance, citation frequency, and peer-reviewed status. The inclusion criteria emphasized studies published within the last 20 years, although seminal works predating this period were also included to provide historical context. Studies with a clear focus on financial markets and theoretical analyses of information asymmetry were prioritized.

Technology-Specific Literature: Given the rise of fintech and digital platforms, additional searches were conducted on the impact of blockchain, AI, and data analytics on information asymmetry. This subset of literature aimed to address the evolving nature of asymmetry in digital finance, focusing on the opportunities and risks posed by these technologies.

Data Analysis

Thematic Coding and Categorization: A thematic analysis was conducted to organize the literature into major themes, including foundational theories (signaling and agency theory), market impacts (pricing, liquidity, and volatility), and the role of technological advancements. Each study was coded based on its primary focus, allowing for the identification of recurring themes and unique insights. This approach provided a clear structure for the conceptual framework, facilitating a comprehensive understanding of information asymmetry.

Comparative Analysis of Theoretical Models: The selected literature was reviewed to compare and contrast the primary theoretical frameworks that underpin information asymmetry. This involved an in-depth analysis of signaling theory, agency theory, and models of adverse selection and moral hazard, highlighting both the commonalities and distinctions among them.

This comparative approach helped to establish a nuanced understanding of the theoretical landscape surrounding information asymmetry.

Integration of Technological Developments: The analysis also included a specific focus on fintech literature, with studies categorized based on their impact on information transparency, access, and ethical considerations. Each piece of technology (e.g., blockchain, AI) was assessed for its potential to either reduce or exacerbate information asymmetry, offering insights into the role of innovation in modern finance.

Conceptual Framework Development

Synthesis of Findings: Based on the thematic and comparative analysis, a conceptual framework was developed to illustrate the interrelationships among the key theoretical concepts, market effects, and technological factors related to information asymmetry. This framework provides a structured understanding of how asymmetry functions within different market contexts, highlighting areas where asymmetry is most impactful.

Identification of Gaps and Future Research Opportunities: As part of the analysis, gaps in the existing literature were identified, particularly in the context of digital finance. These gaps suggest avenues for future research, such as the need for empirical studies on the long-term impact of fintech on market asymmetry, or the effectiveness of regulatory interventions in managing asymmetry.

Limitations

Scope of Literature: This study is limited by its reliance on secondary data, with an emphasis on previously published theoretical and empirical studies. While this approach provides a broad conceptual overview, it does not include primary data or case studies, which could provide a more applied perspective.

Evolving Nature of Fintech: Given the rapid development of financial technology, some of the fintech-related insights may be subject to change as new technologies emerge. Consequently, the findings regarding digital finance and asymmetry should be considered within the context of ongoing technological advancements.

Analysis

Impact of Asymmetry on Financial Market Dynamics

The analysis highlights how information asymmetry influences strategic behavior among market participants. For example, corporate insiders with exclusive knowledge may engage in insider trading, benefiting from asymmetric information at the expense of retail investors. Similarly, in lending markets, banks may charge higher interest rates to borrowers due to uncertainty regarding creditworthiness.

Comparative Analysis of Theoretical Perspectives

Foundational theories such as signaling and agency theory provide frameworks for understanding the persistence of information asymmetry in financial transactions. While signaling helps reduce asymmetry through transparent disclosure, agency theory suggests that asymmetry can rarely be fully mitigated due to conflicting interests. The persistence of asymmetry calls for sophisticated governance and disclosure practices to maintain market trust.

Technological Advances and New Forms of Asymmetry

Technological innovation, particularly in blockchain and AI-driven data analysis, has significantly impacted information asymmetry. Blockchain enhances transparency by decentralizing data, making it accessible to all market participants. However, the complexity of data analytics and AI models can exacerbate asymmetry as these tools are often accessible only to well-resourced institutional investors, potentially widening the information gap.

Major Findings

- Enduring Role of Information Asymmetry in Markets

While technological advancements have addressed some asymmetries, they have not eliminated them. Asymmetry persists due to inherent differences in information access and understanding between market participants, from institutional investors to retail traders.

- Dual Impact of Fintech

Fintech plays a dual role in information asymmetry. On one hand, it promotes transparency and democratizes information. On the other hand, it introduces new risks and asymmetries related to data privacy and algorithmic access.

- Implications for Policy and Governance

Policymakers and regulators need to address asymmetry's adverse impacts by promoting transparency and accountability. Effective governance frameworks, ethical AI practices, and enhanced disclosure standards are necessary to prevent exploitation and protect retail investors.

Conclusion

This paper underscores the ongoing relevance of information asymmetry in shaping financial market dynamics. While technological innovation offers new avenues for mitigating asymmetry, complete transparency remains an ideal. Regulatory oversight, corporate governance, and financial literacy are essential in creating fairer markets. Future research should explore specific fintech applications, examining both their potential for reducing asymmetry and the risks they pose in exacerbating new forms of inequality.

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A Study on Efforts to Promote Financial Literacy Globally

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Abstract

This study examines global initiatives taken for promoting financial literacy, recognizing its critical role in fostering economic stability and individual empowerment. As financial products and markets become increasingly complex, understanding financial principles is essential for proper decision-making. The research highlights various programs implemented by governments, non-profits, and educational institutions worldwide, analysing their strategies, effectiveness, and challenges. This study is done for continued investment in various instrument as a means to build and empower individuals to boost their confidence.

Keywords: Decision making, Economic stability, Educational institution, Financial products, Global initiatives

Introduction:

Promoting the financial literacy on the global scale is very much crucial for empowering the individuals, predict the economic stability and ensuring the sustainable development of the world. Make an effort to magnify the financial literacy and educating the people regarding the same for all ages and background of basic financial concepts such as budgeting, savings, and investment and managing the debt.

It is observed that in the recent year's government, non-profit organizations and financial institutions have also develop various types of educational programme and campaign for educate the individuals regarding savings and investment for the future financial security. These efforts aim not only to equip individuals with essential financial skills but also to promote economic resilience and reduce inequality.

Through workshops, seminars, online resources, and community outreach programs, stakeholders strive to reach diverse populations, including underserved communities and groups and group of individuals.

What is Financial Literacy?

Financial literacy is the cognitive understanding of financial components and skills such as budgeting, investing, borrowing, taxation, and personal financial management. The absence of such skills is referred to as being financially illiterate.

According to the Financial Industry Regulatory Authority (FINRA), about 66% of the American population is considered financial illiterate.

Being financially literate allows an individual to be better prepared for specific financial obstacle, which, in turn, decreases the chances of personal economic distress. Achieving financial literacy is crucial in today's society due to everyday challenges of life, such as student loans, home loan, car loan, mortgages, credit cards, investments, health insurance and many more.

Fundamental components of Financial Literacy:

Financial literacy consists of several financial components and skills that allow an individual to gain knowledge regarding the effective management of money and debt.

Obtaining financial literacy is one of the most important things an individual can do to ensure for financial stability.

| budgeting |
| investing |
| borrowings |
| taxation |
| personal financial mamagement |

1. Budgeting:

There are four uses for money that determine a budget they are spending, investing, saving and giving way. Creating the right balance throughout the primary uses of money allows individuals to better allocate their income, resulting in financial security and prosperity. In general, a budget should be composed in a way that pays off all existing debt while leaving money aside for saving and making beneficial investments.

2. Investing:

To become financially literate, an individual must learn about key components in regards to investing. Some of the components that should be learned to ensure favourable investments are interest rates, price levels, diversification, risk mitigation, and indexes. Learning about crucial

investment components allows individuals to make smarter financial decisions that may result in an increased inflow of income.

3. Borrowings:

In most cases, almost every individual is required to borrow money at one point in their life. To ensure borrowing is done effectively, an understanding of interest rates, compound interest, and time value of money, payment periods, and loan structure is crucial. If the criteria above are understood sufficiently, an individual's financial literacy will increase, which will provide practical borrowing guidelines and reduce long-term financial stress.

4. Taxation:

Gaining knowledge about the different forms of taxation and how they impact an individual's net income is crucial for obtaining financial literacy. Whether it be employment, investment, rental, inheritance, or unexpected, each source of income is taxed differently. Awareness of the different income tax rates permits economic stability and increases financial performance through income management.

5. Personal Financial Management:

The most important criteria, personal financial management, includes an entire mix of all of the components listed above. Financial security is ensured by balancing the mix of financial components above to solidify and increase investments and savings while reducing borrowing and debt. Achieving an in-depth knowledge of the financial components discussed above guarantees an increase in an individual's financial literacy.

Importance and benefits of financial literacy:

Being financially literate is a skill that brings the benefits to an individual that can improve the standard of living for individuals through an increase in financial stability.

- Ability to make better financial decisions

- Effective management of money and debt

- Greater equipped to reach financial goals

- Reduction of expenses through better regulation

- Less financial stress and anxiety

- Increase in ethical decision-making when selecting insurance, loans, investments, and using a credit card

- Effective creation of a structured budget

- Financial literacy can prevent financial mistakes.

- Financial literacy can prepare people for financial emergencies.

- It can help individuals to reach their goals.

- It gives rise to confidence about financial matters.

Making steps to becoming financially literate is an important component of life that can ensure financial solidity, reduce anxiety, and stimulate the achievement of financial goals.

How to promote Financial Literacy?

Promoting financial literacy globally is crucial for empowering individuals and communities to make informed financial decisions. Here are some effective efforts to achieve this:

1. Educational Programs:

Introducing financial literacy education early in schools helps build foundational knowledge. Curricula can cover budgeting, saving, investing, and understanding credit.

2. Public Awareness Campaigns:

Governments and NGOs can run campaigns to raise awareness about the importance of financial literacy and provide basic tips for managing money effectively.

3. Workplace Programs:

Employers can offer financial education workshops or seminars to help employees understand retirement plans, investment options, and managing debt.

4. Mobile Apps and Online Tools:

Developing user-friendly apps and online platforms that provide financial tips, budgeting tools, and investment guidance can reach a broader audience, especially younger generations.

5. Partnerships with Financial Institutions:

Collaborating with banks and financial institutions to offer free seminars, webinars, or one-on-one sessions on financial planning and investment strategies.

6. Government Policies and Incentives:

Governments can implement policies that promote financial literacy, such as requiring financial education in schools or offering tax incentives for participating in financial education programs.

7. Community Workshops and Events:

Hosting workshops, community events, or fairs where financial experts provide free advice and information on topics like managing debt, planning for retirement, or starting savings accounts.

8. Microfinance and Small Business Support:

Providing support for microfinance initiatives and small business development, coupled with financial literacy training, helps entrepreneurs manage their finances effectively.

9. Targeted Programs for Vulnerable Groups:

Tailoring programs for specific demographics like immigrants, seniors, or low-income families who may have unique financial challenges or limited access to traditional banking services.

10. International Collaboration:

Encouraging collaboration between countries and international organizations to share best practices, research, and resources for promoting financial literacy globally.

By implementing these efforts, we can foster a more financially literate global population, leading to better economic stability, reduced poverty, and improved overall well-being.

Conclusion:

Financial literacy matters on many levels. It helps people manage their financial affairs and improve their standard of living. But it also makes an important contribution to the soundness and efficiency of the financial system and to the performance of the economy.

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Financial Literacy Among Women-Indian Scenario

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Abstract

One of the biggest challenges of our country is women empowerment which can only be attained by making women educated, finance liberated and independent. Financial literacy can be understood as the ability to know how money works in a normal course of action. Specifically, it refers to the set of skills and knowledge that allows an individual to make informed and effective decisions with all of their financial resources. In India, virtually women are the main spender of the family whereas the men are the principal earner of the family. Although women's access to financial services has increased substantially faster in the past 10 years, their ability to exploit this access is often still limited by the disadvantages they experience because of their gender. Women are good at budgeting and managing household expenses but many women take their steps back when itcomes to take larger financial decisions and they generally leave it to their spouses, fathers, brothers, etc, believing them to be financial experts. A minimum basic level of financial literacy is very essential for every woman so that they can live their life according to their own choices hence contributing the healthy and prosperous life of their family as a whole. Women have enormous potential to contribute towards the growth of the economy hence a financially independent women can be a great source of economic development. The purpose of this study was to give an overview about the financial literacy among women in developing country like India.

Keywords: Financial Literacy, Women Empowerment, Financial Decisions and Economic Development, Independent women.

1. Introduction

One of the biggest challenges for our nation is women empowerment which can only be attainable when they will be educated and financially literate and independent. A financially independent individual is able to make intellectual judgments and take effective choices regarding the usage and management of money (Noctor et al., 1992). It is very encouraging to see that today women are at par with men in all fields but when it comes to financial decision-making, they are still dependent on the male members of their family. Since ages, this world has been a male dominated world, where men run the society and women follow him. Women are the important constituent of our society; rather they are the basis of human kind. It is rightly said that

if we made a women literate whole family becomes literate. In 2015, the world literacy was 86.3%, among which 82.7% of women were literate.

These women, not only play an important role socially, but economically also. In India, virtually women are the main spender of the family whereas the men are the principal earner of the family. In earlier times the status of women was inferior compared to men as they are considered to be the perfect homemaker in the world, who is supposed to do the work of home and raise the family only. Though they had a higher status in scriptures, they are preached in different names like Goddess Durga, Goddess Saraswati, and Goddess Kali and so on. In modern times too their condition is not improved much, they were always under the influence of their parents before marriage and their husband after marriage. However, the status of women in the modern time starts improving. Now women were given freedom & right such as freedom of expression & equality as well as the right to be educated. At this period various prestigious positions were held by women. However, some problems such as domestic violence, dowry, sex selective abortion, are still prevalent.

The government has taken various steps for empowering women. In this regard the government has established The Ministry for Women & Child Development as a department of the Ministry of Human Resource Development in the year 1985 to make the holistic development of women and children in the country and in the year 2006 the department was given the status of a Ministry. The ministry has levied with the power to formulate programs, policies and plans; coordinate and supervised the efforts of governmental and non- governmental organizations working in the field of women empowerment. The ministry is also executing an exclusively integrated scheme for the empowerment of women named as Swayamsidha Program with core motive of establishing women's self- help group which will help women to have increased access to all kinds of resources which they normally denied, in addition to this, helps in increasing their awareness and skills thus actually feel them empowered. Although women's access to financial services has increased substantially faster in the past 10 years, their ability to exploit this access is often still limited by the disadvantages they experience because of their gender. Same is the situation with the financial literacy. There is a gender gap between men and women in almost every country in case of financial literacy as well.

Worldwide, there is a five-point gender gap, with 27% of women not being financially literate compared with 33% of men (march 2024), While women are less likely to provide correct answers to the financial literacy questions, they are also more likely to indicate that they "don't know" the answer. Women are good at budgeting and managing household expenses but many women take their steps back when it comes to take larger financial decisions and they generally leave it to their spouses, fathers, brothers, etc, believing them to be financial experts. Women are less experienced about the basic aspects of financial life. Usually, they leave everything to their spouses not realizing the trouble they might have to suffer in the event of widowhood, divorce, spouse's incapacitation, etc. A minimum basic level of financial literacy is very essential

for every woman so that they can live their life according to their own choices and take their saving & investment decisions in more effective and efficient manner hence contributing the healthy and prosperous life of their family as a whole. The purpose of this study was to give an overview about the financial literacy among women in developing country like India. The purpose of this study was to give an overview about the financial literacy among women in developing country like India. This study was based on the concepts retrieved from the various facts and figures and previous studies.

2. Financial Literacy

Financial literacy can be understood as the ability to know how money works in a normal course of action. Specifically, it refers to the set of skills and knowledge that allows an individual to make informed and effective decisions with all of their financial resources. Financial literacy is directly related to the wellbeing of an individual and society as a whole, since it helps an individual to manage their personal financial matters like savings, investments, tax planning, retirement planning, etc. and enables them to understand how more money can be generated and used in more effective and efficient manner.

Noctor et.al (1992) defined financial literacy as 'the ability to make informed judgments and to take effective decisions regarding the use and management of money'.

Moore (2003) stated that "Individuals are considered financially literate if they are competent and can demonstrate they have used knowledge they have learned. Financial literacy cannot be measured directly so proxies must be used. Literacy is obtained through practical experience and active integration of knowledge. As people become more literate they become increasingly more financially sophisticated and it is conjectured that this may also mean that an individual may be more competent".

Mandell (2007) defined financial literacy as "The ability to evaluate the new and complex financial instruments and make informed judgments in both choice of instruments and extent of use that would be in their own best long-run interests".

Lusardi (2008) define financial literacy as "Knowledge of basic financial concepts, such as the working of interest compounding, the difference between nominal and real values, and the basics of risk diversification".

The Organization for Economic Co-operation and Development (OECD) has defined financial literacy as "a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual wellbeing".

As per Reserve Bank of India, financial literacy can broadly be defined as the capacity to have familiarity with an understanding of financial market products, especially reward and risks in order to make informed choices.

The National Financial Educators Council defines financial literacy as: "Possessing the skills and knowledge on financial matters to confidently take effective action that best fulfils an individual's personal, family and global community goals."

Although the definitions given by different organizations and authors are varied, some similar components in each financial literacy's definition are found. Each definition of the financial literacy has focused on the importance of having the financial skill and knowledge to make informed decisions.

3. Importance of Financial Literacy

In today's scenario, emerging as well as developed economies has started giving very much focus on the level of financial literacy of their people. The financial system plays a very significant role in the development of any nation. Financial ignorance carries significant costs. Consumers who fail to understand the concept of interest compounding spend more on transaction fees, run up bigger debts, and incur higher interest rates on loans (Lusardi and Tufano, 2015; Lusardi and de Bassa Scheresberg, 2013).

3.1. Increase in Life Expectancy

Now a day, the people become more conscious about their health and improvements in health care services has increased the life expectancy in India, which results in a longer time to spend in retirement. This will certainly increase the need of financial planning such as savings for post-retirement, investment decisions, expanded insurance plans and provision for unexpected future eventualities. Only knowing the importance of financial planning is not enough, the individual must know how they can make their financial planning in better way so that their purposes could be achieved. For doing better financial planning one must know the basic concepts of money management like computation of compound interest, risk diversification etc. Hence focusing on the importance of having minimum level of financial literacy.

3.2. Innovations in Financial Products/ Services and Technological Development

Liberalization, development in technology, deregulation and increased level of financial inclusion provides a wide range of financial products and services delivering through various channels thus providing consumers more choices to invest their savings. The available products are more complex in nature thus required some factors to be taken care of such as interest charged/ received, fees charged and level of risk involved etc. The greater opportunity available in financial products/services could only be utilized when one can have the better knowledge and must be aware about it. Since there is a wider range of options for savings one must have the skills to analyze which option is better for them and which will help them in accumulating their wealth. The development in technology has changed the functioning of the financial markets and

making the transactions speedier. Financial literacy helps the individual to make their financial decisions in more effective and efficient manner thus helping in wealth accumulation. Moreover, due to technological development now days almost every bank provides their services with the help of internet banking and also through various mobile apps thus providing ease in accessing the financial services. But only knowing this is not enough, one must have the skills and knowledge of using these apps, must have the skills to identify the authentic apps because these are not free from cyber theft. Hence, financial literacy becomes important.

3.3. Shift in Risk

The risk has been transferred from government and employer both to individuals. Now, one has to plan their financial security by themselves so that they can secure their future and may save their money for after retirement period. Every financial products/ service involves certain risk but due to increased complexities in the financial market the financial products/ services become riskier. Many times, people are unaware of the risk they might have to face due to lack of financial knowledge and skills. Since the risk is shifted to individual only, they have to be more alert in investing their money, managing their portfolios so that their money can be invested in such a manner that it helps in their wealth accumulation as a whole. Most surveys show that a majority of workers are unaware of the risks they now have to face, and do not have sufficient knowledge or skill to manage such risks adequately, even if they are aware of them (OECD, 2008). So being aware only regarding financial market or product/ services may not fulfill the purpose, one must have the skills and knowledge to analyze the information available properly then only the investments in financial market proves to be profitable.

3.4. Change in the Structure of the Family

Earlier, in joint family the decisions were taken by the head of the family with the consent of every member and each and every one is accountable for that decision. The profit earned or the loss suffered was shared among everyone in the family, no one is solely responsible for profit or accountable for loss. Now days the structure of nuclear family increases the responsibilities of individuals in respect of spending, saving and investment. The conception of nuclear family appeared in the early twentieth century. The concept of Liberalisation, Privatisation and Globalisation opens the greater job opportunity which increases the mobility of an individual. For grabbing the better opportunities, the individual starts moving from their native places and thus get separated from their whole family. Since the nuclear family consists of only husband, wife and their children so the responsibility of decision-making is on the two persons only. The individual is only responsible for their decisions and may have to face consequences of their choice. Moreover, it becomes very important for parents to plan and invest adequately for their children's education because of increase in education costs. Individuals need to be financially literate so that they can make informed and accountable decisions.

4. Review of Literature

Annamaria Lusardi (2006) conducted a study on Planning and Financial Literacy: How Do women Fare? The objectives of the study were to examine the saving behavior of women, to analyse how women plan for retirement, tools & sources of information used for planning and to analyze the financial literacy of women. Study was conducted on 1,264 respondents, among which 60% are women who are of 50 yrs old or older and 64% are married. Regression method and multivariate analysis was used to know the importance of financial literacy and the relationship with planning in the total sample and among women only, and found that women had little financial literacy, retirement calculation was not an easy task particularly for women and they are much more rely on family, friends and advisers for their financial planning.

Martha Klatt, (2009), conducted a study on An Assessment of Women's Financial Literacy. Objective of the study was to identify the barriers preventing knowledge and understanding from being translated into actual behaviour, what resources are needed to provide women with financial information and whether there is a need for more resources and training programs on financial literacy for women. The study was conducted on 300 women aged 16 and above but only 167 women responded out of 300. The mean, variance, and standard deviation were used for analysis and found that there are some barriers that women face in regards to financial matters, trends showing that women are not participating fully in retirement planning and not as comfortable as men in seeking financial advice and also reveals that education plays an important role in the financial literacy of women and there is a need for workshops and seminars on money management and investing are needed. Variables used for the study were Demographic factors, investment decisions and services of financial advisor.

Prajakta Joshi (2013) tries to understand financial literacy and its importance and to understand the current financial literacy initiatives that are taking place in India and other parts of the world in her paper the way of Financial Capability is through financial literacy: Indian and Global Scenario. Her study is based on descriptive analysis and for that she used secondary data from world economic forum, books and journals. The study concluded that in India financial literacy is now on the positive side. The Reserve Bank of India, Commercial Banks, SHGs, NGOs and the government had taken a lot initiative in this field but still coordinated efforts required because majority of the population still lives on day to day earning and are not able to think about savings and investments.

V. Mathivathani and Dr.M. Velumani (2014) conducted a study on Financial Literacy among Rural Women in Tamilnadu; the purpose of the study was to know the level of financial literacy among women in rural areas of Tamilnadu and concluded that financial literacy of marginalized rural women is very low. Study suggests that development of financial literacy would help the women for making better financial decisions, proper utilization of financial services and products. It would also help in wealth accumulation and financial wellbeing which lead to their personal development as well as social development.

Chijwani. M. et al. (2014) conducted a study of financial literacy among working women in Pune. The objective of study is to find out the most popular & preferred investment instruments. The study is conducted on working women in Pune, between age group of 20-40 and who are at leastgraduate. Study is empirical based on survey method and sample was conducted on a random basis. The study found that the most popular investment avenue among the females interviewed is systematic investment plan.

Zulfiqar. M. (2015) conducted a study on women's economic empowerment through financial literacy, financial attitude and financial wellbeing. The objective of the study is to assess the level of financial literacy, financial attitude and financial wellbeing of working women and to examine the relationship between financial literacy, financial attitude, financial wellbeing and economic empowerment of working women. Study is conducted on 300 working women of non- financial sector of Pakistan. Study found that the financial literacy, financial attitude and financial wellbeing are significantly & positively related with economic empowerment.

Pratisha Padmasri Deka (2015) tries to study the relationship between women empowerment and financial inclusion and financial literacy in her paper financial literacy and financial inclusion for women empowerment: A study. The study concludes that financial inclusion and financial literacy is a great step towards achieving women empowerment. But to achieve this, the government has to provide a environment in which banks are free to practice the necessary innovations to reach the low income women without losing their profit.

Akshita Arora (2016) conducted a study on Assessment of Financial Literacy among working Indian women; purpose of the study was to assess the financial literacy level of women. The study was conducted on 700 working women of urban areas of Rajasthan among which only 444 women responded. Three parameters i.e. financial knowledge, financial behavior and financial attitude were used to assess the level of financial literacy and found that the general awareness about financial planning tools and techniques among women remains poor. The study concluded that women are better in terms of financial attitude and behaviour as compared to financial knowledge.

5. Financial Literacy in India

Financial literacy and financial inclusion are two facets of an efficient economy and ensures financial stability in a country. Financial inclusion is on priority in our country and the government has made various strategies on financial inclusion in which various schemes are introduced and awareness campaigns are being held from time to time. Financial inclusion focuses on quantity where more emphasis is on creating more bank accounts at zero balance in to order to provide ease in access of basic banking facilities whereas financial literacy is more about quality where emphasis is on expanding the knowledge on financial matters and products. Financially literate person is more likely to explore the financial products/ services which was offered by various banks and can use them effectively for their benefits. The Reserve Bank of India launched an

initiative in 2007 to establish Financial Literacy and Credit Counseling Centers throughout the country that offer free financial education and counseling to both urban and rural populations.

Average Financial Literacy Scores and Gender Gap
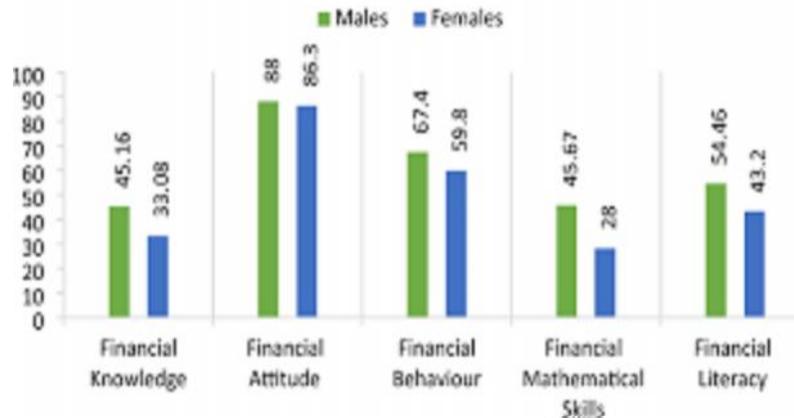
6. Efforts Made in the Field of Financial Literacy

6.1. RBI'S Initiatives on Financial Literacy

The Reserve Bank of India has undertaken a project titled "Project Financial Literacy". The Objective of the project is to disseminate information regarding the central bank and general banking concepts to various target groups, including, school and college going children, women, rural and urban poor, defense personnel and senior citizens. The project has two modules, first module is focused on the economy, functioning and activities of RBI and second module is focused on the general banking functions. The Bank on its web site has also created a link to facilitate easy access to information for the common people; the information is available in 13 regional languages which helps people in their dealings with banks.

6.2. SEBI's Initiatives in the Field of Financial Literacy

Securities and Exchange Board of India (1992) has designed different modules in their financial literacy program at different segments like financial education at school level, at college level. They have different modules for executives, home makers and middle income group. SEBI has their resource person who have the knowledge of financial markets on different aspects and these executives organize different workshops for making aware of basic financial matters like savings, investments, insurance, retirement planning etc to all the target group.

6.3. IRDA'S Initiatives in the Field of Financial Literacy

Insurance Regulatory and Development Authority Act (1999) has taken various initiatives in the field of financial literacy. They conducted different awareness programs and circulated simple messages about the rights and duties of policyholders through television and radio channels.

IRDA conducts an annual seminar on policy holder protection and welfare, and also publishes the "policyholder Handbooks" as well as various comic series on insurance.

6.4. Initiatives by other Banks

Apart from the Reserve Bank of India and other commercial banks, the private banks and multinational banks also do their effort to boost the financial literacy. The initiative in opening FLCCs in the country such as initiative of Bank of India, "ABHAY" Counselling centre and Disha Trust, an initiative of ICICI Bank Ltd. Many other Banks are reaching out to the financially excluded in at least three modes, separately or in combination. "Sarthee" Bank of India's Programme is "Abhay" and Canara Bank Mobile Van called "Canara Gramina Vikas Vahini" while Dena Bank named its programme as "Dena Mitra", Allahabad Bank has named its programme as "Samadhan" (Hemanath, 2012).

6.5. Initiatives by Non-Government Organisation (NGO)

Non-Government Organisations started financial literacy programme as a part of their Self Help Groups development programme. The Mangalore based Institutions started a programme named "Jnana Jyothi Financial Literacy and Credit Counselling Trust" which was jointly sponsored by Syndicate Bank and Vijaya Bank. People's Education and Development Organisation (PEDO), Durgapur. Rajasthan, IBTADA, Alwar, Rajasthan, Centre for Community Economics and Development Consultants Society (CECOEDECON).

7. Barriers to Financial Literacy among Women

7.1. Education

One of the biggest problems of our nation is low literacy rate. In 2015, the world literacy was 86.3%, among which 82.7% of women were literate. The Indian scenario is bit grim where among 72% literate persons, 65.46% women were literate whereas 82.14 % men were literate. Moreover, literacy rate among urban women were 79.01 % whereas only 57.09 % rural women were literate. Due to lack of basic education the numerical abilities among women are poor which restrict them to analyze the financial information properly caused poor financial planning which ultimately affects their saving & investment decisions and the wellbeing of the family as whole. Moreover, Lack of higher education among women creates problem in understanding the basic concepts of financial literacy like computation of compound interest, analysis of inflation, risk & return trade off and portfolio diversification etc.

7.2. Social and Cultural

Since ages, this world has been a male dominated world, where men run the society and women follow him. Specially earning capacity has been the main source of power for the men to run the society. These women, not only play an important role socially, but economically also. In

India, virtually women are the main spender of the family whereas the men are the principal earner of the family. Today, we are in the era where women are at par with men but still the women who were working outside were not accepted socially, they were treated as irresponsible regarding their in-laws, husband or their children. Moreover, even when they are working they were not having any right to use their earned money according to their own choices because in Indian culture the decision making lies only in the hands of male member of the family. Because of all these social and culture pressure the women in spite of having knowledge and talent were not able to prove themselves which ultimately creates problem in their empowerment socially as well as economically. Although women's access to financial services has increased substantially faster in the past 10 years, their ability to exploit this access is often still limited by the disadvantages they experience because of their gender.

7.3. What If Factor

Another challenge to women is the "what if' factor. Women's lack of confidence and knowledge with regard to money management affects their capability to achieve their financial potential. There is a fear among women that if they ask questions relating to their financial matters, they will be treated as uneducated or uninformed. In addition to this there is a fear among them that the process is so complex that they will not understand well or not able to access the information related to financial matters. Moreover, they were not consulting any financial adviser who can help them in making their financial planning in fear that they may charge more fees or may misuse their money or may cheat them. This all create hurdles in gaining the knowledge about the basic money management.

7.4. Financial Barriers

Majority of the women are not an earning person in a family. Even if they are working, they cannot take their financial decisions independently in their family. The money earned by them were treated as additional money which was only meant for spending on the leisure of family, hence they cannot use their own money on themselves as per their choices. Many times the poor financial condition of a family creates a reason for women to work. In all these conditions women were not free to take their own financial decisions as per their choices and because of this in spite of having eagerness to be financial literate they were not able to gain financial knowledge properly, since they don't have enough money with themselves to afford to have financial education from the institutions to get financial knowledge, attend seminars or workshops on financial matters and could not join various awareness programs on financial literacy etc.

7.5. Physical Barriers

Sometimes poor infrastructural facilities create a hindrance for women. Due to lack of private transport and less reliance on public transport services women were not able to attend the courses specially focused on financial education or not able to attend the awareness programs on financial

education run by the government at different places. Many times, they were not using banking services on regular basis and find it frustrating and time & cost consuming activity only because of less availability of good transport facility. Less availability of financial institutions and financial educations centre is also one of the physical barriers for women. Moreover, the greater use of computer now a day also act as a physical barrier for women because they were not very much frequent users of computers and find it very difficult to operate on the system.

8. Suggestions to Improve Financial Literacy

- More awareness programs should be created at different levels especially in rural and regionally backward areas regarding the basic banking services and their benefits.

- The government should ensure the reach of their various promotional programmes like "Jan Dhan Yojna" specifically to women especially living in rural and tribal areas so that the purpose of organising these promotional programmes could be achieved which is to provide basic banking facilities on a larger scale.

- The government may form the team of women only who can help the women in those areas where women cannot go outside their homes to get any type of information; so that they can also know the basic money management concepts and its importance as well as how these can help in their own financial condition and family too.

- Women must have to grab the opportunity and use the financial information available, if they really want to improve their financial literacy. To get more financial knowledge women have to attend more and more workshops, seminars, and financial management courses in their nearest place.

- In rural areas the bank must follow communication through vernacular/regional/local language, which may help the women to understand the information from banks; since the literacy rate among women especially in rural areas were very low. Government must spread the information on larger scale especially in rural and backward areas about various literacy programmes which was run exclusively for women, so that they may attend that programme and learn the basic numeracy which help them in their empowerment and prosperity of the family as whole since women are the backbone of every family.

- Matters related to basic finance and money related issues must be talk about among families, especially to female children so that they must understand the basic concepts of financial literacy and its importance in their future thus helping them understanding the actual meaning of empowerment since their childhood.

- Women must have to inculcate the habit of financial planning as soon as they started earning and must be clear about their long term financial goal so that they can utilise their earned money in more effective manner to secure their future and after retirement period thus ultimately helps in achieving their financial goal.

- Women must maintain a financial diary in which they can write down their weekly or monthly expenses and try to control their expenses or try to spend wisely; so that they can maintain regular savings which ultimately help them and their families in uncertain future expenditures.

9. Conclusions

Financial literacy among women is very low. It enables people to understand what is needed to achieve a lifestyle that is financially balanced, sustainable, ethical and responsible. It is directly related to the wellbeing of an individual and society as a whole. Financial literacy would help the women in making better financial decisions and helps in the utilization of financial products and services. It is very encouraging to see that today women are at par with men in all fields but when it comes to financial decision-making, they are still dependent on the male members of their family. In our country, where poverty and unemployment are the major problems, it is very crucial to financially literate the women to fuel the engine of growth by providing opportunities to women to contribute to economic growth. While women in developed countries proved to be better financial planners relatively, it is the women of emerging economies who have to become literate when it comes to money management issues. Though various initiatives were taken by different organisations to boost the financial literacy but still there is a need of more awareness programs which may include workshops, seminars, and financial management courses at different levels to get more financial knowledge regarding the banking services and their benefits one can attend.

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A Study on Investor's Perception Towards Mutual Funds in India

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Abstract

Mutual funds have been the subject of inquiry and investigation by academics, researchers, and professionals in the field of finance. It is essential to the growth of the mutual fund industry that investors have a widespread readiness to accept mutual funds as a solid investment. Investors come from a wide range of socioeconomic backgrounds, and they also differ in terms of the rates of return they anticipate earning and the amount of risk they are ready to face. It is quite difficult to produce products that may fulfill the requirements of investors if one does not first determine the demographic and economic characteristics of these individuals. By analyzing the level of risk an investor is willing to take, one may infer the patterns of asset allocation they will use. When investing in mutual funds, it is essential to determine the factors and considerations that influence the investment decisions made by investors. The track records of mutual fund schemes are formed via the use of periodical performance evaluations. These reviews also act as an aggressive marketing technique for the purpose of obtaining cash from individual investors. The following are the objectives of the study to study the perception of the investors towards the mutual fund and to analyze the investors' behavior towards mutual funds.

Keywords: Investor's perception, mutual funds and Investment Dimension

Introduction:

The capacity of mutual funds to pool money and then transfer that capital to locations where it may be of the greatest use to the economy makes mutual funds an essential component of the economy. The availability of these resources as a result of these investments will, among other positive effects, result in increased access to money, global financial stability, and a healthy corporate community. As a consequence of this development, mutual funds have developed into influential financial intermediaries that make a substantial contribution to the stability of the financial system as well as the efficiency with which resources are distributed. The mutual fund industry is one sector of India's economy thatis seeing fast expansion. There has been a notable rise in the use oftheseproducts as a method of channeling savings into the stock market, especially among individual and family savers. In particular, the use of these instruments has been on the rise in the United States. On the Indian Capital Market in 1964, mutual funds made their debut with the

intention of providing individual investors with risk diversification, return guarantee, and professional management. Since then, they have had nothing short of incredible growth in terms of both their workforce and their income, as well as interest from possible investors. The mutual fund industry, which serves as a cornerstone of the financial markets, is required to respond rapidly to unanticipated movements in the economy by distinguishing their products and gaining aknowledge of the dynamics of investors' views of the value of their investments.
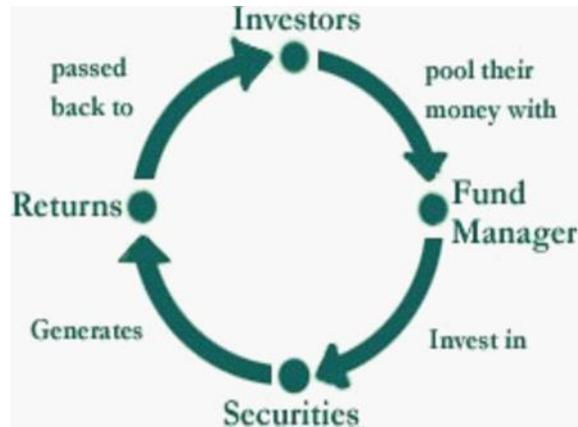
The potential for a financial loss, including the loss of the original investment as well as any gains generated, isreferred to as the "risk" associated with an investment. Risk also refers to the inability to produce a profit from an investment. The investment objective of a fund and the kind of assets it holds are the primary factors that define the amount of risk associated with that fund. Investors need to educate themselves on the risks associated with purchasing shares of the fund by reading the accompanying prospect us. As a consequence, it is time to discover how investors think about and prepare for the sorts of risks and shocks mentioned above, and it is also time to supply some really helpful statistics for the purpose of informing investment decisions pertaining to mutual funds. Mutual funds, just like any other company, may create money via the sale of investor shares just as any other organization can issue stock to the general public. It purchases stocks, bonds, and other money market instruments using the proceeds from the sale of its assets, in addition to any gains it has accumulated from investments made in the past. (Cecily and Rangarajan.2012)

Background of the Study

The potential for monetary loss is inherent in the nature of mutual funds, as it is with any other kind of investment. The financial investing market is fundamentally risky. There is always the potential for loss. Even with all of the professional safeguards that come with a diversified investment vehicle, there is still some level of risk involved when investing in the stock market because of the inherent instability of the financial system. Investments in mutual funds are susceptible to market risk across all available financial markets (debt, equities, money, and capital). The

possibility of incurring a loss of investment money(including principle and interest) or the inability of an investment to provide the desired rate of return iswhat is meant by the word "risk." In spite of the fact that it is willing to take on investment risk, the regulations that control it ensure that the funds are invested in a wise manner and that the expenses connected with the investments of the funds are maintained within boundaries that are fair. In general, mutual funds closely adhere to the all-encompassing principle of risk return. When there is a bigger potential for loss in an investment, there is also a greater potential for gain. To reduce investors' exposure to risk, fund managers distill the benefits of diversification into a more manageable format. Diversification, on the otherhand, may be used to mitigate non-systematic risk. The investing objective of a fund and its holding pattern are two factors that influence the degree of risk that is connected with the fund. Therefore, it is essential for investors to have a solid understanding of the risks associated with the market. It may be helpful for investors to read the prospectus, maintain a close watch on the movement of the market, and have appropriate understanding of financial matters in order to assist offset some of the risks they encounter.

Benefits to the General Public:

It may not be obvious at first why you would want to purchase shares in different securities through a mutual fund "middleman" instead of simply purchasing the securities on your own. There are, however, some very good reasons why millions of Americans opt to invest in mutual funds instead of, or in addition to, buying securities directly. Mutual funds can offer you the 4 following benefits:

Diversification can reduce your overall investment risk by spreading your risk across many different assets. With a mutual fund you can diversify your holdings both across companies (e.g. by buying a mutual fund that owns stock in 100 different companies) and across asset classes (e.g. by buying a mutual fund that owns stocks, bonds, and other securities). When some assets are falling in price, others are likely to be rising, so diversification results in less risk than if you purchased just one or two investments.

Choice: Mutual funds come in a wide variety of types. Some mutual funds invest exclusively in particular sector (e.g. energy funds), while others might target growth opportunities in general. There are thousands of funds, and each has its own objectives and focus. The key is for you to find the mutual funds that most closely match your own particular investment objectives

Liquidity is the ease with which you can convert your assets--with relatively low depreciation in value--into cash. In the case of mutual funds, it's as easy to sell a share of a mutual fund as it is to sell a share of stock (although some funds charge a fee for redemptions and others you can only redeem at the end of the trading day, after the current value of the fund's holdings has been calculated)

Low Investment Minimums: Most mutual funds will allow you to buy into the fund with as little $1,000 or $2,000, and some funds even allow a "no minimum" initial investment, if you

agree to make regular monthly contributions of $50 or $100. Whatever the case may be, you do not need to be exceptionally wealthy in order to invest in a mutual fund.

Convenience: When you own a mutual fund, you don't need to worry about tracking the dozens of different securities in which the fund invests; rather, all you need to do is to keep track of the fund's performance. It's also quite easy to make monthly contributions to mutual funds and to buy and sell shares in them.

Low Transaction Costs: Mutual funds are able to keep transaction costs -- that is, the costs associated with buying and selling securities -- at a minimum because they benefit from reduced brokerage commissions for buying and selling large quantities of investments at a single time. Of course, this benefit is reduced somewhat by the fact that they are buying and selling a large number of different stocks. Annual fees of 1.0% to 1.5% of the investment amount are typical.

Theoretical under pinning

Rajesh Trivedi, et al. (2017) [9]As a result of the fact thattheIndian financial industry is expanding at a rapid rate, it is essential that the supply of various financial products satisfy the demand from investors. This research shed light on the myriads of potential risks that are associated with participating in an investment plan for a mutual fund. A survey was conducted with investors in mutual funds as well as people who don't typically invest in mutual funds in order to get this information. The authors study the ways in which factors such as cash on hand, financial knowledge, and population affect the decisions that might be made about investments. It was found out that the availability of low-risk funds and the fund liquidity plan had an effect on investors' judgments of the attractiveness of mutual funds. As a consequence of this finding, the authors of the research came to the conclusion that the mutual fund industry faced additional obstacles when trying to broaden its pool of investors. For the development of this industry, it is essential to broaden the understanding of personal finance held by younger people and women. This need has been recognized by the government, and efforts are now being made to include financial education into the K-12 curriculum.(Ganapathi 2015) [5] Indian mutual funds are clearly growing more important as more money is invested and as new mutual fund schemes are developed. This may be investigated and it is obvious that more mutual fund schemes are being created. According to the data, a statistically significant link exists between the degrees of education held by investors and their risk tolerance. This association also exists between the levels of education held by investors and the vocations they hold. In addition, the statistics indicate that neither the investors' employment nor their rates of monthly savings hada significant relationship with their level of competence in relation to mutual funds. When analyzing the effectiveness of a fund, investors often compare it to a standard known as the rate of risk-free returns. This information will be used to make a decision on which chances for investment and schemes will be pursued. The in capacityof the fund manager to take risks, lack of knowledge in timing investments, poor stock choosing competency, and in

sufficient diversification were direct contributors to the low returns that were generated by the schemes. The author draws the conclusion that fund managers for debt and balanced plan investments have shown their capability in locating companies at reasonable prices and diversifying their portfolios. If they had the option, investors would invest even more money in a mutual fund if they were given the opportunity. To put it another way, the private sector's mutual funds have developed at a quicker rate and performed better than their counterparts in the public sector. Jaspal Singh and Subash Chander (2006), [7] the fifth spot was taken up by investors' equity mutual funds. Investors who were between the ages of 20 and 35 and had a consistent income were more likely to choose equity-oriented schemes thatwereclosed-ended. Prior to making any big choices about their investments, investors often sought the advice of brokers, specialists, and financial advisers. A significant number of respondents, particularly those in the wage band and between the ages of 35 and 50, reported having had quite diverse experiences with the returns on their investments in mutual funds.

Need for Professional Investment Dimension

The phrase "investment dimensions" may refer to either a predetermined set of principles, a predetermined point of view, or a strategy for guiding investors in the process of developing their very own investment portfolios. In contrast to low-return investment channels such as bank deposits, post office savings, and other similar types of investments, mutual funds enable individuals to invest in a manner that isboth logical and needs-based. A well-balanced approach to investing often includes both short-term and long-term planning, as well as a predetermined degree of comfort with risk. When returns are rigorously enforced in accordance with an effective dimension, it is possible for returns to increase. Before making any purchases, prospective investors in mutual funds have to first do a careful examination of the offer document supplied by the AMC. The market, as a rule, operates on the assumption that a fund's existing performance is representative of the fund's potential going forward. This indicates that the vast majority of investors base their selections on the previous performance of an asset. When attempting to predict how a mutual fund will perform in the future, an investor should first look through the fund's information sheet and then consider how the fund has performed in the past before moving on to the next step.

Investors may now get the most recent information and particulars on the funds by visiting the websites of AMCs and downloading digital PDFsof the documents. Individual investors may have a tough time selecting the appropriate mutual fund since it requires a substantial amount of study and a strategic approach. Investors would make judgments based on the track record of the mutual fund, and the high returns of many funds are the result of the ability of their fund managers in navigating the ups and downs of the stock market. Investors are often unaware of the ways in which fund fees reduce the profits they get on their investments. Investors are less likely to purchase costly funds, such as those with higher brokerage costsor front-end loading, since these types of funds have a higher overall cost. Due to the significant degree of volatility in fund outcomes, investors are given with operating cost percentages; however, the exact amounts of these charges are not publicized.

Concept about perception towards Investments

In the field of behavioural finance, psychology research is used to the analysis of financial markets in order to get a deeper understanding of the variables that impact the decisions made by individual investors. When a person saves money or puts money away on a monthly basis for long-term needs, they are making investments in that money. Although it is impossible to alter human nature, investors might improve their ability to establish a more secure nest egg for retirement by increasing their knowledge of the many investment opportunities available to them.

The field of research known as behavioural finance examines how the feelings and attitudes that individuals have towards money and markets impact their choices when it comes to investing. For the purpose of satisfying one's future financial responsibilities, investments undertaken with a longer time horizon are seen as being more essential. People living on a more limited income have just as much of a chance as those with more disposable income to save money for the future by participating in India's financial markets.

Individuals are increasingly the ones who make financial decisions for their families, including those involving mutual funds, pensions, mortgages, home equity loans, and other significant purchases. This trend is expected to continue in the foreseeable future. As a direct consequence of this, the number of individuals actively trading on financial markets saw meteoric growth. The overall behaviour of the stock market is a reflection of the patterns of behaviour seen in individual investors. After reviewing the approaches that are currently being used, we can see that investors have access to a wide range of tools that allow them to evaluate and forecast the profitability of a firm. The historical price patterns, financial performance, and accounting ratios are analyzed using these approaches in order to make predictions on the future direction of stock prices. When it comes to making financial decisions, according to the principles of behavioural finance means taking into consideration the scope, nature, and impact of human behaviour.

Need for the Study

As a direct consequence of efforts made to address preexisting issues, the mutual fund industry has greatly expanded in recent years. Within the scope of this study, comparisons and contrasts were made between public and private mutual funds. Because it will throw light on the inner workings and track records of these fund institutions, the results of this study will be helpful to ordinary investors. This is because the findings will cast light on the research. This document gives fund houses access to useful information on investor mood and behaviour in relation to investing in mutual funds.

Importance of the study:

There has been a significant amount of study done in the past on India's mutual fund business. The opinions of investors as well as their attitudes about mutual funds were investigated over the course of this investigation. This material is helpful in gaining a better understanding of the mutual fund sector and the growth opportunities that exist within it. It would be in the best interest of mutual fund companies to examine the findings of this study in order to improve the level of service they provide to their investors and to grow their operations. The insights that were gathered from this study may be used by future researchers in the field of mutual funds and investor attitude to better analyze similar problems from various aspects. The recent investigation advises customers to save aside some of their spare money and donate it to charitable organizations. As a direct consequence of this, the wealth of the nation and the earnings of investors both increase.

Significance of the Study

It is essential for a nation's economy to have a reliable financial system in place in order to experience growth. Because it serves as an outlet for the placement of one's accumulated savings, the capital market is an essential component of the overall monetary system. The capital market played a relatively little part in India's monetary system throughout the almost three decades that followed India's independence from British rule. During this time period, just a tiny percentage of businesses looked to the capital market to satisfy their needs for short- term financing, and the market's overall contribution to the businesses' efforts to fulfill all of their funding requirements was equally insignificant. Investors either lacked an interest in or understanding of corporate securities, and those investors who did participate in the equity market witnessed returns that were far lower than the -16 risk premium. The respondents to the survey ranked bank deposits as their top choice for an investment vehicle because of the perception that these investments are low risk. The revisions that were made in 1970 that weakened the Foreign Exchange Regulation Act contributed to an increase in investor excitement for the stock market (FERA). Since the middle of the 1980s, when the government first started pushing for liberalization, the capital market in India has seen significant changes in terms of resource mobilization. These developments began in the early 1990s. The financial liberalization process that took place in 1991 emphasized the free playing of market forces. This was accomplished by reducing barriers to entry for both domestic and foreign institutional investors. Investors from all over the world were enticed to participate in India's stock market as a result of its deregulatory policies, chances for diversification, and high profits. Twenty percent of the total trading volume on India's capital market is contributed by foreign institutional investors. The fact that FIIs conduct their operations according to global trends is one of the primary contributors to the high level of volatility seen in the Indian capital market.

Conclusion

Investors' perceptions of risk, investors' perceptions of the individual investments they hold, the characteristics of mutual fund features, and the quality of fund management were found as elements that effect investors' views of mutual funds. The results of the research indicate that it is essential for companies in Indiathat deal in mutual funds to have a solid understanding of the most significant factors that should be taken into consideration while establishing mutual fund products and other investment plans.(Binod Kumar Singh2012)[3]. It is concluded that the perception towards the investment is strongly influence on the mutual fund investment.

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Study on "The Role of Artificial Intelligence on Financial Risk Management"

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Abstract

"The Role of Artificial Intelligence on Financial Risk Management" investigates the transformative impact of artificial intelligence (AI) on financial risk management. The study emphasizes the importance of AI in enhancing risk assessment accuracy, decision-making processes, and overall resilience in the financial sector. Financial risk management is crucial for organizations to navigate uncertainties and potential losses, ensuring stability and long-term viability. The research methodology involved a mixed-methods approach, combining primary data collection through structured questionnaires distributed to employees of financial institutions like NJ India, HDFC Bank, and Jainam Share Consultancy, and secondary data analysis from academic literature and industry reports. The study focused on evaluating the effectiveness of AI technologies in risk assessment, investigating AI's impact on decision-making processes, and comparing AI with traditional methods in risk management. The findings provide valuable insights into the potential of AI in enhancing financial risk management practices, highlighting opportunities for leveraging AI technologies to improve risk identification, modeling, and decision-making processes within financial institutions. Recommendations based on the study's findings aim to guide financial institutions in adopting AI technologies effectively to enhance risk management practices and ensure long-term financial stability and growth.

1.1 Introduction

An essential part in modern corporate operations, financial risk management is necessary for negotiating the intricate web of financial uncertainties and hazards. Organizations face a wide range of risks in the dynamic and linked global economy of today, risks that may compromise their stability and financial health. It is more important than ever to proactively detect, evaluate, and manage risks related to market volatility, credit defaults, operational disruptions, and liquidity issues. In addition to protecting a business's investments and assets, good financial risk management also makes it more resilient, competitive, and long-term sustainable. The purpose of this introduction is to examine the importance of financial risk

Organizations that put strong risk management techniques into place might benefit from possibilities that present themselves in volatile markets in addition to protecting themselves from possible financial losses. A systematic approach to identifying and measuring risks, as well as creating and putting into practice plans to reduce or transfer them, are all necessary for effective

risk management. In the end, financial risk management is essential for a company's ability to make wise decisions, strengthen its financial resilience, and confidently handle uncertainty in the pursuit of long-term success and growth.

1.2 Characteristics of Financial Risk Management

Comprehensive Risk Identification:

Financial risk management involves a comprehensive process of identifying various types of risks that can impact an organization's financial health. These risks include credit risk, market risk, operational risk, liquidity risk, and systemic risk. By conducting thorough risk assessments, financial institutions can proactively identify potential threats and vulnerabilities.

Risk Assessment and Quantification:

After identifying risks, financial risk management entails assessing and quantifying the potential impact of these risks on the organization.

Risk Mitigation Strategies:

These strategies aim to reduce the likelihood of risk occurrence and minimize the impact of adverse events on the organization. Risk mitigation measures may include diversification of investments, hedging strategies, setting risk limits, and implementing internal controls.

Regulatory Compliance:

Financial risk management is closely tied to regulatory compliance, as financial institutions are required to adhere to various regulations and guidelines set forth by regulatory authorities. Use of Advanced Technologies:

In recent years, the integration of advanced technologies, such as artificial intelligence (AI), machine learning, and predictive analytics, has become a prominent characteristic of financial risk management. These technologies enable institutions to analyze vast amounts of data, identify patterns, and predict potential risks in real-time, enhancing risk assessment accuracy and decision-making processes.

Continuous Monitoring and Reporting:

Financial risk management involves continuous monitoring of risks and their impact on the organization's financial health.

1.3 Importance of Financial Risk Management

To help organizations negotiate the uncertainties and potential losses connected to investments and business decisions, financial risk management is essential in the finance industry. Companies can boost total returns, maintain a healthy debt level, guarantee on-time loan repayments, and

improve operating performance by recognizing and reducing financial risks. Financial stability must be protected from a variety of risks, including credit, liquidity, operational, and market risks. Each of these risks presents different difficulties that must be overcome. Successful risk management entails recognizing, measuring, and controlling risks to shield an organization's capital and guarantee its long-term viability. To maximize profits and guard against future financial failures, businesses must create risk avoidance, reduction, sharing, and retention plans.

1.4 Adoption of AI in Financial Risk Management

To navigate uncertainty, increase the accuracy of risk assessments, improve decision-making processes, and proactively manage risks to protect financial stability, financial institutions are increasingly depending on AI tools like machine learning algorithms, natural language processing, and predictive analytics. AI's useful applications in financial risk management present fresh possibilities for data analysis, pattern recognition, and real-time risk prediction. Previous research has demonstrated the usefulness of AI in several financial sectors, such as market trend monitoring, fraud detection, portfolio optimization, and credit risk assessment.

In conclusion, the thesis by Researcher serves as a comprehensive exploration of the role of artificial intelligence in financial risk management, highlighting the significant impact of AI technologies in enhancing risk assessment accuracy, decision-making processes, and overall resilience in the face of dynamic risk environments. By addressing the challenges faced by traditional risk management approaches and showcasing the potential of AI in revolutionizing financial risk management, this research thesis offers valuable insights into the transformative power of AI in the financial sector.

Review of Literature

(Zhang, 2020) Financial risk management is a critical aspect of maintaining stability and sustainability in the financial sector. With the increasing complexity of financial markets and the emergence of new risk factors, traditional risk management approaches are facing challenges in effectively identifying, assessing, and mitigating risks. In response to these challenges, applying artificial intelligence (AI) technologies has gained significant attention as a promising solution to enhance financial risk management practices.

Hu and Chen (2022) delve into the realm of AI in financial risk management, exploring the practical applications and implications of AI technologies in addressing financial risks. The integration of AI tools such as machine learning algorithms, natural language processing, and predictive analytics offers new opportunities to analyze vast amounts of data, identify patterns, and predict potential risks in real-time. By leveraging AI capabilities, financial institutions can improve risk assessment accuracy, enhance decision-making processes, and proactively manage risks to safeguard financial stability.

Smith et al. (2019) demonstrated the use of machine learning algorithms in credit risk modeling, showcasing improved predictive accuracy and risk evaluation compared to traditional methods.

Moreover, the integration of AI-driven predictive analytics tools has enabled financial institutions to anticipate market fluctuations, optimize investment strategies, and mitigate potential risks effectively.

Studies by **Johnson and Lee (2018)** and **Wang et al. (2020)** have demonstrated the superior predictive power of machine learning models, such as random forests, support vector machines, and neural networks, in credit risk assessment compared to conventional scoring models. These advanced algorithms offer enhanced risk stratification, early detection of default probabilities, and improved decision-making capabilities for lenders.

3. Research methodology:

3.1 Research Objectives

•   Evaluate the Effectiveness of AI Technologies in Enhancing Risk Assessment

•   Investigate the Impact of AI Adoption on Decision-Making Processes in Financial Institutions

•   To investigate whether AI has the upper edge for risk management than the traditional method.

3.2 Research Design

The study is based on a Descriptive research design and primary data has been collected through a well-structured questionnaire. For the research work researcher decided to collect the responses from a financial institute like NJ India, HDFC Bank and Jainam Share Consultancy because they the knowledge of financial risk management and could help in the research work.

3.3 Sources of Data

3.3.1 Primary Data

For the primary data collection researcher prepared a questionnaire that was to be filled out by the respondents from the selected sample size.

3.3.2 Secondary Data

For the reference of the study researcher has collected some information from the different research articles and used it for the study.

3.4 Sampling Design

For a sampling design utilizing purposive sampling, the study selectively chose participants

based on specific criteria, such as expertise in financial risk management and AI technologies, to gather targeted and in-depth insights aligning with the research objectives.

3.5 Method of Data Collection

3.5.1 Survey Questionnaire:

The questionnaire included questions related to the effectiveness of AI in addressing specific risk types (e.g., credit risk, market risk, operational risk).

3.5.2 Secondary Data Sources:

In addition to primary data, the study leveraged secondary data sources, including academic literature, industry reports, and case studies on AI applications in financial risk management.

3.6 Data Analysis Technique

For analysis Chi-square Test and Z-test has been used.

5.2 Conclusion

In conclusion, the data analysis underscored the significant impact of AI technologies on financial risk management practices. The findings suggested a growing acceptance and confidence in AI's ability to enhance market risk prediction, accuracy of risk assessments, and timeliness of liquidity risk assessments within financial institutions. While there are varying perceptions regarding the effectiveness of AI in managing liquidity risks, the overall sentiment leans towards recognizing the potential benefits of AI integration. The study highlighted the importance of technological infrastructure improvements to support the seamless integration of AI technologies into decision-making processes. Overall, the data indicates a positive trend toward AI adoption in financial risk management, emphasizing the need for ongoing advancements, education, and strategic integration of AI tools to optimize decision-making processes and risk assessment accuracy.

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A Study on Investor's Perception towards "E-Trading" with Special Reference to Bardoli Region

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Abstract

Online trading is buying and selling of securities on internet in an area of commercial activity. The set of institutions facilitates the exchange of securities between buyer and sellers. It can be done by process of an individual and traders buying and selling securities over an online base is for that individual compulsory have De-mat account for trading of securities. Online trading is an internet based investment activity. This study aims to identify the Preferences of the respondents towards online in Indian stock market. The questionnaire was collected for the study as a primary data with a sample of 100 respondents. Descriptive research design is used in this study .The collected data has been tabulated and analyzed using the tools such as percentage analysis and Chi square. In spite of numerous benefits offered, online trading is still not popular among investors due to certain factors.

***Keywords:** Online Trading, Investors, Brokerage.*

Introduction

Trade is the transfer of ownership of goods and services from one person to another. Trade is sometimes loosely called commerce or financial transaction or barter. A network that allows trade is called a market. The original form of trade was barter, the direct exchange of goods and services. Later one side of the barter was the metals, precious metals (poles, coins), bills, paper money. Online trading is the buying and selling of stocks, through the internet in an area of commercial activity. Internet trading started in India on 1st April 2000 with 79 members seeking permission for online trading. The SEBI committees on internet-based securities trading services have allowed the net to be used as an Order Routing System (ORS) through registered stock brokers of their clients for the execution of transactions. The user should have the user id and password to enter into the electronic ring. He should also have a Demat account and bank account. The system permits only registered clients to log in using a user ID and password. Order can be placed using the place order window of the website.

The Major Internet Trading Services Providers in India are:

- **ICICI DIRECT -** ICICI direct (or ICICI Direct.com) is a stock trading company of ICICI bank. Along with stock trading and trading in derivatives BSE and NSE. It also provides the facility to invest in IPOs, mutual funds also.

- **5PAISA-** 5paisa is an internet stock trading company of India Infoline securities private ltd., owner of popular business portal indiainfoline.com and this company has a high quality of investment advice from an experienced research company.

- **INDIA BULLS -**India bulls are India's leading financial services and real estate Company having a presence of over 414 locations in more cities. India Bulls financial services ltd is listed on the National Stock Exchange.

- **HDFC SECURITIES:** HDFC Securities (HDFC sec) is an equity trading company of HDFC bank. HDFC Securities provides both online trading and on phone. The HDFC Securities trading account has a unique 3-in-1 feature.

- **RELIANCE MONEY:** -Reliance money (or Reliancemoney.com) is the financial services division of the Anil Dhirubhai Ambani group that provides capital limited. Investment options are available in Equity trading.

- **IDBI PAISA BUILDER: -**IDBI paisa builder is a multipurpose internet stock trading website from IDBI Capital Market service ltd., a leading financial service in India and is a 100% subsidiary of industrial development.

- **SHARE KHAN:-**Share khan is an internet stock trading company of SSKI Group, a provider of India - based investment banking and corporate service. Share khan is one of the largest stock broking houses in the country.

Review of Literature

Prof. (Dr) Iqbal Thonse Hawaldar, Dr. Habeeb Ur Rahiman(2022) majority of the investors took their own decision to invest, whereas some of the investors were influenced by Workshops, Seminars, Advertisements and newspapers. Thus, study attempted to learn the behavior of the investors towards stock market.

Dr. Tarak Nath Sahu, Arup Kumar Sarkar (2021) The study finds that the awareness levels of the individual investors are on moderate level and financial awareness is more than social learning. Perceived Risk Attitude is mainly guided by Affect rather than Cognition.

Dr. Gagan Kukreja (2020) variables are used in this study to measure investors' perception. These variables have 72% impact on measuring investor perception. Charges, liquidity and investment attributes are mediating factor for investors' perception. Investment influences and investment benefits are having high relevance.

Ruta Khaparde and Anjali Bhute (2014) They suggest that stocks are the most wonderful category of financial instruments and one of the greatest tools ever invented for building financial wealth.

Kousalya.P.R and Gurusamy.P (2012) from study it concluded that investors make self decision regarding their investment. Investments are made for a Investments are made for a period of less than three years three years and there is a significant relationship between age and awareness.

Problem Statement

The company intended to find out the investment trends amongst individual investors of Surat. So as to refine or retune their portfolio to match the investor needs. Keeping this in view, the researcher attempts to make a study on "Investors Perception about E-Trading"

Objectives of the Study

- To know the perception of investors towards online trading.

- To study the procedure and benefit of internet share trading.

- To study the service of online share trading.

- To analyze the extent usage of technology based share trading among the investors.

Methodology of the Study

The study is based on a Descriptive research design and primary data has been collected through a well-structured questionnaire from 100 investors from Bardoli Rrgion. Also, the study is based on secondary data which is collected from trading websites, journals, articles, books, and annual reports.

Sampling

Sampling frame:	For this study sampling unit is investor from different areas of bardoli region and include investors, intermediaries and others involved in online trading.
Sample technique:	Non-probability convenient sampling technique and random sampling.
Research instrument:	Structured questionnaire
Sample size:	100 respondents

Tools for Data Analyses

For analysis of data frequency tables & pie-chart has been used. The coding of the questionnaire is done by the Excel and SPSS software.

Limitation for the Study

• The respondents were also biased in giving their opinion.

• The availability of time at the disposal of the researcher has also acted as a limitation in making an in-depth and exhaustive study.

• The study is limited to Surat city only.

Scope for Future Research

The area of study gives scope for further research which is outlined as follows:

• The study is based on Online trading.

• The study is limited to investor in Bardoli region.

• Quantitative techniques in E-trading.

Data Analysis
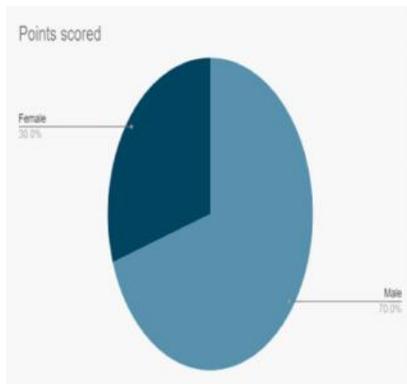
Figure 1 GENDER
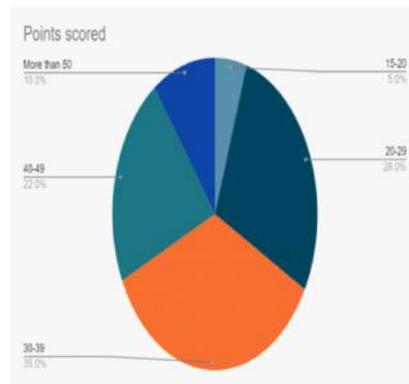
Figure 2 AGE
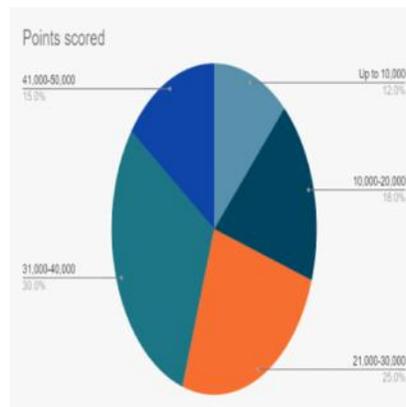
Figure 1 INCOME
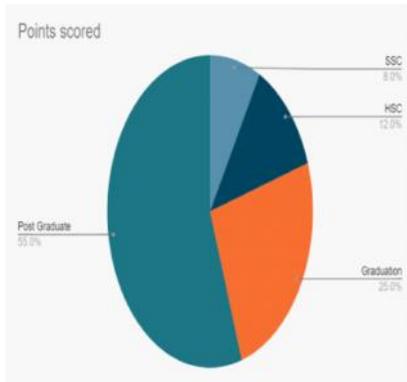
Figure 2 EDUCATIONAL QUALIFICATION
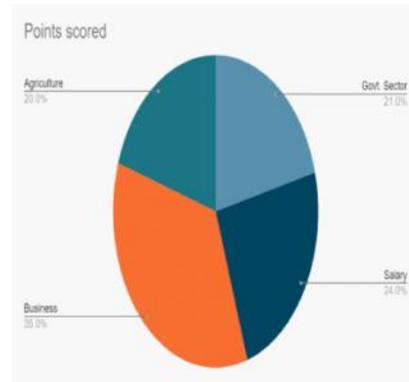
Figure 3 OCCUPATION

Investor Perception Towards Online Trading (E-trading)
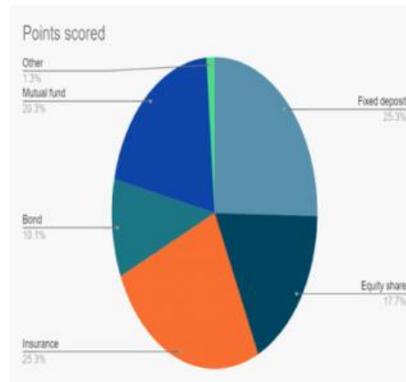
Figure 4 Awareness about option
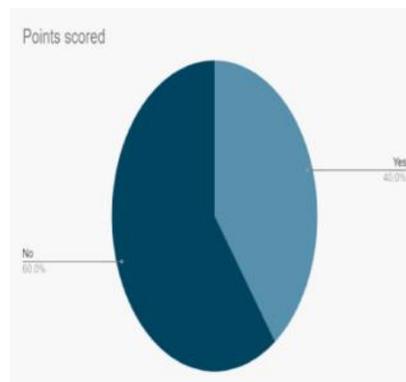
Figure 5 Do you invest in E-trading?
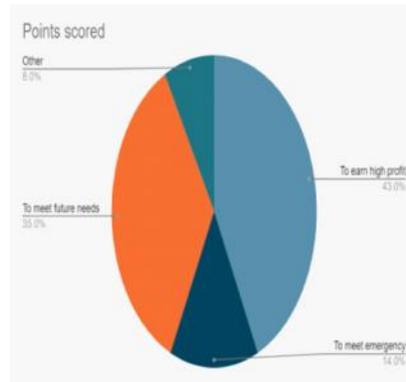
Figure 6 Objective of Investing
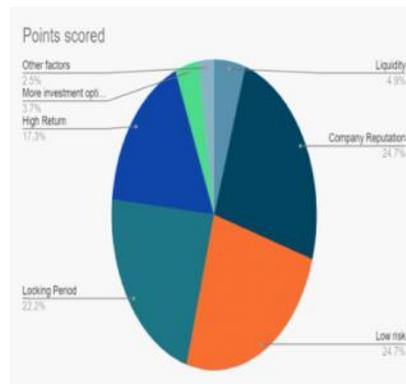
Figure 7 Factor affecting E-trading
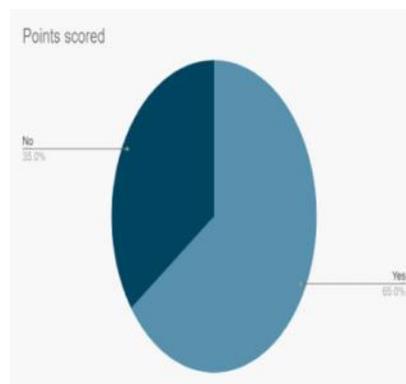
Figure 8 Like to invest in E-trading
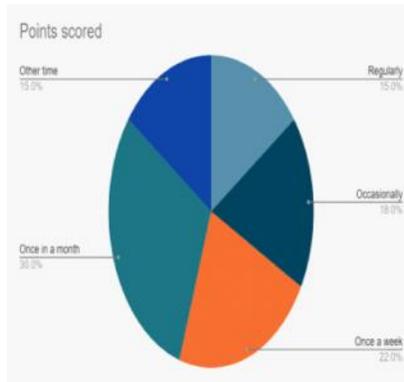
Figure 9 How often you trade
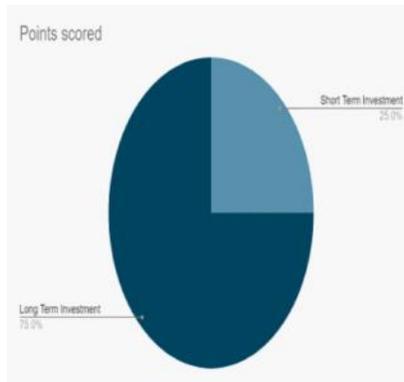
Figure 10 % of income in investment
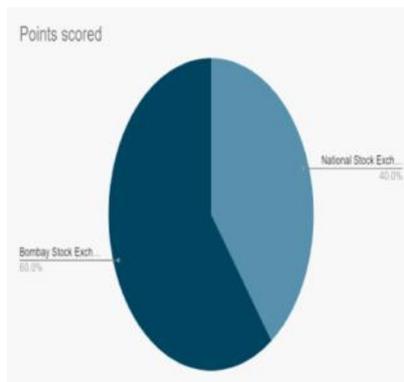
Figure 11 Are you trading in?
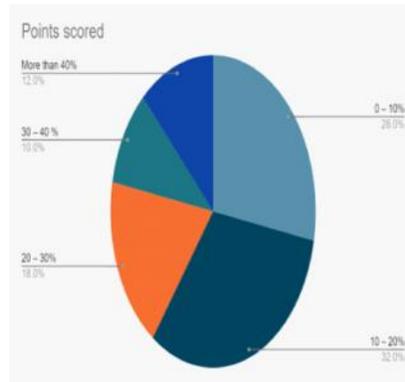
Figure 12 Preferable Investment
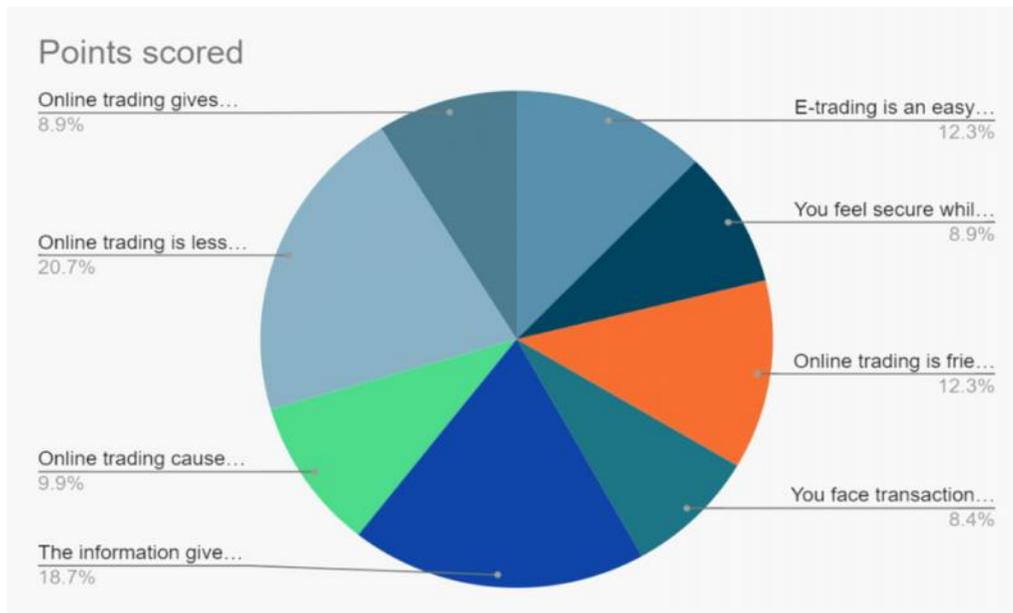
Figure 13 Investment Reason

Findings

Majority of respondents belong to Income of Rs. 31,000-40,000, Majority of respondents possess Occupation as a Business, Many of Respondent say yes for investing a part of income in trading, Majority of investor invest for earning high profit, Most of investor are aware of Fixed Deposit, Majority of investor influence you for investing for Company Reputation & low Risk, Majority say yes for investing in E-Trading, Majority of them use to invest Once in a month, Majority invest their income in Trading, Majority use to invest in Bombay Stock Exchange, Majority of them preferred Long Term Investment because there is low Risk in long term investment, Majority says online trading is less time consuming as compared to offline trading.

Conclusion

Online trading plays a vital role in the economy by mobilizing savings and investing them in the capital market, thus establishing a link between savings and the capital market. Now slowly more and more investors are attracted towards online trading for high returns, tax concessions etc. As per study it concludes that many of them are investing in E-Trading but due to some lack of insecurities in mind that there will be loss only if I invest in Share, Bond etc., due to that reason some of them are not investing in E-Trading. From study it also can be concluded that many people are interested in long term investments such as FD, Insurance, Mutual funds etc. many people are used to investing in BSE because there is low risk and it is safer than NSE. NSE is for those who invest regularly and do day trading and have knowledge about markets and business. Investor's should know before you buy shares, Bonds etc. you carefully consider whether they have value in the market and they can give a good return in future.

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To Study on Construction of Optimal Portfolio of NSE-15 Securities Through Sharpe Index Model

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Abstract

Portfolio is a combination of all the assets and investments tools that are held by an individual, referred to as the investor. The main focus of this paper is to help such investors in constructing an optimal portfolio with the help of Sharpe Index Model. In this research, the scrips that have managed to constantly be a part of the NIFTY50 Index for the period of April 2011 to March 2021 have been taken into consideration. The proposed method herein leverages the excess returns to beta ratio tool to formulate the cut-off point. Those securities with greater excess returns to beta than the cut-off point ultimately form the portfolio. The proportion of investment to be made in each selected security is done basis their beta, excess returns to beta, unsystematic risk and the cut-off point. This analysis will help investors to yield more returns with reduced risk.

Key Words - Investment, risk, return, Sharpe's Index Model, optimal portfolio.

Introduction

The money you earn is partly spent and the rest saved for meeting future expenses. Instead of keeping the savings idle you may like to use savings in order to get return on it in the future. This is called Investment.

The National Stock Exchange (NSE) is a stock exchange located at Mumbai, India. It is the largest stock exchange in India in terms of daily turnover and number of trades, for both equities and derivative trading... NSE has a market capitalization of around Rs 47, 01,923crore (7 August 2009) and is expected to become the biggest stock exchange in India in terms of market capitalization by 2009 end. Though a number of other exchanges exist, NSE and the Bombay Stock Exchange are the two most important stock exchanges in India and between them are responsible for the vast majority of share transactions. The NSE's key index is the S&P CNX Nifty, known as the Nifty, an index of fifty major stocks weighted by market capitalization.

About Portfolio & Process of Portfolio Management

Portfolio is the combination of securities such as stocks, bonds and money market instruments.

The process of blending together the broad asset classes so as to obtain optimum return with minimum risk if called portfolio construction.

Investment management, also referred to as portfolio management, is a complex process or activity that may be divided into seven broad phases.

1. Specification of investment objectives and constraints:-

The first step in the portfolio management process is to specify the investment policy which summarizes the objectives, constraints and preferences of the investor.

2. Selection of Asset Mix

Based on your objectives and constraints, you have to specify your asset allocation, that is, you have to decide how much of your portfolio has to be invested in each of the following asset categories: Cash, Bonds, Stocks, Real estate, Precious metals, Other

3. Formulation of Portfolio Strategy

After you have chosen a certain asset mix, you have to formulate an appropriate portfolio strategy. Two broad choices are available in this respect, an active portfolio strategy or a passive portfolio strategy. An active portfolio strategy is followed by most investment professionals and aggressive investors who strive to earn superior returns, after adjustment for risk and The passive strategy, on the other hand, rests on the tenet that the capital market is fairly efficient with respect to the available information. Hence, the search for superior returns through an active strategy is considered futile.

4. Selection of Securities

- **Selection of Bonds (Fixed Income Avenues)**

  You should carefully evaluate the following factors in selecting fixed income avenues.

  - Yield to maturity
  - Risk of default
  - Tax shield
  - Liquidity

- **Selection of Stocks (Equity Shares)**

  Three broad approaches are employed for the selection of equity shares: technical analysis, fundamental analysis, and random selection. Technical analysis looks at price behaviour and volume data to determine whether the share will move up or down or remain trendless. Fundamental analysis focuses on fundamental factors like the earnings level, growth prospects, and risk exposure to establish the intrinsic value of a share. The random selection approach is based on the premise that the market is efficient and securities are properly priced.

5. Portfolio Execution

The next step is to implement the portfolio plan by buying and/or selling specified securities in given amounts. This is the phase of portfolio execution which is often glossed over in portfolio management literature. However, it is an important practical step that has a significant bearing on investment results. For effectively handling the portfolio execution phase, you should understand what the trading game is like, what is the nature of key players (transistors) in this game, who are the likely winners and losers in this game, and what guidelines should be borne in mind while trading.

6. Portfolio Revision

Over time several things are likely to happen. The asset allocation in the portfolio may have drifted away from its target; the risk and return characteristics of various securities may have altered; finally, the objectives and preferences of the investor may have changed. Given the dynamic developments in the capital market and changes in your circumstances, you have to periodically monitor and revise your portfolio. This usually entails two things viz. portfolio rebalancing and portfolio upgrading.

- **Portfolio Rebalancing:** It involves reviewing and revising the portfolio composition (i.e. the stock-bond mix).

- **Portfolio Upgrading:** While portfolio rebalancing involves shifting from stocks to bonds or vice versa, portfolio upgrading calls re-assessing the risk-return characteristics of various securities (stocks as well as bonds), selling over-priced securities, and buying underpriced securities.

7. Performance Evaluation

The key dimensions of portfolio performance evaluation are rate of return and risk. This stage looks at the measures of rate of return, risk, and performance. For evaluating the performance of a portfolio, it is necessary to consider both risk and return. This is what the Treynor measure, the Sharpe measure, and the Jensen measure-the three popularly employed portfolio performance measures precisely do.

About Sharpe Model

Sharpe Model has simplified this process by relating the return in a security to a single Market index. Firstly, this will theoretically reflect all well traded securities in the market. Secondly, it will reduce and simplify the work involved in compiling elaborate matrices of variances as between individual securities. If the market index is used as a surrogate for other individual securities in the portfolio, the relation of any individual security with the market index can be represented in a Regression line or characteristic line. $R_i = \alpha_i + \beta_i R_m + e$, Whereas, Ri - expected return on security I, α_i - intercept of the straight line or alpha co-efficient, β_i - slope of straight line or beta co-efficient, R_m - the rate of return on market index, e_i - error term.

The single index model is based on the assumption that stocks vary together because of the common movement in the stock market and there are no effects beyond the market (i.e. any fundamental factor effects) that account the stocks co-movement. The expected return, standard deviation and co-variance of the single index model represent the joint movement of securities. The mean return is $R_I = \alpha_i + \beta R_m + e_i$. Portfolio return is the weighted average of the estimated return for each security in the portfolio. The weights are the respective stocks' proportions in the portfolio.

Sharpe's Optimal Portfolio

$$\frac{R_i - R_f}{\beta_i}$$

Sharpe had provided model for the selection of appropriate securities in a portfolio. The selection of any stock is directly related to its excess return-beta ratio.

Where, R_i = the expected return on stock I, R_f = the return on a riskless asset, β_i = the expected change in the rate of return on stock i associated with one unit change in the market return.

The excess return is the difference between the expected return on the stock and the riskless rate of interest such as the rate offered on the government security or Treasury bill. The excess return to beta ratio measures the additional return on a security (excess of the riskless asset return) per unit of systematic risk or non diversifiable risk. This ratio provides a relationship between potential risk and reward.

Ranking of the stocks are done on the basis of their excess return to beta. Portfolio managers would like to include stocks with higher ratios. The selection of the stocks depends on a unique cut-off rate such that all stocks with higher ratios of $R_i - R_f/\beta_i$ are included and the stocks with lower ratios are left off. The cut-off point is denoted by C^*.

The steps for finding out the stocks to be included in the optimal portfolio are given below.

1. Find out the "excess return to beta" ratio for each stock under consideration.

2. Rank them from the highest to the lowest.

3. Proceed to calculate Ci for all the stocks according to the ranked order using the following formula.

$$C_i = \frac{\dfrac{\sigma_m^2 \sum_{i=1}^N (R_i - R_f)\beta_i}{\sigma_{e_i}^2}}{1 + \sigma_m^2 \sum_{i=1}^N \dfrac{\beta_i^2}{\sigma_{e_i}^2}}$$

$\sigma^2 m$ = variance of the market index

$\sigma^2 e_i$ = variance of a stock's movement that is not associated with the movement of market index i.e. stock's unsystematic risk.

4. The cumulated values of Ci start declining after a particular Ci and that point is taken as the cut-off point and that stock ratio is the cut-off ratio C.

Assumptions of Sharpe Index Model

- All investors have homogeneous expectations.

- A uniform holding period is taken into consideration for determining the risk and return of each security.

- The price movements of securities are greatly influenced by prevailing economic and business conditions.

- There is only 1 macroeconomic factor that causes the systematic risk (beta) affecting all stock returns and this factor can be represented by the rate of return on a market index.

- When the nifty increases, stock prices also tend to increase.

Construction of the Optimal Portfolio

After determining the securities to be selected, the portfolio manager should find out how much should be invested in each security. The percentage of funds to be invested in each security can be estimated as follows

$$X_1 = \frac{Z_i}{\sum\limits_{i=1}^{N} Z_i} \qquad Z_i = \frac{\beta_i}{\sigma^2 e_i} \left| R_i - R_f - C^* \right|$$

The first expression indicates the weights on each security and they sum up to one. The second shows the relative investment in each security. The residual variance or the unsystematic risk has a role in determining the amount to be invested in each security.

Review of Literature

(Ujjwala Chitre, Dr. Yogesh Puri, 2021) conducted research on "OPTIMAL PORTFOLIO CONSTRUCTION USING SHARPE INDEX MODEL ON NIFTY50 10 YEARS-CONSISTENT SECURITIES". The objective of the study was, To study the relative market performance for the companies constituent to NIFTY 50 Index for the last 10 years, Construction of an optimal portfolio empirically using the Sharpe's Single Index Model, Determine the proportion of investment to be made in each of the selected stocks and Identify the risk and return of the portfolio hence built. So the market is a pendulum that swings back and forth through the median

line of rationality." So, an investor should tend towards this median to extract the most out of this universe of stocks. An investor must diversify his portfolio in order to cover up for the losses made by some securities and still make some gains. An optimal portfolio constructed using the Sharpe Index Model gives the perfect number of securities that an investor should build his portfolio from with minimized risk and maximized return.

LAXMI KANTA GIRI, Dr. GAYADHAR PARHI (2017); OPTIMUM PORTFOLIO CONSTRUCTION USING SINGLE INDEX MODEL, the objective is to construct an optimum portfolio using Single Index Model and to determine the weightage of each stocks in optimum portfolio. From the study it is found that only five out of 50 stocks were selected in the optimum portfolio. They were Maruti, Infratel, BPCL, Lupin and Hindustan Unilever each having a weight of 48 %, 6.7%, 19%, 16%, and 9.75% respectively.

Tanuj Nandan, Nivedita Srivastava (2017); "Construction of Optimal Portfolio Using Sharpe's Single Index Model: An Empirical Study on Nifty 50 Stocks" the objective is to calculate respective proportion for each selected stock to be invested in the portfolio. From the study it is found that maximum proportion to be investing in IndusInd Bank and Sun Pharmaceuticals and less proportion in Axis Bank. It can be conclude that to construct an optimal portfolio taking 50 stocks of Nifty 50 Index. As evident from the above study, only 24 stocks fulfill the selection criteria of being included in optimal portfolio.

Dr. Poornima S & Aruna P Remesh(2016); "A study on optimal portfolio construction using sharps single index model with special preference to selected sectors listed in NSE" the objective is to build an optimal portfolio using Sharpe's Single Index model and to calculate the beta value. From the study it is found that LIC finance limited and Reliance limited having the highest cut off value & Axis bank having the lowest cut off value and IFCI limited has the highest beta value and Mahindra having the lowest beta value. It can be conclude that an investor should continuously monitor the market and constantly update his portfolio by selecting right stocks for investment at that time. Use of cut off rate played a vital role in constructing the optimal portfolio.

Dr.Kavitha Lal & Dr. S.R. Subba Rao (2016); to construct an optimal portfolio for investment of funds, based on the CNX Nifty and the indices of the relative sub-groups. From the study it is found that Sharpe single index model has simplified the process of constructing the optimal portfolio by relating the return in a security to a single market index. Out of the 11 sectors, five are included in the optimal portfolio, with a major proportion of investment in pharma sector stocks followed by the other four. This approach of selecting an optimal portfolio takes into account the risk and returns factors for the individual sectors in comparison to the risk and return associated with the market.

Problem Statement

An investor considering investment in securities is faced with the problem of choosing from among a large number of securities and how to allocate those funds over a group of securities.

The hurdle that exists is that the investor has a problem of deciding which securities to hold and how much to invest in each of them. Though Markowitz Model enables an investor to arrive at an optimal portfolio, the Single index model is helpful in avoiding the difficulty of data input and time cost consideration. Therefore, the present study is entitled, "To construct an optimal portfolio of NSE50 securities through Sharpe Model"

Objectives of the Study

- To study trend of equity in the stock market for selected companies.

- To study the beta factor of the 15 companies

- To find out the excess return to beta ratio from the securities.

- To calculate the cut-off rate which serves as a bench mark to select stocks to be included in a portfolio.

- To find out the proportion to be invested in particular security in portfolio

- To calculate the cut-off rate which serves as a bench mark to select stocks to be included in a portfolio.

Methodology of the Study

The study is based on a Descriptive research design and secondary data has been collected from the website. Also, the study is based on secondary data which is collected from trading websites, journals, articles, books, and annual reports.

Sampling

Sampling frame:	Securities listed on NSE have been taken.
Sample technique:	Random sampling.
Research instrument:	Data collected from websites.
Sample size:	Nifty 15 Companies is selected.

Statistical Tools for Data Analyses

For analysis of data frequency tables & pie-chart has been used. The coding of the questionnaire is done by the Excel and SPSS software.

Statistical Tool For calculation-

- Average

- Arithmetic mean

- Beta (β)

- Alpha (α)

- Excess Return

- Residual variance

Limitation for the Study

- Only 10 years data has been considered for the construction of optimal portfolio.

- Portfolio is constructed based only on risk and return.

- The future uncertainty is not considered as only the historical data is taken for the calculation.

Scope for Future Research

The need for the present study and its significance is further reflected in the research problem and the objectives addressed by the present study. However the most important reasons for conducting this research are numerous. Thus, the study addresses the need that exists for research on examining the relationships between saving objectives and investment objectives.

Data Analysis

Ranked table

RANK	Security	Ri	Rf	Ri-Rf	B	Ri-Rf/B
1	ITC Ltd.	0.8631	0.5500	0.3131	0.0688	4.5540
2	Maruti Suzuki India Ltd.	2.2458	0.5500	1.6958	0.4145	4.0907
3	Tata Consultancy Services Ltd.	0.9834	0.5500	0.4334	0.1432	3.0263
4	HDFC Bank Ltd.	1.3119	0.5500	0.7619	0.3396	2.2436
5	Indian Oil Corporation Ltd.	0.8635	0.5500	0.3135	0.1586	1.9762
6	Kotak Mahindra Bank Ltd.	1.4209	0.5500	0.8709	0.5390	1.6157
7	Housing Development Finance Corporation	0.9206	0.5500	0.3706	0.3154	1.1749
8	Larsen & Toubro Ltd.	1.0791	0.5500	0.5291	0.8076	0.6551
9	State Bank Of India	0.5652	0.5500	0.0152	0.3731	0.0407
10	ICICI Bank Ltd.	0.4406	0.5500	-0.1094	0.8365	-0.1308
11	Reliance Industry Ltd.	0.3802	0.5500	-0.1698	0.4844	-0.3505
12	Infosys Ltd.	0.1503	0.5500	-0.3997	0.2678	-1.4927
13	Oil & Natural Gas Corporation Ltd.	-0.2597	0.5500	-0.8097	0.4616	-1.7543
14	Bharti Airtel Ltd.	-0.1642	0.5500	-0.7142	0.2702	-2.6429
15	Hindustan Unilever Ltd.	1.4938	0.5500	0.9438	-0.0960	-9.8313

The above table shows the excess return and excess return to beta ratio. Excess return is difference between expected return on the stock and the risk free rate of interest. The risk free rate (RF) is assumed to be 0.55% in the study. The excess return to beta ratio measure the additional return on a security per unit of systematic risk.

From the above table, ITC Ltd. has the highest excess return to beta ratio of 4.5540 while that of HINDUSTAN UNILEVER LTD has been -9.8313. This ratio provides the relationship between potential risk and reward from a company's stock.

The ranking of stock's done on the basis of excess return to beta ratio reveals that while the ITC Ltd has first rank and the Hindustan Unilivered Ltd has last rank.

Company Based on Ranks and Unsystematic Risk

S.No	Security	$\sigma^2 ei$	$(Ri-Rf)*B/ \sigma^2 ei$	$\sum_{i=1}^{N} \sigma^2 md(Ri-Rf)*Bi/$
1	ITC Ltd.	67.9249	0.0003	0.0145
2	Maruti Suzuki India Ltd.	103.268	0.0068	0.3440
3	Tata Consultancy Services Ltd.	80.5651	0.0008	0.3813
4	HDFC Bank Ltd.	116.036	0.0022	0.4892
5	Indian Oil Corporation Ltd.	176.878	0.0003	0.5028
6	Kotak Mahindra Bank Ltd.	184.563	0.0025	0.6259
7	Housing Development Finance Corporation	120.645	0.0010	0.6728
8	Larsen & Toubro Ltd.	172.409	0.0025	0.7927
9	State Bank Of India	192.857	0.0000	0.7942
10	ICICI Bank Ltd.	175.418	-0.0005	0.7689
11	Reliance Industry Ltd.	86.3448	-0.0010	0.7228
12	Infosys Ltd.	116.155	-0.0009	0.6783
13	Oil & Natural Gas Corporation Ltd.	137.083	-0.0027	0.5463
14	Bharti Airtel Ltd.	93.8480	-0.0021	0.4468
15	Hindustan Unilever Ltd.	43.4649	-0.0021	0.3459

In addition to the systematic risk of individual securities, their unsystematic risk as measure by $\sigma^2 ei$ computed and tabulated in the above table. It is the unique risk affecting the firm due to certain factors affecting only the company issuing such security. It is an avoidable or controllable risk. The companies listed on above table based on their ranks. The excess return is divided by the unsystematic risk ($\sigma^2 ei$) and multiplied by the beta (β) in order to calculate the Ci values.

The above table reveals that out of 15 companies State Bank Of India has the highest unsystematic risk($\sigma^2 ei$) value of 192.8570 and Hindustan Unilever Ltd. has lowest value of unsystematic risk of 43.4649

Ci of selected companies stock

S.No	Security	B^2/σ^2ei	N $1+\sigma^2m \ dB^2/\sigma^2eiI=1$	C^*
1	ITC Ltd.	0.0001	1.0048	0.0144
2	Maruti Suzuki India Ltd.	0.0017	1.0854	0.3169
3	Tata Consultancy Services Ltd.	0.0003	1.0977	0.3473
4	HDFC Bank Ltd.	0.0010	1.1458	0.4269
5	Indian Oil Corporation Ltd.	0.0001	1.1527	0.4362
6	Kotak Mahindra Bank Ltd.	0.0016	1.2289	0.5093
7	Housing Development Finance Corporation	0.0008	1.2688	0.5303
8	Larsen & Toubro Ltd.	0.0038	1.4519	**0.5460**
9	State Bank Of India	0.0007	1.4868	0.5341
10	ICICI Bank Ltd.	0.0040	1.6799	0.4577
11	Reliance Industry Ltd.	0.0027	1.8114	0.3990
12	Infosys Ltd.	0.0006	1.8413	0.3684
13	Oil & Natural Gas Corporation Ltd.	0.0016	1.9165	0.2851
14	Bharti Airtel Ltd.	0.0008	1.9541	0.2286
15	Hindustan Unilever Ltd.	0.0002	1.9644	0.1761

The above table represents Ci of selected companies. The B^2/σ^2ei and its cumulative are necessary for the calculation of Ci. The Ci value goes on increasing from 0.0144 to 0.5460 and thereafter, starts declining. Therefore, the value of 0.5460 is considered as the "cut-off point". The securities which come after the cut-off point will not be consider for the optimal portfolio construction.

Proportion of investment proposed

Rank	Securities	Ci	Zi	Xi
1	ITC Ltd.	0.0144	0.0041	9.0041
2	Maruti Suzuki India Ltd.	0.3169	0.0164	36.4468
3	Tata Consultancy Services Ltd.	0.3473	0.0054	11.9397
4	HDFC Bank Ltd.	0.4269	0.0066	14.5733
5	Indian Oil Corporation Ltd.	0.4362	0.0018	3.9338
6	Kotak Mahindra Bank Ltd.	0.5093	0.0047	10.4731
7	Housing Development Finance Corporation	0.5303	0.0031	6.8178
8	Larsen & Toubro Ltd.	**0.5460**	0.0031	6.8113
	TOTAL		= 0.0451	=100.000

The above table represents the proportion of investment to be made in each security. The 8 securities ranking from 1 to 8 are selected for the optimal portfolio construction. The percentage of funds to be invested in each security.
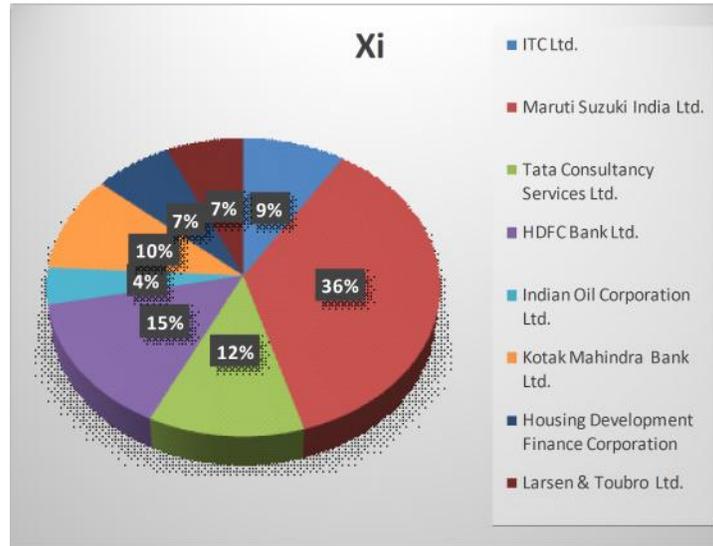
Proportion of investment proposed

In the selected 15 companies for construction of portfolio of 8 companies have been selected for the optimal portfolio construction applying Sharpe model. Once the companies on which investment is to be made are known it is essential to know the proportion of investment to be made in each company security.

The above table represents the proportion of investment to be made by the investor to earn maximum returns. The above Graph shows 36% of investment may be made in the Larsen & Toubro Ltd which means majority of the funds is to be invested on this company, followed by 14.63% in HDFC Bank Ltd, 11.97% in Tata Consultancy Service LTD, 10.42% in Kotak Mahindra Bank Ltd, 9.09% in ITC Ltd, 6.87% in Housing Development Finance Corporation, Again 6.87% in Larsen & Turbo limited and 3.99% in Indian Oil Corporation Ltd.

Findings

The findings of the present study are presented below:

To study trend of Equity in the stock market for selected companies: The stock returns of Maruti Suzuki Ltd have the highest return i.e. 2.24 and Bharti Airtel has the lowest return of -0.1642. If the investors want to earn a maximum return without considering the risk aspects then investment can be made on those securities which yield high returns. Even though the return is high the risk involved in the stock return should be consider while taking decisions.

To study the beta factor of the 15 companies: The ICICI BANK LTD has a highest beta value of (0.8358) that 1% change in market index (NSE) brings to 0.8358% changes in ICICI Bank price. HINDUSTAN UNILEVERED LTD has a lowest beta value that is (-0.0956) which represent lower volatility.

To find out the excess return to beta ratio from the securities: The excess return to beta ratio measures the additional return on a security per unit of systematic risk. The ITC Ltd. has the highest excess return to beta ratio of 4.5540 while that of HINDUSTAN UNILEVER LTD has been -9.8313. This ratio provides the relationship between potential risk and reward from a company's stock.

To calculate the cut-off rate which serves as a bench mark to select stocks to be included in a portfolio: The Ci value goes on increasing from 0.0144 to 0.5460 and thereafter, starts declining. Therefore, the value of 0.5460 is considered as the "cut-off point". The securities which come after the cut-off point will not be consider for the optimal portfolio construction.

To find out the proportion to be invested in particular security in portfolio: In the selected 15 companies for construction of portfolio of 8 companies have been selected for the optimal portfolio construction applying Sharpe model. the highest investment may be made in the Larsen & turbo ltd that is 36% which means majority of the funds is to be invested on this company, followed by 14.63% in HDFC Bank Ltd, 11.97% in Tata Consultancy Service LTD, 10.42% in Kotak Mahindra Bank Ltd, 9.09% in ITC Ltd, 6.87% in Housing Development Finance Corporation, Again 6.87% in Larsen & Turbo limited and 3.99% in Indian Oil Corporation Ltd.

Conclusion

Out of 15 companies taken for the study, 2 companies are showing negative return and the other 13 companies are showing positive returns. Risk is high in one company compare to other companies and also with negative return. The final decision of investing should be made only after considering the entire factor affecting to the securities. These can be general economic factor or any other macroeconomic factor which govern the movement and action of the movement of these securities.

Out of total 15 companies, only 8 securities that is ITC Ltd, Maruti Suzuki India Ltd, Tata Consultancy Service Ltd, HDFC Bank Ltd, Indian Oil Corporation Ltd, Kotak Mahindra Bank Ltd, Housing Development Finance Corporation Ltd and Larsen & turbo ltd Securities are selected for portfolio investment with the help of Sharpe Model. And also the portion is made to invest in each security which frames as an efficient portfolio which can give higher return with minimum risk.

Recommendation

As per the study any investors can minimize his risk and maximize his return of his investment with the analyzing each securities which are included in his portfolio. With help of this analysis the investor can take decision whether a security should be included in the portfolio or not. The investor should be careful about including the data of various security at economic condition in his portfolio will give proper result. Investors should not select securities randomly in their portfolios.

The investor should invest for long term rather than investing for shorter duration to maximize returns. All investments carry risk of some kind. Investor should understand the risk they are taking and invest in a manner that matches their risk tolerance. The return (Ri) gives an idea of the risk involved in making any investment. Investors should also consider the factors other than risk & return, which may affect from the outside in their investment decision.

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Navigating the World of Finfluencers: The Double-edged Sword for Indian Investors

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Abstract

The rise of financial influencers, or "finfluencers," has significantly changed how Indian investors access financial information. By using social media platforms, finfluencers have made financial education more accessible to a wider, tech-savvy audience, particularly millennials and Gen Z. They break down complex financial topics into easy-to-understand content, which has significantly improved financial literacy in India. However, the lack of regulation around finfluencers creates risks, such as spreading misinformation, conflicts of interest, and cognitive biases like overconfidence and herd mentality. Many finfluencers offer valuable insights but often fail to disclose sponsorships or financial interests, which raises ethical concerns about the reliability of their advice. This paper explores the dual impact of finfluencers on Indian investors, drawing on theoretical perspectives such as Diffusion of Innovations, Behavioral Finance, and Social Learning Theory. It examines both the advantages of finfluencers in enhancing financial literacy and the risks stemming from unregulated financial advice. The paper proposes a conceptual framework for understanding the influence of finfluencers on investment behavior and decision-making. It further emphasizes the need for regulatory measures to ensure transparency and ethical conduct, alongside enhanced financial literacy programs to equip investors with the knowledge needed to make informed decisions. Ultimately, the paper argues for a balanced approach that fosters innovation while safeguarding investor interests.

__Key Words:__ Cognitive Biases, Finfluencers, Financial Literacy, Investment Behavior, Regulatory Frameworks

Introduction

The digital age has instigated a profound transformation in how people think of financial advice, especially in India, where internet penetration is projected to surpass 850 million by 2023 (TRAI, 2023). Financial influencers, commonly referred to as "finfluencers," have emerged as a novel category of advisors, providing streamlined financial insights via platforms such as YouTube, Instagram, and Twitter. This inclination is particularly pronounced among millennials and Generation Z, who favor online financial education. Deloitte research indicates that 25% of individuals aged 18-24 utilize social media for financial guidance, and 20% make investment decisions based on social media suggestions.

Finfluencers connect traditional financial advisory services, typically inaccessible to the general populace due to exorbitant fees or complexity, with the increasing need for financial information in an increasingly digitized environment. Prominent financial influencers encompass CA Rachana Phadke Ranade, Ankur Warikoo, and Pranjal Kamra, who have garnered millions of followers by offering guidance on subjects from mutual funds to bitcoin. Their impact has democratized access to financial information, enabling individuals to make more informed investment choices.

This change is not without controversy, though. The legitimacy, morality, and legal compliance of influencers' recommendations are called into doubt due to their lack of official responsibility. The increasing impact of influencers on social media platforms, which continue to mold the financial ecosystem, highlights the need for a well-rounded strategy to guarantee accessible and trustworthy financial advice.

Literature Review

Financial Literacy and Social Media

The role of social media platforms in promoting financial literacy is becoming more widely acknowledged (Pandey & Sinha, 2021). Influencers make difficult financial concepts understandable by using captivating media like videos, memes, and live sessions. Das et al. (2020) warn that these platforms' unconfirmed content can spread false information, nevertheless. According to Mohapatra et al. (2021), platforms such as YouTube and Instagram offer easily comprehensible financial content that helps people learn the fundamentals of investing. However, the study also highlighted that there is potential for deception because of the wide variations in the legitimacy and quality of advice found on these platforms.

The Impact of Finfluencers on Behavior

Influencers have a great deal of psychological power. According to Jha and Patel (2023), followers frequently exhibit herd mentality and overconfidence, which can result in rash financial decisions. Millennials and Gen Z are more likely than earlier generations to trust influencers, according to Roy and Malhotra's (2022) analysis of generational disparities.

Relatability and Trust

Because of their apparent authenticity, investors tend to trust relevant influencers more than traditional advisors, according to research by ans and Kaur (2020) that examined the trust element in digital financial advice. However, because many influencers lack professional credentials, the study warned that such faith is frequently misplaced.

The Bandwagon Effect in Investment Decisions

The psychological effects of influencer-driven investing advice were investigated by Chopra et al. in 2022. They discovered that followers frequently have a herd mentality and act rashly when faced with viral information.

Role of Digital Influencers in Financial Decision-Making

Kumar and Raj's (2022) study looked at how influencers affect the financial habits of young investors. It was discovered that because of their sympathetic communication style and aspirational material, young adults are especially prone to follow influencers.

Ethical and Regulatory Challenges

The moral conundrums pertaining to influencers are widely known. According to Mishra and Gupta (2021), confidence is damaged by the fact that about 42% of Indian influencers do not divulge their promotional affiliations. The authors discovered that influencers frequently conflate advertising with content, which makes it challenging for followers to distinguish objective guidance. According to regulatory investigations conducted by SEBI (2023) and Sharma (2023), influencer-driven financial advice does not yet have any required compliance standards.

Comparative Global Insights

Around the world, nations like the UK and Australia have put strict regulations on financial influencers into place (Lee & Wong, 2021). According to Taylor et al. (2022), disinformation was greatly decreased by Australia's ASIC framework. These research, however, are not localized to the distinct demographic and regulatory setting of India.

Important gaps are missed in the current literature on social media and influencers' role in financial decision-making, such as a fair assessment of their dangers and advantages, Indian-specific regulatory frameworks, and long-term investment results. Furthermore, little is known about demographic and cultural aspects including the expanding millennial population and inadequate financial literacy. By assessing the dual impact of finfluencers, suggesting legislative remedies tailored to India, and examining case examples, this chapter fills in these gaps and provides investors and policymakers with useful information.

Theoretical Framework and Conceptual Approach

This chapter expands upon the findings of the literature review by utilizing three important theoretical frameworks-Social Learning Theory, Behavioral Finance, and Diffusion of Innovations-to examine the double effect of financial influencers (finfluencers) on Indian investors. These models offer a holistic perspective on the ways in which finfluencers bring new financial products to a tech-savvy audience, impact investment behavior, and change financial literacy, all while drawing attention to the hazards connected with these products.

Social Learning Theory

According to Bandura's (1977) Social Learning Theory, people pick up new behaviors by imitating and observing others. As approachable role models in the financial ecosystem, influencers are crucial in determining how their followers behave. By sharing personal stories and

demythologizing intricate financial ideas, they inspire their audience to follow in their footsteps while making investing choices. Although this helps democratize financial education, followers may take risks based on unreliable advice because there is little accountability or control.

Behavioral Finance

Based on the research of Tversky and Kahneman (1974), behavioral finance studies the influence of cognitive biases on investing choices. Influencers frequently take advantage prejudices like:

- **Herd Behavior:** Adherents imitate well-liked patterns that influencers advocate.

- **Overconfidence:** Influencers cause followers to make ill-informed decisions byinstilling an excessive amount of self-assurance in them.

- **FOMO (Fear of Missing Out):** The fear of passing up supposedly profitable opportunities is what motivates compulsive investing. This paradigm emphasizes the need for improved investor education and regulatory measures by highlighting the psychological vulnerabilities that influencers might exacerbate.

Diffusion of Innovations

Rogers' (2003) Diffusion of Innovations theory elucidates the process by which novel ideas and products achieve acceptance over time. Finfluencers serve as early adopters, presenting novel financial instruments like cryptocurrencies and digital payment systems to their audience. Their influence expedites the acceptance of these products, especially among India's youth. The swift distribution of high-risk products without adequate investor comprehension highlights the necessity for regulatory supervision and improved financial literacy initiatives.

This theoretical framework provides a thorough perspective to examine the opportunities and problems posed by finfluencers in the Indian financial landscape. Integrating Social Learning Theory, Behavioral Finance, and Diffusion of Innovations elucidates the impact of finfluencers on financial literacy, investing behavior, and the adoption of novel financial instruments, while emphasizing the related hazards. The subsequent parts expand upon this foundation to investigate the dual influence of finfluencers on Indian investors, analyzing their contributions and associated risks, and closing with pragmatic recommendations for establishing a balanced, responsible environment that promotes innovation while protecting investors.

Benefits of Finfluencers for Indian Investors

Democratization of Financial Knowledge

Finfluencers break down complex financial topics into simple, relatable terms. For example, Rachana Ranade's beginner tutorials on stock markets are credited with educating over a million first-time investors.

Encouraging Investment Culture

Finfluencers advocate for an investment culture rather than a saving culture. Campaigns promoting SIPs and index fund investments have led to a significant increase in retail involvement in mutual funds, as indicated by the AMFI report revealing 122 million SIP accounts in 2024.

Cost-Effective Advice

In contrast to conventional consultants who impose fees, finfluencers offer complimentary or low-cost content. This has especially benefited young professionals and students.

Awareness of Diverse Financial Instruments

Finfluencers emphasize obscure investment alternatives such as ETFs, REITs, and international mutual funds, thereby expanding investor perspectives.

Risks and Challenges of Following Finfluencers

Misinformation and Lack of Credibility

Numerous finfluencers lack qualifications such as CFP or CFA, resulting in guidance rooted in personal beliefs rather than robust financial principles. A 2023 SEBI poll indicated that 65% of retail investors uncritically rely on online recommendations.

Conflict of Interest

More and more people are worried about promotional content that looks like real help. For instance, a number of finfluencers have been accused of pushing shady plans in exchange for money.

Encouraging Risky Behavior

Speculative behavior is encouraged by content that inspires a sense of excitement, such as promises of high profits. A good example of this is the fall of the cryptocurrency market in 2022, which occurred when many beginner investors suffered losses as a result of following the advise of finfluencers.

Absence of Regulatory Oversight

In contrast to authorized consultants regulated by SEBI, finfluencers function within a vague domain. This regulatory deficiency heightens the possibility of unethical conduct.

Regulatory Landscape in India

The current framework requires investment advisors to register under the Investment Adviser Regulations (2013) as mandated by SEBI. Nevertheless, finfluencers are not subject to these regulations. Platforms such as YouTube and Instagram lack stringent financial content filtering, permitting the dissemination of incorrect information.

International Comparisons: Countries like as Australia and the UK mandate that financial influencers disclose their affiliations and comply with stringent regulations. India may implement analogous procedures to guarantee transparency.

Recommendations

For Regulators

- **Mandatory Disclosure Guidelines:** Financial influencers are required to explicitly disclose sponsorships and relationships to maintain transparency.

- **Accreditation Programs:** Implement certification methods to authenticate the credibility and proficiency of financial influencers.

For Investors

- **Cross-Verification:** Consistently verify the information disseminated by influencers with reliable and authoritative sources.

- **Professional Credentials:** Favor influencers possessing acknowledged financial credentials or pertinent experience.

For Finfluencers

- **Transparency:** Disclose any partnerships or financial incentives to maintain trust.

- **Responsible Content:** Present financial information accurately without sensationalizing or oversimplifying complex topics.

Conclusion

Within the context of the Indian financial sector, finfluencers are somewhat of a double-edged sword. It is impossible to overlook the hazards of disinformation and ethical failings, despite the fact that they make access to financial knowledge more accessible to the general public and encourage early investing. In order to mitigate the negative effects of finfluencers while also capitalizing on their potential, it is vital to take a balanced approach that includes stringent regulation, informed investor practices, and the production of ethical content.

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The Role of Contracts in Modern Business Management and Commercial Transaction

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Abstract

Contracts are the backbone of modern business management and commercial transactions, serving as essential tools to formalize agreements, manage risks, and foster trust among parties. This chapter delves into the multifaceted role of contracts, tracing their historical evolution and emphasizing their enduring importance in commerce. It explores the fundamental elements of contracts, such as offer and acceptance, consideration, and legal purpose, while examining diverse types of business contracts, including employment agreements, partnership deeds, and sales contracts.

The discussion highlights the strategic significance of contracts in business management, focusing on their role in risk mitigation, operational efficiency, and governance. It also addresses the digital transformation of contract management, showcasing the impact of technology, tools like contract lifecycle management software, and the adoption of e-signatures. Contracts as governance tools and mechanisms for dispute resolution are analysed to underscore their influence on organizational compliance and continuity.

In the realm of commercial transactions, contracts are presented as foundational instruments that standardize terms, ensure clarity in payment and delivery, and safeguard against risks. The chapter examines cross-border trade contracts, e-commerce agreements, and privacy policies, emphasizing their legal and commercial implications. Through case studies of landmark rulings and real-world examples, the practical applications and challenges of contracts are explored.

Concluding with insights into the future of contract management, the chapter examines emerging trends like smart contracts, blockchain, and AI-driven contract drafting. It recommends best practices for effective contract management and advocates for continuous legal and technological advancements to meet evolving business needs. This comprehensive analysis offers valuable perspectives for legal practitioners, business managers, and scholars alike.

1. Introduction

Contracts are the foundation of modern business and commerce, acting as legally binding agreements that establish the rights and obligations of the parties involved. By formalizing expectations and providing clarity on roles, responsibilities, and remedies, contracts play a crucial

role in fostering trust, minimizing disputes, and ensuring the smooth operation of commercial activities. They are integral to diverse aspects of business, from employment agreements to large-scale international trade transactions, ensuring consistency and reliability in economic relationships.

The concept of contracts is deeply rooted in history. In ancient societies, agreements were often verbal or symbolic, enforced by custom or local authorities. Over time, the growth of commerce and the complexity of trade necessitated the development of formalized agreements. Roman law introduced foundational principles like pacta sunt servanda (agreements must be kept), which influenced subsequent legal systems. The industrial revolution marked a turning point, with expanding global trade emphasizing the need for standardized contractual frameworks. Modern contract law has since evolved to address the complexities of cross-border transactions, technological advancements, and industry-specific regulations.

This chapter delves into the multifaceted role of contracts in modern business management and commercial transactions. It explores the core elements and types of contracts, their strategic importance in risk management, and their impact on operational efficiency. Additionally, it examines how digital transformation has reshaped contract creation and enforcement, highlighting innovations like e-signatures, contract lifecycle management tools, and emerging trends such as blockchain and smart contracts. Through a combination of theoretical insights and real-world examples, it illustrates how contracts continue to drive economic stability and growth.

2. Fundamentals of Contracts in Business

Contracts are the backbone of business operations, providing a legal framework for parties to define their rights, obligations, and expectations. This section explores the key elements of a contract, the various types of business contracts, and their critical role in ensuring smooth operations.

2.1. Key Elements of a Contract

A valid contract must include the following essential elements:

1. Offer and Acceptance:

A contract begins with an offer made by one party and its unequivocal acceptance by the other. The offer must be clear, and the acceptance must be unconditional to ensure mutual agreement. For instance, a supplier offering goods at a fixed price and the buyer accepting those terms creates a binding agreement.

2. Consideration:

Consideration refers to the value exchanged between the parties, such as money, goods, services, or promises. It ensures that both parties have something at stake, making the contract enforceable. Without consideration, an agreement becomes a mere promise rather than a binding contract.

3. Legal Purpose:

A contract must have a lawful objective to be valid. Agreements involving illegal activities, such as fraud or smuggling, are not enforceable. For example, a contract for providing consulting services is valid, whereas one for smuggling goods is void.

4. Competent Parties:

Both parties entering the contract must have the legal capacity to do so. This means they should be of legal age, mentally sound, and not disqualified by law. Contracts with minors or individuals under the influence of substances are generally voidable.

5. Free Consent:

Consent of the parties must be free and not influenced by coercion, undue influence, fraud, or misrepresentation. Any contract formed without genuine consent can be challenged in a court of law.

2.2. Types of Business Contracts

Contracts are tailored to meet specific business needs. Common types include:

1. Employment Contracts:

These outline the terms and conditions of employment, including job roles, remuneration, benefits, and termination clauses. They protect both employers and employees by clarifying expectations.

2. Partnership Agreements:

These define the terms of a partnership, such as profit-sharing ratios, management responsibilities, and dispute resolution mechanisms, ensuring smooth collaboration between partners.

3. Sales Contracts:

Common in trade, these agreements specify the terms of buying and selling goods or services, including payment terms, delivery timelines, and warranties.

4. Service-Level Agreements (SLAs):

SLAs are prevalent in service industries, setting performance standards and outlining penalties for non-compliance. For example, an SLA between an IT company and its client may specify system uptime guarantees.

5. Lease and Licensing Agreements:

These govern the use of property or intellectual assets, outlining terms for duration, payments, and restrictions. They are critical in real estate and intellectual property management.

2.3. Role of Contracts in Business Operations

Contracts play a pivotal role in ensuring the seamless operation of businesses:

1. Setting Clear Expectations for All Parties:

Contracts precisely define roles, responsibilities, and deliverables, leaving no room for ambiguity. This clarity ensures all parties are aligned on their obligations.

2. Reducing Disputes by Formalizing Agreements:

By documenting terms in a legally enforceable manner, contracts help avoid misunderstandings and disputes. In case of disagreements, the contract serves as a reference point to resolve conflicts.

3. Building Trust and Credibility:

Well-drafted contracts demonstrate professionalism and commitment, fostering trust between parties. They provide assurance that all parties are bound to fulfill their obligations, enhancing long-term relationships.

3.1. Strategic Importance of Contracts in Management

1. Facilitating Risk Management:

Contracts act as risk management instruments by defining clear terms and conditions, safeguarding parties against uncertainties. For instance, a well-drafted contract can allocate risks, such as delays or non-performance, and include indemnity clauses to protect one party from potential liabilities.

2. Enhancing Operational Efficiency:

By outlining precise roles, deliverables, and timelines, contracts ensure smooth operations. Standardized agreements allow businesses to minimize delays and prevent resource wastage. For example, a service-level agreement (SLA) in an IT setup defines performance metrics, ensuring that both provider and client maintain efficiency.

3. Defining Roles and Responsibilities:

Contracts establish clear boundaries for the duties and obligations of each party, avoiding overlap or confusion. This clarity enhances accountability and promotes a collaborative work environment. In project management, contracts align all stakeholders to a common goal, reducing the risk of disputes and mismanagement.

3.2. Digital Transformation and Contract Management

1. Role of Technology in Contract Drafting, Negotiation, and Execution:

Technology has revolutionized contract management, enabling businesses to draft, review, and execute agreements with greater speed and accuracy. Automated templates, AI-powered

tools, and machine learning assist in drafting error-free contracts and identifying potential risks during negotiation. These tools also enable faster turnaround times in finalizing agreements, improving operational agility.

2. Tools Like Contract Lifecycle Management Software:

Contract lifecycle management (CLM) software simplifies the contract process, from drafting to execution and renewal. These platforms provide centralized repositories for document storage, enabling businesses to track contractual obligations, deadlines, and amendments. By ensuring consistent oversight, CLM tools reduce human errors and enhance transparency. For instance, platforms like DocuSign or Icertis are widely adopted for their robust features in managing contract workflows.

3. E-Signatures and Their Legal Validity:

E-signatures have become a cornerstone of digital contract management. Recognized as legally binding in most jurisdictions, they facilitate faster execution of agreements without the need for physical presence. This is particularly beneficial in globalized business environments where cross-border agreements are common. Laws such as the Electronic Signatures in Global and National Commerce Act (ESIGN) in the United States and the Information Technology Act in India validate the use of e-signatures, enhancing their acceptance and credibility.

3.3. Contracts as Governance Tools

1. Enforcing Compliance with Organizational Policies:

Contracts serve as instruments for ensuring adherence to internal policies and standards. For example, vendor contracts may include clauses requiring compliance with an organization's ethical sourcing policies.

2. Ensuring Regulatory Adherence:

Businesses operate in an environment governed by complex regulations. Contracts help ensure compliance with local and international laws, reducing the risk of legal penalties. For instance, non-disclosure agreements (NDAs) ensure that sensitive information is handled in accordance with data protection laws like the GDPR or HIPAA.

3.4. Dispute Resolution and Conflict Management

1. Role of Arbitration and Mediation Clauses in Contracts:

To avoid lengthy and costly litigation, many contracts include arbitration or mediation clauses. These mechanisms provide structured frameworks for resolving disputes efficiently. Arbitration ensures binding resolutions by a neutral third party, while mediation fosters mutual agreement through negotiation.

2. Impact on Business Continuity:

Well-drafted dispute resolution clauses ensure that conflicts are resolved with minimal disruption to business operations. By specifying jurisdiction, governing laws, and resolution timelines, contracts help businesses maintain continuity even in the face of disagreements.

4.1. Contracts as Foundations of Trade

In commerce, contracts standardize the terms of trade, enabling seamless business interactions. For domestic and international trade, they formalize obligations such as payment schedules, delivery terms, and quality standards. This standardization minimizes ambiguities, ensures accountability, and reduces the likelihood of disputes.

For instance, a domestic sales contract may specify the delivery timeframe, payment mode, and penalties for delays, while an international agreement might include additional provisions for customs duties, tariffs, and applicable laws. By defining these terms, contracts facilitate smooth transactions and enable parties to focus on their core business operations.

Additionally, contracts establish clarity regarding payment terms and delivery schedules. Whether through instalment plans, letters of credit, or milestone payments, contracts ensure that parties adhere to agreed-upon timelines. This clarity fosters trust, particularly in large-scale and high-value transactions, by assuring all stakeholders that their rights and obligations are protected.

4.2. Contracts in E-Commerce and Digital Transactions

In the digital era, contracts have become indispensable for e-commerce and online transactions. Terms of service agreements govern the relationship between businesses and their customers, outlining acceptable usage, payment obligations, and dispute resolution mechanisms. These contracts also protect businesses from liability by clearly stating the limitations of their services.

Privacy policies and data protection clauses are equally significant in digital transactions. With growing concerns over data security, contracts now include provisions to ensure compliance with regulations like the General Data Protection Regulation (GDPR). These clauses outline how personal information is collected, stored, and used, fostering transparency and trust among users.

For example, an online retailer's privacy policy might specify how customer data will be used for marketing purposes, while also offering an opt-out mechanism. Such contractual terms not only enhance user confidence but also protect businesses from legal repercussions.

4.3. Cross-Border Trade and Contracts

International trade relies heavily on contracts to navigate complex legal and regulatory environments. Instruments like the United Nations Convention on Contracts for the International Sale of Goods (CISG) provide a standardized framework for international sales, promoting fairness and predictability in cross-border transactions.

However, cross-border contracts come with unique challenges. Currency fluctuations can affect the value of payments, requiring contracts to include currency hedging clauses. Jurisdictional issues are another concern, as parties may be subject to different legal systems. To address this, contracts often specify governing laws, arbitration venues, and applicable dispute resolution mechanisms.

For instance, an export contract between a U.S. seller and an EU buyer may designate New York law as the governing legal framework and specify arbitration in a neutral venue like Switzerland. These provisions ensure that both parties have clarity on how disputes will be handled, reducing uncertainty and promoting smooth trade.

4.4. Risk Mitigation Through Contracts

Contracts are vital tools for mitigating risks in commercial transactions. They provide protection against non-performance by including penalties for breaches and performance guarantees. For instance, a supply contract may impose financial penalties on a supplier for failing to meet delivery deadlines, incentivizing adherence to terms.

Additionally, contracts safeguard intellectual property (IP) and trade secrets. Non-disclosure agreements (NDAs) and confidentiality clauses ensure that proprietary information shared during negotiations or collaborations is not misused. In industries where innovation and IP are critical, these clauses are indispensable for protecting competitive advantages.

Contracts also protect businesses from unforeseen disruptions. Force majeure clauses, for example, outline the procedures to follow in cases of natural disasters, pandemics, or other events beyond the control of the parties. Such provisions ensure that businesses can manage risks effectively and maintain continuity despite external challenges.

5. Case Studies and Real-World Applications

Contracts play a pivotal role in shaping business practices and outcomes. The analysis of landmark cases and real-world applications demonstrates how well-drafted contracts can mitigate risks and promote operational success.

5.1. Landmark Cases in Contract Law

One of the most significant cases in contract law is Carlill v. Carbolic Smoke Ball Co. (1893), which established foundational principles of unilateral contracts. The company's advertisement promising a £100 reward for using its product was deemed a binding offer when Mrs. Carlill fulfilled the conditions but did not receive payment. The court's ruling affirmed that clear terms and acceptance by conduct create enforceable obligations.

This case emphasized the need for precision in drafting promotional offers and terms, serving as a cautionary tale for businesses to avoid unintended liabilities. Another landmark case, Hadley

v. Baxendale (1854), introduced the principle of foreseeability in breach of contract. The ruling restricted recoverable damages to those foreseeable by both parties at the time of agreement, encouraging businesses to explicitly communicate critical details in contracts.

5.2. Real-Life Applications in Business

In practice, corporations leverage contracts to enhance risk management and ensure compliance. For instance, IBM utilizes contract lifecycle management (CLM) software to streamline operations, reduce errors, and maintain legal compliance globally. This proactive approach has minimized disputes and ensured adherence to deadlines, highlighting the efficiency of digital contract tools.

Conversely, the Foxconn-Sharp acquisition deal in 2016 illustrated the repercussions of poorly drafted contracts. Discrepancies in disclosed liabilities delayed negotiations, leading to financial losses and reputational damage. This case underscores the necessity of thorough due diligence and comprehensive contractual terms to prevent similar issues.

6. Challenges and Future Directions

In today's rapidly evolving business environment, contract management faces several challenges that require careful attention and strategic solutions.

6.1. Challenges in Modern Contract Management

One significant challenge is the increasing complexity of global trade agreements. As businesses expand internationally, contracts must navigate various legal frameworks, regulations, and cultural norms, making them more intricate and difficult to manage. This complexity can lead to misunderstandings or breaches if not meticulously handled.

Another major concern is the risks associated with poorly drafted contracts. Ambiguities, vague terms, and inadequate provisions can result in costly disputes and litigation. Inadequate contract clauses might leave parties vulnerable to unforeseen risks, such as breaches of confidentiality or non-performance.

Additionally, cybersecurity threats pose significant risks to digital contracts. As businesses move to online platforms and use e-signatures, the security of sensitive data becomes a top priority. Hackers targeting digital contracts could compromise business operations, breach confidentiality, or even alter contract terms. Securing digital contracts through encryption and other safeguards is essential to prevent these risks.

6.2. Future of Contracts in Business and Commerce

Looking ahead, smart contracts powered by blockchain technology promise to revolutionize the way contracts are executed. These self-executing contracts automatically enforce terms and conditions, reducing the need for intermediaries and enhancing efficiency, transparency, and trust.

Blockchain ensures that contract terms are immutable and tamper-proof, offering a new level of security in digital transactions.

Artificial Intelligence (AI) is also reshaping contract management. AI tools can assist in drafting, reviewing, and negotiating contracts by identifying potential risks, ensuring compliance, and automating repetitive tasks. This significantly reduces time and human error in contract preparation.

Lastly, as technology continues to evolve, legal frameworks will need to adapt to address these advancements. Governments and regulatory bodies will likely update contract law to integrate digital tools, AI, and blockchain technologies, ensuring that businesses are protected while embracing innovation.

Conclusion and Recommendations

Contracts are fundamental to business management and commerce, providing clarity, security, and a framework for dispute resolution. They define relationships, ensure compliance, and mitigate risks in domestic and international transactions. Whether in employment, sales, or service agreements, contracts are essential tools for managing expectations and protecting business interests.

To manage contracts effectively, businesses should focus on clear, precise drafting that addresses all potential risks. Best practices include using standardized templates, ensuring mutual understanding of terms, and incorporating clauses that address contingencies, dispute resolution, and compliance. Additionally, implementing contract lifecycle management software can help streamline the process and improve efficiency.

As the business environment evolves, it is crucial to stay updated on legal and technological advancements. This includes embracing smart contracts and blockchain technology for enhanced security and automation. Artificial intelligence can also play a vital role in improving contract analysis and execution.

In conclusion, businesses must prioritize robust contract management practices and continuously adapt to legal and technological changes to maintain competitive advantage and reduce risks.

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The Impact of Investor Over Confidence Bias on Investment Strategy: A Behavioral Finance Perspective

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Abstract

As international financial markets continue to evolve and grow increasingly complex, the integration of behavioral finance into these markets has become more widespread. Simultaneously, with rising living standards, the securities market has emerged as an attractive investment avenue. Ensuring the stability of investment markets is vital for safeguarding investors' wealth and enhancing national living standards. This underlines the need to examine how irrational behaviors influence stock market dynamics.

Among such behaviors, overconfidence bias stands out as a prevalent psychological tendency. Studying its impact on investment portfolios is therefore crucial. This paper explores the influence of overconfidence bias on investors' strategies using a combination of literature review and empirical analysis.

The findings reveal that overconfidence bias exhibits distinct relationships with returns across the initial, peak, and declining phases of investment. The study also confirms the presence of overconfidence bias among investors, with manifestations such as the better-than-average effect (BTAE) and the illusion of control. These traits affect trading volume, return volatility, and market efficiency in varying ways. Additionally, the paper discusses the role of contrarian investment strategies (CIS) in mitigating the adverse effects of overconfidence bias.

Keywords: Investment decision, behavioral finance, overconfidence biases, illusion of control.

Introduction

The Efficient Market Hypothesis (EMH) forms the foundation of modern financial theory, positing that markets are efficient, with rational investors who share homogeneous expectations and aim to maximize benefits at a given level of risk. Similarly, under the Capital Asset Pricing Model (CAPM), investors are viewed as information traders who make decisions based on rationality. However, the Behavioral Asset Pricing Model (BAPM) challenges this view by integrating psychology and sociology into financial theory, recognizing the presence of noise traders who deviate from mean-variance optimization, potentially causing market inefficiencies.

This paper examines the impact of overconfidence bias on investment strategies through a literature review and empirical analysis. It begins by introducing the characteristics of overconfidence bias and its variations at different stages of investment. The study then explores the relationship between overconfidence bias and key market metrics such as trading volume, return volatility, and market efficiency.

As not many papers focus on this side in detail, this paper aims to examine the effect of overconfidence bias on investor investment strategy through literature review and empirical methods. The paper firstly introduces the characteristics of the overconfidence bias, explores the change in the overconfidence bias, and returns at different stages through a model. Secondly, the article investigates the impact of the overconfidence bias on investment strategies, specifically to evaluate the relationship between the overconfidence bias, trading volume, return volatility, and market efficiency. Subsequently, factors that affect overconfidence bias in the investment decision process are adopted, specifically focusing on bull and bear markets and personal characteristics. The paper will also clarify investment strategies to overcome the bias before drawing a logical conclusion. Based on the study findings, an outlook and perspective on future challenges to investment according to behavioral finance were conducted. Against the background of the continuous diversification of international financial markets, this paper analyses the impact of this irrational psychology on the securities market from the research perspective of overconfidence bias in behavioral finance, which helps investors to enhance their risk awareness and establish rational investment strategies and also contributes to the stability of the investment market. Analyzing the shortcomings of the current research and the directions worth exploring in the future also provides guiding ideas for future financial market regulators to establish a unified risk metric.

Overconfidence Bias:

Characteristics of Overconfidence Bias: Overconfidence bias is a prominent emotional bias in which investors overestimate their abilities and personal traits, often ignoring rational analysis of market conditions. This leads to emotionally driven, suboptimal investment decisions.

One key characteristic of overconfidence bias, identified by Svenson, is the better-than-average effect (BTAE). This effect occurs when individuals perceive their skills and abilities to be superior to those of their peers. For example, a survey revealed that most drivers believed they were more skilled and less risky than the average driver in their group rather supported this finding, noting that BTAE reflects people's tendency to overrate their abilities and knowledge compared to the average. Another feature of overconfidence bias is the illusion of control, where individuals unconsciously inflate their perception of success probabilities, even when the actual likelihood of success is objectively low.

The Influence of Overconfidence Bias on Investment Decision: Overconfidence bias leads to increased trading volumes, higher volatility, and market inefficiency. Numerous studies have explored the relationship between overconfidence bias, trading volume, return volatility,

and market efficiency. Sheikh found that overconfident investors often misattribute their past market success to their own trading and valuation abilities, overstating the clarity and accuracy of their information. When overconfident, these traders become more self-assured in their decisions, believing they possess unique information. As a result, they tend to underestimate the information of other traders, driving up their trading volumes. These investors are also more likely to trade aggressively following strong market returns, believing they can maximize their gains. Gervais and Odean supported this view, suggesting that trading volume driven by overconfident traders typically results in greater aftermarket gains and fewer losses.

However, Sheikh did not find significant evidence linking overconfidence-related trading with volatility in conditional returns. In contrast, Abbes' study, using EGARCH models, showed that overconfidence-related trading volume is positively correlated with conditional volatility. This finding provides a compelling explanation for the financial instability seen during the 2008 financial crisis, though the loss of investor confidence during the subprime crisis made overconfidence bias less influential in explaining market volatility.

Ko and Huang proposed that moderate overconfidence can enhance market efficiency and liquidity. They argued that when investor overconfidence is not extreme, the negative impact of mispricing caused by overconfident investors is outweighed by the positive effects of providing information. In certain situations, even high levels of overconfidence can improve market efficiency. Moreover, Goel and Thakor suggested that overconfident CEOs, under value-maximizing corporate governance, may be better at maximizing shareholder interests than rational CEOs, as they tend to overestimate the accuracy of their judgments of the information, helping to mitigate under-investment decisions and ultimately enhancing the firm's value. However, if overconfidence surpasses a certain threshold, it can result in overinvestment, leading to insufficient funding and a reduction in the company's value.

Factors Affecting Investors' Overconfidence Bias:

Bull Markets or Bear Markets: Shi &Wang identified that investors in bull markets are more overconfident than those in bear markets, as the former can wrongly attribute their successful trades (luck) to their own abilities. This also leads to worse investment performance in the bull market. Shi &Wang also proved that investors in the bull market turn over their investment portfolios more frequently than those in the bear market.

Personal Characteristics: The relationship between investors' personal characteristics and overconfidence bias has garnered considerable attention, particularly in relation to factors such as gender, age, income, and education.

Barber and Odean's study suggest that overconfidence is somewhat linked to gender, with men generally displaying more confidence in stock trading than women. They analyzed data from 35,000 households between February 1991 and January 1997 and found that men traded 45%

more frequently than women. Despite this, women tended to outperform men in terms of earnings, with men's net returns being reduced by 0.93 percentage points more than women's due to frequent trading. However, a more recent study by Sonawane casts questions the significance of gender in overconfidence bias. Using a t-test on questionnaire data, Sonawane found that the significance level of the results was greater than 0.05, suggesting no substantial evidence for gender's impact on overconfidence bias.

Dhar and Zhu also noted that investors with more extensive work experience and higher income tend to trade less frequently, which helps to mitigate the disposition effect. Mishra and Metilda further supported this idea, stating that investor overconfidence tends to increase with past investment experience and higher levels of education.

Investment Strategy to Overcome Overconfidence Bias:

A comprehensive and rational analysis of the market scenario is essential for making informed investment decisions. According to Mitali's research, both fundamental and technical analysis of assets are necessary before making any investment choices. Mitali also advises new investors, who may lack financial knowledge, to consult with financial professionals or investment communities for guidance rather than engaging in irrational actions like speculation. Financial literacy plays a key role in helping investors recognize overconfidence bias, enhance their financial awareness, make better investment decisions, and manage portfolio risk more effectively.

In a study of the UK stock market from 1975 to 1998, Gregory compared stocks with poor past performance or low expected future performance with those exhibiting strong past performance or high future expectations. The findings revealed that stocks with poorer performance actually yielded significantly higher returns. This supports Kern's observation that investors often display confirmation bias-seeking information that reinforces their investment strategies and ignoring opposing views. Therefore, the most effective approach for investors may be to actively seek contrary opinions and carefully evaluate the pros and cons of their investment strategies.

Discussion:

The academic research on investor overconfidence and its impact on portfolios still has significant gaps. Most of the existing studies primarily rely on qualitative analysis and lack comprehensive quantitative data that captures the broader capital market and economic environment. Many of the findings are based on small sample sizes, typically using specific groups or stocks within a particular country or time period. This narrow focus may limit the reliability and generalizability of the results. Future research should aim to extend beyond single-country or regional studies and explore cross-country comparisons to better understand the role of overconfidence in stock markets across different global contexts.

Despite the growing body of theoretical research and models on overconfidence, there remains a lack of standardized and objective indicators for measuring this bias. The literature has

inherent limitations and subjectivity in quantifying "overconfidence." Therefore, further efforts are needed to develop comprehensive and universally applicable measurement tools for overconfidence. Financial market regulators, in collaboration with economic policymakers, should work towards establishing standardized metrics for overconfidence. This would help guide and intervene in investors' decision-making processes, ultimately improving market efficiency and stability.

Conclusion:

This paper explores the relationship between behavioral finance and investment strategies, focusing specifically on the impact of overconfidence bias. It addresses five key questions: the characteristics of the better-than-average effect (BTAE) and the illusion of control in overconfidence bias; the return performance at different stages of overconfidence bias; the effect of overconfidence bias on equity market trading volume, volatility, and market efficiency; how overconfidence bias is influenced by various market scenarios and individual investor characteristics; and the strategies and mechanisms to manage this bias. This research offers valuable insights into how behavioral finance influences investment strategies, helping investors and companies cultivate a better understanding of investment psychology, improve risk awareness, and make more informed investment decisions.

The primary limitation of this study is the lack of quantitative data regarding the broader economic environment and the overall capital market. Future research should focus on developing standardized "overconfidence measurement indicators" and establishing relevant regulatory frameworks for financial markets.

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Celebrity Endorsement: Risks vs. Returns

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Abstract

In an era of Globalization and liberalization, the advertising industry has seen a growth across the world. With the growing market there are lots of competitors who are making up in this industry and thus leading to competition in market. Celebrity Endorsements have been highly used in Indian context and has become a worldwide phenomenon in the field of advertising. Bubbling out amazing results in brand building and brand loyalty, celebrity endorsements in some cases have been seen influencing the decision-making process of consumers. Celebrity endorsement is very popular and widely used in advertising. From magazines to TV advertisements, from toothpaste to luxury goods, celebrity-endorsed products have penetrated almost every aspect of our lives. This research paper provides an insight into the concept of celebrity Endorsement along with the returns and risks that are associated with it.

Keywords: *Celebrity Endorsement*

Introduction

A Celebrity endorser is explained as an individual who is known to the public (actor, sports figure, entertainer) for his or her achievements in the areas different from the areas in which the product class is endorsed (Friedman and Friedman, 1979). A celebrity endorser is one who enjoys public recognition and who uses this recognition on behalf of a consumer good by appearing with it in an advertisement (McCracken, 1989).

The term Celebrity Endorsement may be defined as a type of advertising tool where a celebrity declares support, approval and patronage in favor of a particular product and thus, influences the behaviour of the masses so that they buy the products.

There was a time when Indian people used to watch a TV channel i.e. DOORDARSHAN and were shown only two programs enthusiastically viz. Ramayana and Mahabharata and that too were viewed on the TV sets of their neighbors. But today more than 277 million individuals are having TV sets in their homes viewing 823 channels covering all the languages spoken in the country. Here, a point that needs to be stressed upon is, in an hour of watching TV, commercials are shown for 15 minutes and 38 seconds, per hour. And, this leaves a huge impact on the minds of the viewers.

Over a period of hundred years, a lot many changes have been observed in the Indian economy in terms of growth and development. India is constantly progressing and the standard

of living of its people is displaying an upward graph of improvement. Presently, in the modern marketing era, when the cut-throat competition prevails in the market and where each & every person want to live a lavish life, a good quality product with satisfactory attributes placed at an affordable price is not enough alone, it becomes the need of the hour to get the hang of the customers if a marketer wishes to enhance the market standing. A product demands to be promoted, advertised and that too by the popular celebrities (models & actresses), adding in it a glamorous touch. Advertisements that are backed by the prominent personalities play a pivotal role in the customers 'purchase decision criteria. Rather, sometimes it is the only factor that induces a henchman to buy a specific product. Just because one's favorite celebrity is recommending a product, one is satisfied of its quality and attributes and hence, puts it as a status symbol.

Review of Literature

Title of the paper, Name of the journal, Author's name, Year & Location	Research Objectives	Research Methodology	Research Findings
Title: Construction and validation of a scale to measure celebrity endorser's perceived expertise, trustworthiness and attractiveness. **Name of the Journal:** Journal of Advertising, vol.19, no.3, pg. 39-52. **Author's Name:** Rubina Ohanian **Year:** 1991 **Location:** Austin	To investigate: 1) the impact of the components of source credibility (Attractiveness, expertise and trustworthiness) on a respondent 's purchase intention. 2)Variance in this impact because of the intended use of product (self- consumption vs. gift- giving). 3)Variance in this impact because of respondent 's gender.	15-item source credibility scale. 542 respondents participated in study. ANCOVA is used as a statistical tool. Exploratory factor analysis Confirmatory factor analysis	1)Physical attractiveness and trustworthiness of celebrities were not found to be significantly related to the purchase intention. 2)Celebrities' perceived expertise was found to be significantly related to the respondents' purchase intensions.

Title of the paper, Name of the journal, Author's name, Year	Research Objectives	Research Methodology	Research Findings
Title: The match-up effect of spokesperson and product congruency: A schema theory interpretation. **Name of the Journal:** Psychology & Marketing, vol. 11, Issue 5. **Author's Name:** James Lynch & Drue Schuler **Year:** 1994	To understand the effect of muscularity based congruence on spokesperson schema and on product schema.	The study had used a wide variety of 28 products for experiments. **Dependent variable:** Spokesperson expertise A sample of 200 was obtained from 2 universities. MANOVA, using gender of respondents as covariate was conducted to determine the effects of the treatments on the perception of product attributes.	1)The results revealed a match between spokes person muscularity and products related to muscularity and masculinity appeared to facilitate the transfer to the schema of spokes person of the information that the spokesperson knew about the product. 2)It is also found that the point of experiment was not the strength dimension of the product. In this case, spokes person-muscularity/ product- type interaction was not significant i.e. there was no significant effect of match on product schemas.
Title: Factors influencing teenager's purchase intention towards celebrity endorsed apparels in China **Name of the Journal:** **Author's Name:** Ling Chang Year: 2011 Location: China	The prime objective Was to investigate the relationship between psychological factors, socio cultural one, product attributes, attitude and teenagers ' purchase intention towards celebrity endorsed apparels in China.	Total 384 young students as respondents were selected consisting of 173 girls and 211 boys lying in the age group of 12 to 19 years. A well-structured questionnaire was designed. Statistical tools that were used were: ANOVA and EBM model.	1) 47% respondents agreed that while price was important but quality of the product was not as significant at the time of purchasing celebrity endorsed apparels. 2) 48.9% of the teenagers believed that celebrity endorsed apparels are attractive.

Title of the paper, Name of the journal, Author's name, Year & Location	Research Objectives	Research Methodology	Research Findings
Title: Investigating endorser personality effects on brand personality: Causation and reverse causation in India. **Name of the Journal:** Journal of Brand Strategy **Author's Name:** Roy and Moorthi **Year:** 2012 **Location:** India	To investigate the transfer process of personality traits from the celebrity to the endorsed brands.	Cricketer Sachin Tendulkar was selected among the celebrities and Pepsi as the endorsed brand. Aaker's(1997) brand personality scale was used to measure the celebrity's and brand's personality. 2)Sample size were selected for study- 196 and 198. EFA and SEM were used to analyze the data.	1)The brand personality scale developed by Aaker (1997) was found reliable and valid for both the celebrity and the brand. 2)The study found the evidences of the personality transfer from celebrity to brand. 3) The study also suggested the reverse transfer of personality from brand to celebrity may take place if the brand has strong personality.
Title: A study on the impact of celebrity endorsement and overall brand which influence consumer 's purchase intention. **Name of the Journal: Author's Name:** T.V. Manjusha and Dr. V. Segar Year: 2013 Location: India	1)To examine the role of celebrity endorsement as an advertisement talent in Chennai marketplace and the effect it has on overall brand image. 2)To find out how important celebrity endorsement is to the consumers, does it affects their responsiveness and awareness towards the brands. 3)To find out the celebrity endorsement markets in Chennai which keeps on changing from time to time.	A sample of 100 respondents were selected for the same and the data was collected with the help of structured questionnaire and in-depth interviews which was then analyzed with the help of factor analysis technique.	1)45% of the respondents indicated that a right celebrity brand match ensures strong and long lasting impression of the product on the mind of the consumers. 2)30% of the respondents indicate that however, it needs to be qualified with respect to the company benefits of promotion and overall strategy and budgets. 3)20% of the respondents answered that there has to be proper congruence between celebrity personality and the product profile.

Title of the paper, Name of the journal, Author's name, Year & Location	Research Objectives	Research Methodology	Research Findings
Title: Celebrity attributes and influence on Consumer Behaviour- A study of Shekhawati region of Rajasthan. **Name of the Journal:** Pacific Business Review international **Author's Name:** Dr. Sushil Kumar Rai and Ashish Kumar Sharma **Year:** 2013 **Location:** Rajasthan, India	The main objective of the study was to identify the attributes of the celebrities that define the success of using a celebrity in the promotion of the product. To measure its influence on the behaviour of the consumer in context of branded products and services.	60 respondents participated in study. **Statistical tools used:** a) Mean b)Standard Deviation c) Skewness d) Kurtosis e) Chi-square test	Celebrity Controversy, gender and their profession have no significant influence on the buyer behaviour whereas celebrity attractiveness, credibility, performance, popularity and territory significantly impacts the purchase intentions of customers.

Objective of Study

To identify the risks and returns that is associated with Celebrity Endorsement.

Method of Study

The present study uses secondary data in the light of the requirement of the research objective. This secondary data is collected from different sources like: -

• Journals, magazines, periodicals and publications.

• Newspapers having information in these fields.

• Through Internet.

Returns that may be earned with the use of Celebrity endorsement

Brands have been leveraging celebrity appeal for a long time. It is happening across categories, whether in products or services, more and more brands are banking on the mass appeal of celebrities.

E.g. Rahul Dravid, one time captain of Indian Cricket team is a Brand Endorser for Reebok India Ltd and internationally US Actress Scarlet Johnson is also a brand endorser for Lifestyle category of Reebok Inc. (Internationally & Domestically).

For Pantaloon an Indian Brand, the Brand Endorser for fresh fashion Apparels and Accessories is Bipasha Basu, Lara Dutta, Zayed Khan & Sunny Doel all of these accreted names are Bollywood Stars. The agreement of celebrity endorsements can be justified by the following advantages that are bestowed on the overall brand:

1. Establishment of Credibility:

Approval of a brand by a star, fosters a sense of trust for that brand among the target audience- this is especially true in case of new products. There was a promo of cars by Shah Rukh-Santro campaign. At launch, Shah Rukh Khan endorsed Santro and this ensured that brand awareness was created in a market, which did not even know the brand.

2. Ensured Attention:

Celebrities ensure attention of the target group by breaking the clutter of advertisements and making the ad and the brand more noticeable.

For e.g. Aishwarya Rai, a brand endorser for Lo 'real definitely catches the attention of her Fans who would aspire to be like her.

3. PR Coverage:

It is one major reason for using celebrities. Managers perceive celebrities as topical, which create high PR coverage. A good example of integrated celebrity campaigns is one of the World's leading pop groups, the Spice Girls, who have not only appeared in advertisements for Pepsi, but also in product launching and PR events. Kalyan Jewelers, India's largest directly owned jewelry retail chain has Amitabh Bachchan and Aishwarya Rai Bachchan represent Kalyan Jewelers nationally. Aishwarya Rai Bachchan inaugurated various showrooms which gave the brand a massive PR coverage.

4. Higher degree of recall:

People tend to commensurate the personalities of the celebrity with the brand, thereby increasing the recall value. Golf champion Tiger Woods has endorsed American Express, Rolex, and Nike. Indian cricket team captain, M.S. Dhoni endorse Reebok, Aircel, Godrej and TVS.

5. Associative Benefit

A celebrity's preference for a brand gives out a persuasive message - because the celebrity is benefiting from the brand, the consumer will also benefit.

For e.g. Sachin Tendulkar's performance is positively correlated with the kind of Bat he uses and kind of footwear he sports as performance Adidas got its share of benefit by taking him as a brand endorser.

6. Mitigating a tarnished image:

Cadbury India wanted to restore the consumer's confidence in its chocolate brands following the high-pitch worms' controversy; where the company appointed Amitabh Bachchan for assuring it to people across the country that he is taking assurance of the product.

In 2004, even more controversial pesticide issue shook up Coca-Cola and which resulted in much negative press, the soft drink major put out high-profile damage control ad films featuring its best and most expensive celebrity.

Aamir Khan led the Coke fight back as an ingenious and fastidious person who finally got convinced of the product's purity.

7. Psychographic Connect:

Celebrities are loved and adored by their fans and advertisers use stars to capitalize on these feelings to sway the fans towards their brand.

8. Demographic Connect:

Different stars appeal differently to various demographic segments (age, gender, class, geography etc.).

9. Mass Appeal:

Some stars have a universal appeal and therefore prove to be a good bet to generate interest among the masses. For example, Amitabh Bachchan, Sharukh Khan.

10. Rejuvenating a stagnant brand:

With the objective of infusing fresh life into the stagnant chyawanprash category and staving off competition from various brands, Dabur India roped in Amitabh Bachchan.

Risks that can be identified with the use of Celebrity Endorsement

The celebrity approach has a few serious risks:

The reputation of the celebrity may derogate after he/she has endorsed the product: Pepsi Cola's suffered with three tarnished celebrities -

- Mike Tyson
- Madonna
- Michael Jackson.

Since the behaviour of the celebrities reflects on the brand, celebrity endorsers may at times become liabilities to the brands they endorse.

2. The vampire effect:

The terminology vampire effect pertains to the issue of a celebrity overshadowing the brand. If there is no congruency between the celebrity and the brand, then the audience will remember the celebrity and not the brand.

There are many examples where celebrities are being used almost indiscriminately for sheer notice ability-everyone enjoys watching Shahrukh khan dancing, but does this position the brand as the best dandruff shampoo? Or Ajay Jadeja endorsing toothpaste - does this really build brands? Cricket stars are used often for energy drinks or sports goods but their endorsing engine oil makes one.

3. Inconsistency in the professional popularity of the celebrity:

The celebrity may lose his or her popularity due to some lapse in professional performances.

For example, when Sachin Tendulkar endorser of Adidas went through a prolonged lean patch recently, the inevitable question that cropped up in corporate circles - is he actually worth?

The 2003 Cricket World Cup also threw up the Shane Warne incident, which caught Pepsi off guard. With the Australian cricketer testing positive for consuming banned substances and his subsequent withdrawal from the event, bang in the middle of the event, PepsiCo - the presenting sponsor of the World Cup 2003 - found itself on an uneasy wicket

4. Multi brand endorsements by the same celebrity would lead to overexposure:

The novelty of a celebrity endorsement gets diluted if the endorser does too many advertisements. This may be termed as commoditization of celebrities, who are willing to endorse anything for big bucks.

Example, MRF was among the early sponsors of Tendulkar with its logo emblazoned on his bat. But now Tendulkar endorses a myriad brands (Adidas, Boost, and Pepsi etc) and the novelty of the Tendulkar-MRF campaign has scaled down.

Example, Amitabh Bachchan has a lot of brands to endorse like: Dabur, Cadbury, Himalaya's Navratna, Raymonds, Satmola, Indian Government's Polio Scheme and many other which createsconfusion amongst the customers as to go by his words.

5. Celebrities endorsing one brand and using another (competitor):

Sainsbury's encountered a problem with Catherina Zeta Jones, whom the company used for its recipe advertisements, when she was caught shopping in Tesco.

A similar case happened with Britney Spears who endorsed one cola brand and was repeatedly caught drinking another brand of cola on tape.

6. Mismatch between the celebrity and the image of the brand:

Celebrities manifest a certain persona for the audience. It is of paramount importance that there is an egalitarian congruency between the persona of the celebrity and the image of the brand. Each celebrity portrays a broad range of meanings, involving a specific personality and lifestyle. Madonna, for example, is perceived as a tough, intense and modern women associated with the lower middle class. The personality of Pierce Brosnan is best characterized as the perfect gentlemen, whereas Jennifer Aniston has the image of the good girl from next door.

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A Study on Behavioral Finance Biases Affecting Investors Decision Making in the Crypto Currency Market

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INTRODUCTION

The cryptocurrency market, marked by its inherent volatility, presents a unique environment where investor decisions are influenced by various behavioral finance biases. This research aims to provide a thorough examination of key biases, including overconfidence, loss aversion, anchoring, herd mentality, and framing bias, to understand their impact on investor decision-making in the cryptocurrency market. The study focuses specifically on participants in Surat City, employing a structured questionnaire and utilizing a snowball sampling technique for primary data collection.

LITERATURE REVIEW

Almansour et al. (2023) studied behavioral finance factors influencing Gulf investors' cryptocurrency decisions. Data from UAE, Kuwait, Qatar, and KSA revealed herding and heuristics as key influences. Prospect bias impacts KSA and Qatar but not UAE and Kuwait, while UAE and Qatar investors are more cautious due to market factors. Familiarity bias varies across KSA and UAE.

Dwi et al. (2022) studied the impact of behavioral biases on risky investment decisions among Indonesian nascent investors. The research, based on data from 456 early investors, found that emotions significantly increased the illusion of control but did not affect overconfidence or decision-making. The illusion of control strongly influenced overconfidence (86.4%) and decision-making, highlighting a unique chain of biases in the decision-making process of nascent investors in

Tjondro et al. (2022) studied the factors influencing investment decisions of Indonesian cryptocurrency owners. The research, based on a survey of 309 respondents from major cities, identified intergroup bias and overborrowing as key impulsive factors in cryptocurrency investments. The study found that after November 2021, Indonesian crypto owners became more irrational during bearish periods, driven by social acceptance and overindebtedness. The results also highlighted that subjective norms discouraged investment during significant price declines. The findings contribute to dual-systems perspective and social contagion theories on investment behavior.

Vishrut & Fazalbhoy (2022) studied the impact of COVID-19 on investment education and behavior among Indian undergraduate students. The research, based on a sample of 142 students, examined factors such as social media, peer influence, and investment sources that influenced decisions in cryptocurrency and the stock market during the pandemic. The study found that these factors, particularly social media and peer influence, had a significant impact (about 77%) on educating young investors and shaping their investment behavior. The study used descriptive statistics and a random forest classifier for data analysis

RESEARCH GAP

Despite the growing importance of cryptocurrencies in the global financial landscape, there remains a noticeable gap in understanding the specific behavioral finance biases influencing investors in Surat City. Existing research often lacks a granular focus on the unique socio-economic and cultural context of individual cities, leaving room for exploration. This study seeks to address this gap by delving into the specific behavioral biases affecting investors in Surat City's cryptocurrency market.

PROBLEM STATEMENT

Cryptocurrency investors in Surat City are subject to various behavioral biases that can significantly impact their decision-making processes. Unraveling these biases is essential for designing targeted interventions and educational initiatives aimed at enhancing investor awareness and resilience in the face of market fluctuations. This research aims to identify, analyze, and understand the prevalence and impact of behavioral finance biases on the decision-making of cryptocurrency investors in Surat City.

RESEARCH OBJECTIVES

• To analyze the influence of behavioral finance biases, namely overconfidence bias, loss aversion bias, anchoring bias, herd mentality bias, and framing bias, on investor decision-making within the cryptocurrency market.

• To compare the impact of these biases across various demographic and investment experience groups.

RESEARCH DESIGN

Population: Cryptocurrency investors in Surat City.

Sampling Method: Snowball Sampling.

Sample Size: 124 participants.

DATA COLLECTION

Instrument: A structured questionnaire, designed to gather information on demographics, trading behaviors, and experiences related to overconfidence, loss aversion, anchoring, herd mentality, and framing bias.

Delivery Method: Surveys will be administered in-person and digitally, providing flexibility for participants.

Instruments and Tools for Analysis Descriptive analysis Correlation analysis Regression analysis Mann-Whitney analysis

Benefits of the Study

- Gain insights into investor behavior and cryptocurrency markets, enhancing financial literacy and creating career opportunities.

- Understand how biases influence financial decisions to guide better-informed personal choices.

- Build valuable professional connections through engagement with local investors, regulators, and experts.

- Empower individuals to manage their finances effectively with knowledge gained from the research.

Limitations of the Study

- Focus limited to five biases: overconfidence, loss aversion, anchoring, herd mentality, and framing bias.

- Exclusion of certain demographic details, such as income, which could enhance the study.

- Restricted to Surat City, limiting applicability to other regions.

- Data is not normally distributed; hence, non-parametric tests like Spearman correlation analysis and regression analysis are employed.

Scope of the Study

- Identify the target group of investors within Surat's cryptocurrency market.

- Focus on the chosen biases (overconfidence, loss aversion, anchoring, herd mentality, and framing) and their interactions in this context.

- Compare the impact of these biases across various demographic and investment experience groups.

DATA ANALYSIS

DEMOGRAPHIC ANALYSIS

GENDER

GENDER			
		Frequency	**Percent**
Valid	MALE	85	68.5
	FEMALE	39	31.5
	Total	124	100.0

OCCUPATION

OCCUPATION			
		Frequency	**Percent**
Valid	STUDENT	21	16.9
	EMPLOYED	68	54.8
	SELF-EMPLOYED	24	19.4
	UNEMPLOYED	11	8.9
	Total	124	100.0

Figure 2: Age Graph
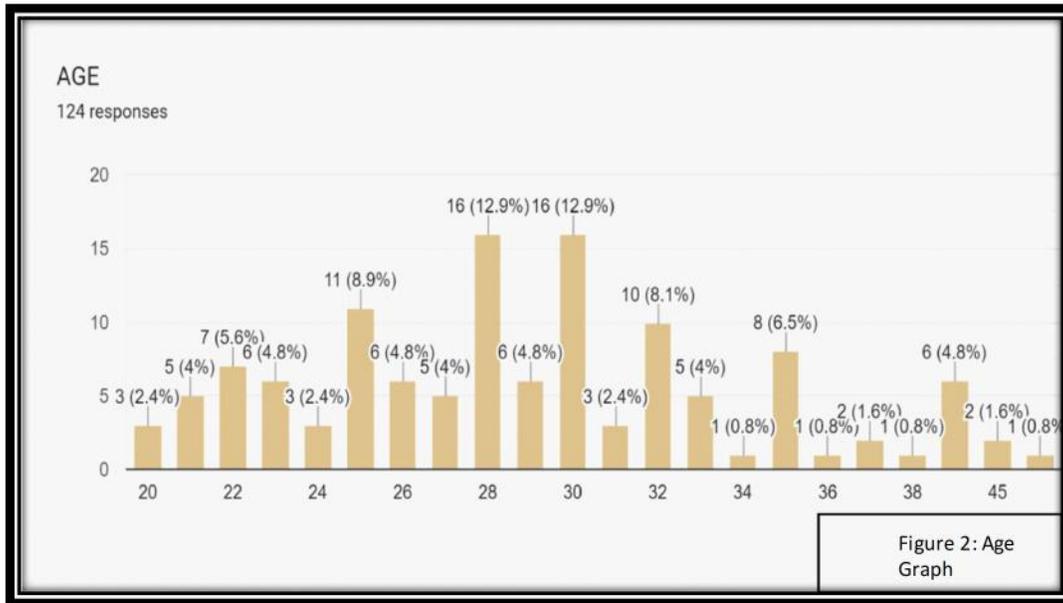
EDUCATION

EDUCATIONLEVEL		Frequency	Percent
Valid	HIGH SCHOOL	13	10.5
	BACHELOR DEGREE	52	41.9
	MASTER DEGREE	49	39.5
	PROFESSIONAL DEGREE	10	8.1
	Total	124	100.0

INVESTMENT EXPERIENCE

INVESTMENT EXPERIENCE IN CRYPTOCURRENCY		Frequency	Percent
Valid	0	10	8.1
	1	16	12.9
	2	15	12.1
	3	1	.8
	3	24	19.4
	4	15	12.1
	5	17	13.7
	6	12	9.7
	7	7	5.6
	8	4	3.2
	9	1	.8
	10	1	.8
	12	1	.8
	Total	124	100.0

NORMALITY TEST

Tests of Normality		
	Kolmogorov-Smirnov[a]	Shapiro-Wilk
	Sig.	Sig.
AGE	.003	.000
OVERCONFIDENCE BIAS	.000	.002
LOSS AVERSION BIAS	.000	.000
ANCHORING BIAS	.000	.031
HERD MENTALITY BIAS	.002	.003
FRAMING BIAS	.078	.003
GENDER	.000	.000
OCCUPATION	.000	.000
EDUCATION LEVEL	.000	.000
INVESTMENT EXPERIENCE IN CRYPTOCURRENCY	.000	.000
a. Lilliefors Significance Correction		

CORRELATION AND REGRESSION

Particulars	AGE	Experience
Overconfidence Bias		
Correlation	-0.175	-0.286
Regression coefficientsbeta value	-0.010 (0.323)	-0.065 (0.010)
Loss Aversion Bias		
Correlation	-0.244	-0.143
Regression coefficientsbeta value	-0.021 (0.004)	-0.028 (0.129)
Anchoring Bias		
Correlation	-0.158	-0.018
Regression coefficientsbeta value	-0.041 (0.08)	-0.007 (0.722)
Herd Mentality Bias		
Correlation	-0.169	0.067
Regression coefficientsbeta value	-0.022 (0.054)	0.016 (0.587)
Framing Bias		
Correlation	-0.152	-0.03
Regression coefficientsbeta value	-0.012 (0.174)	-0.010 (0.659)

Note: In regression coefficient row significant value i.e., P value has been given

Interpretations

Age and Behavioral Biases:

Overconfidence Bias:

Correlation: Weak negative correlation of -0.175, indicating that as age increases, overconfidence bias decreases slightly.

Regression Coefficient: 0.323, meaning every one-unit increase in age predicts a 0.323-unit increase in overconfidence bias.

Loss Aversion Bias:

Correlation: Weak negative correlation of -0.244, suggesting a slight decrease in loss aversion bias with increasing age.

Regression Coefficient: 0.004, indicating a 0.004-unit predicted increase in loss aversion bias for each one-unit increase in age.

Anchoring Bias:

Correlation: Weak negative correlation of -0.158, suggesting anchoring bias slightly decreases as age increases.

Regression Coefficient: 0.080, meaning each one-unit increase in age predicts a 0.080-unit increase in anchoring bias.

Herd Mentality Bias:

Correlation: Weak negative correlation of -0.169, indicating a slight decrease in herd mentality bias with increasing age.

Regression Coefficient: 0.054, implying a predicted 0.054-unit increase in herd mentality bias for every one-unit increase in age.

Framing Bias:

Correlation: Weak negative correlation of -0.152, suggesting framing bias decreases slightly as age increases.

Regression Coefficient: 0.174, meaning a one-unit increase in age predicts a 0.174-unit increase in framing bias.

Experience and Behavioral Biases:

Overconfidence Bias:

Correlation: Weak negative correlation of -0.286, suggesting overconfidence bias decreases slightly with increased experience.

Regression Coefficient: 0.010, indicating a predicted 0.010- unit increase in overconfidence bias for each one-unit increase in experience.

Loss Aversion Bias:

Correlation: Weak negative correlation of -0.143, indicating a slight decrease in loss aversion bias with greater experience.

Regression Coefficient: 0.129, meaning a one-unit increase in experience predicts a 0.129-unit increase in loss aversion bias.

Anchoring Bias:

Correlation: Very weak negative correlation of -0.018, indicating almost no relationship between experience and anchoring bias.

Regression Coefficient: 0.722, suggesting a predicted 0.722-unit increase in anchoring bias for every one-unit increase in experience.

Herd Mentality Bias:

Correlation: Very weak positive correlation of 0.067, indicating almost no relationship between experience and herd mentality bias.

Regression Coefficient: 0.587, meaning a one-unit increase in experience predicts a 0.587-unit increase in herd mentality bias.

Framing Bias:

Correlation: Very weak negative correlation of -0.03, suggesting almost no relationship between experience and framing bias.

Regression Coefficient: 0.659, indicating a 0.659-unit predicted increase in framing bias for each one-unit increase in experience.

Overall Observations:

Age and Experience: Both exhibit weak negative relationships with behavioral biases, suggesting that as individuals age or gain more experience, they tend to display slightly less biased decision-making in the cryptocurrency market.

Variance in Predictive Power: Age: Limited predictive power across all biases, with small regression coefficients indicating minimal variance explained.Experience: Predictive power varies widely across biases, with some biases showing minimal influence and others showing more significant effects.

FINDINGS

- The study identifies strong evidence of overconfidence bias in predicting market movements and herd mentality bias in reactions to crowd sentiment and panic selling. Moderate evidence of loss aversion and framing biases is observed, while anchoring bias shows mixed results regarding target price adjustments. These biases significantly influence investor decision-making in the cryptocurrency market.

- Comparisons across demographics reveal no significant differences in bias scores by education level but significant variations by occupation. Weak negative correlations suggest that age and investment experience slightly reduce biases like overconfidence and loss aversion.

- Cryptocurrency investors exhibit diverse demographics with a predominance of males and varying age, employment, education, and experience levels. Moderate levels of overconfidence, anchoring, and framing biases are observed, with variability in herd mentality scores.

- The findings highlight the need for targeted interventions and educational initiatives to mitigate behavioral biases, emphasizing the role of demographic and experiential factors in shaping investor behavior. This understanding can guide informed and rational investment strategies in the cryptocurrency market

CONCLUSION

- A significant portion of cryptocurrency investors exhibit overconfidence bias, as evidenced by their belief in superior market prediction, the transferability of stock market knowledge, and the influence of past successes on decision-making confidence.

- While some investors demonstrate willingness to reassess decisions and adjust strategies during market downturns, a notable percentage shows inflexibility and reluctance to adapt, indicating potential overconfidence.

- Investors display varying levels of behavioural biases, with herd mentality bias showing the highest average score, followed by anchoring bias, overconfidence bias, framing bias, and loss aversion bias.

- Both age and experience exhibit weak negative correlations with behavioural biases, suggesting that as individuals age or gain more experience, they tend to exhibit slightly less biased decision-making in the cryptocurrency market. However, the predictive power of experience varies across different biases.

- Educational attainment and occupation do not significantly influence overconfidence bias, loss aversion bias, anchoring bias, herd mentality bias, or framing bias

RECOMMENDATIONS

- **Investor Education:** Encourage investors to pursue education and training in behavioral finance principles to identify and mitigate cognitive biases.

- **Diversification & Risk Management:** Promote strategies that reduce overconfidence and herd mentality, emphasizing the importance of portfolio diversification.

- **Continuous Learning:** Foster a culture of ongoing learning and self-assessment to help investors adapt to market changes and avoid complacency.

- **Professional Guidance:** Advocate for investors to consult financial professionals for unbiased advice and assistance in navigating market complexities.

- **Regulatory Measures:** Implement transparency-enhancing regulations to safeguard investors from the adverse impacts of behavioral biases in the cryptocurrency market.

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Corporate Governance and Shareholder Activism in India- Theoretical Perspective

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Abstract

The origin of division of powers between Board of Directors and Shareholders has been subject of different judicial interpretations. Company law is a standard federal law. Hence, it envisages a clear division of powers between Shareholders and Board of Directors. The purpose of this paper is to analyse the methods and role envisaged for shareholders in corporate governance, given the little incentives and limited means available to them to perform any supervisory function over Board of Directors. The study reports, that it is difficult to tie down any definite role for investors in corporate governance. Corporate governance ought to shift from being a procedural requirement when it comes to addressing the issue of shareholder activism. An implication of the study is to put emphasis for enforcement of shareholder rights through civil proceedings. This can be achieved by introducing substantive provisions codifying duty of care, fiduciary role-playing requirements for Board of Directors.

Introduction

A company is itself a legal person, with an existence independent of that of its members. The company acts through its board of directors and the general meetings[1], which constitute the "organs of the company" and between them exercise all of its powers and functions[2]. The paper deals with the theoretical framework of shareholder participation in corporate democracy, and comments on the inefficiencies of the present structure, before going on to define the concept of shareholder activism and to describe its various types. Part III examines various regulatory reforms undertaken in India that enable shareholders to be more participative in corporate decision-making. These include measures such as e-voting, virtual shareholders' meetings, and voting policies for mutual funds. Part IV evaluates the likely impact of shareholder activism in India after considering the empirical evidence from other countries, and Part V concludes.

i. Literature Review

* **Jain, N.K., 'Company Law: Law and Practice', Deep & Deep Publications Pvt. Ltd., New Delhi, 2011**

This book gives the fundamental principles regarding the formation of the company and different kinds of parts related to it. It defines the shareholders' role in a separate chapter & gives vast knowledge regarding their roles in the company.

- **Varottil Umakanth, 'The Advent of Shareholder Activism in India', Journal on Governance, Vol. 1 No. 6, 2012.**

The article gives the proper understanding of the topic shareholder activism in India and provided the various issues related to it. It explains all the aspects regarding the shareholder activism and also analysis the current scenario related to the activism under Indian laws with regards to business and its structure

ii. Scope and Objective

Though the statement mentions "Shareholders Activism in India", the researcher specifies the subject area to understand the shareholders activism in India and also tries to closely analyse the importance & its impact on Indian companies.

iii. Research Problem

Whether the trend of shareholders activism in India provide the large and small companies, firms, etc., any new framework and how the shareholders are taking the initiatives to provide their hand to build Indian market at large?

iv. Research Methodology

Research Design

To conduct my research project we will use these two types of research design: Exploratory and Descriptive.

Sources of Data

I have used secondary sources of data for the purpose of my Research work which.

Shareholder Activism: The Concept

Shareholder activism is considered to be a set of "proactive efforts to change firm behaviour or governance rules."[3] It signifies the efforts on the part of investors to influence the behaviour of management in governing the company. Activist investors are "often viewed as investors who, dissatisfied with some aspect of a company's management or operations, try to bring about change within the company without a change in control."[4] If Passive investors are not satisfied with decisions taken by the management or controlling shareholders, they simply exit the company by selling their shares, a practice fancifully referred to as the "Wall Street walk."[5]

There are various shades of shareholder activism, although this paper primarily deals with three, referring first type as "participative" shareholder activism. In this type, shareholders assume greater responsibility for participating in shareholder meetings and exercising their corporate franchise. This way, greater participation by minority shareholders could have an impact on the outcome of corporate decisions. Even if the decisions themselves may not be different because

minority shareholders may only have infinitesimal shareholding in the company, their overwhelming response cannot be ignored altogether by managements and controlling shareholders.

The second type of activism is more upfront. "Interactive" shareholder activism involves the direct engagement by the shareholders with the management. Shareholders not only interact to obtain more information from the management, but also to convince the management of the strategy to be followed and changes to be effected to enhance value to shareholders.[6] The disadvantage of the interactive type of activism is that management and controlling shareholders are under no legal obligation to involve with shareholders, and can merely choose to ignore them. In such a case, the interactive efforts may not be productive.

An extended version of such interactive type brings us to the third category where shareholders adopt a combative strategy. This involves efforts to overthrow incumbent management through processes such as proxy fights or hostile takeovers that result in a change in control of the company.[7]

Regulatory Reforms towards Greater Shareholder Participation

Over the last decade, regulatory efforts in India have focused on inducing greater participation in shareholder decision-making.[8]

i. Voting Methods

In 2001, the facility of voting by postal ballot was introduced.[9] While the postal ballot facility represented a change in terms of providing a better option for retail shareholders to cast their corporate franchise, it failed to make a serious impact. The postal ballot facility may have removed some of the procedural obstacles to shareholder voting, but it was not intended to address the broader issues of collective action problems and shareholder apathy. Given the inadequate functioning of the postal ballot system, more recent regulatory developments have sought to utilize technological advancements to enhance shareholder participation and voting.[10] On this occasion, the initiative emanated from SEBI. In July 2012, SEBI amended the listing agreement requiring large companies to provide electronic voting (e-voting) facilities in respect of matters requiring postal ballot.[11] According to this new dispensation, the top 500 listed companies on the Bombay Stock Exchange and the National Stock Exchange are required to provide e-voting facility with effect from October 1, 2012. Two agencies have already been certified to provide e-voting platforms.[12]

ii. Shareholder Meetings

In order to enable the shareholders to exercise their corporate franchise in an informed manner, it is important that they are able to participate in meetings. Recognizing the limitations of physical shareholders' meetings, the Government of India has introduced the concept of electronic participation. Companies may now provide the option to shareholders to attend meetings

electronically, through audio-visual means, such that "all persons participating in that meeting, communicate concurrently with each other without an intermediary, and participate effectively in the meeting."[13] Moreover, companies may provide video conferencing connectivity during such meetings in at least five locations within India.[14] At the same time, responsibility is placed on the company and the chairman of the meeting to put in adequate safeguards to ensure the integrity of the meeting. Although these measures were initially intended to be mandatory for listed companies in the period subsequent to the financial year 2011-12, concerns were raised regarding the legal validity of electronic meetings in the context of the Companies Act, due to which such electronic meetings are intended to be optional for listed companies too.[15]

iii. Voting as Responsibility

Shareholding in a company is considered to be a bundle of rights.[16] One such right conferred is to participate in corporate decision-making through the exercise of voting power. In this jurisprudential framework, any kind of duties or accountability to exercise voting rights is antithetical to the rights or entitlement-based understanding of share ownership. Hence, shareholders cannot usually be obliged to exercise their voting rights in any manner, or at all. This legal understanding of share ownership does not assist greater shareholder participation in companies, the significance of which is shareholder passivity.

In 2010, SEBI issued a circular to mutual funds requiring them to "play an active role in ensuring better corporate governance of listed companies."[17] Adopting a "comply-or-explain" approach,[18] SEBI requires asset management companies of mutual funds to disclose on their websites and in annual reports their general policies and procedures regarding the exercise of votes on listed companies.[19]

By imposing compulsory disclosure responsibilities and thereby improving transparency, this requires mutual funds to take a more active and considered role while exercising their voting rights on companies. It may no longer be possible for mutual funds to either abstain from voting or to grant proxies in favour of managements or controlling shareholders without following a reasoned decision making process.

While SEBI's circular technically applies only to mutual funds, its broader message could well pave the way for greater participation by other types of institutional shareholders.

iv. Assessing the Reforms

The regulatory reforms discussed in this section have been fragmented in nature, but their common theme has been to increase shareholder participation in meetings and voting. This would strengthen the hands of minority shareholders, both of the retail and institutional varieties, by removing various procedural hurdles that have impeded their extensive participation in the past.

One significant area of concern continues to be the lack of adequate information available with shareholders in order to enable them to exercise their considered vote. While the Companies

Act does contain elaborate provisions as to the notice to be given to shareholders to convene meetings, both in terms of the time period and information to be provided,[20] the disclosure and transparency standards followed in practice continue to be below par.[21] While there has been a gradual increase in the amount and quality of information disseminated to shareholders to elicit their franchise, it is arguably inadequate. The lack of availability of quality information strikes at the heart of shareholder indifference in the exercise of voting rights. Intermediaries such as proxy advisors and governance analysts can bridge the informational disparity to some extent.[22]

Evaluating the Impact of Shareholder Activism

Considering the trends regarding shareholder activism that are emanating from India, and assessing the possibilities and limitations within the Indian context, it is necessary to evaluate the effectiveness of such activism as a measure of enhancing corporate governance, both generally as well as in the specific context of India.

i. Distilling the Evidence

The present study finds palpable anecdotal evidence that showed a larger role on the part of activist shareholders in India since 2011 than that witnessed in the past. This is due to the exertions of the corporate regulators to enhance shareholder participation in corporate decision-making through various standards such as e-voting, e-meetings and the imposition of a stewardship roles on institutional investors such as mutual funds. Apart from being nudged by the regulators, certain activist investors themselves have accepted along the mantle of influencing corporate governance in companies in which they have placed. The emergence of a strong set of informational intermediaries in the form of proxy advisories signals a new era in shareholder activism in India.[23]

The natural assumption is that any value created by activist shareholders is equally enjoyable by the other passive investors, which arises due to the overall enhancement of governance standards in the company.[24] But, that assumption is not necessarily valid in all circumstances. Activist investors may likely "pursue agendas not shared by and often in clash with those of passive investors."[25]

ii. Effect on Controlled Companies

While evaluating the impact of shareholder activism, regard must be had to the ownership structure of companies. Activism may have a different effect on companies with controlling shareholders as opposed to those without. On the other hand, where controlling shareholders are dominant, it is unlikely that efforts on the part of the regulators to promote shareholder voting or activist stances adopted by certain institutional shareholders will have the same effect as in companies with diffused shareholding.

In insider economies such as India, due to the influence of controlling shareholders, activist investors would not find it easy to alter the outcome of decisions made at shareholders' meetings. This may in turn reduce the incentives of activist investors to adopt stances that operate to act as

a check on management. As a corollary, controlling shareholders are less likely to be deterred by the actions of activist shareholders.

Conclusion

This paper traces the evolution of shareholder activism in India. Hitherto non-existent, the phenomenon has been ushered into Indian corporate governance within a span of the last two years. It has been facilitated through regulatory reforms that enable greater participation of shareholders in corporate decision-making. However, the corporate structure and legal system in India offer considerable resistance that prevents full utilization of the benefits of shareholder activism. The existence of controlling shareholders in most Indian companies cushions the impact of activist investors. The legal system is not conducive to shareholder litigation, which is a tool utilized by activist investors in other jurisdictions, often successfully. At an overall level, there is also some pessimism about the impact of shareholder activism on the long-term performance of companies and shareholder value.

Efforts may be undertaken on two fronts. First, there is a need for greater empirical research on the impact of shareholder activism in India, which would help better understand its desirability and effect in the Indian context. Second, more efforts must be taken to enhance the power of minority shareholders who are compelled to act in the shadow of controlling shareholders. These include measures such as cumulative voting for appointment of independent directors,[26] prohibition on controller shareholder voting in case of interested party transactions,[27] and the like.[28] If such an enabling regime were created, it would provide the necessary incentives to activist shareholders to bring about overall enhancement of corporate governance norms in the listed companies in which they have invested, and also generally raise governance standards within the country.

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A Study on Investment Management at the Surat District Cooperative Bank

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Abstract

The Surat District Cooperative Bank is one of the leading cooperative bank in the South Gujarat Region. First decade of 20th century was a very important era in the history of cooperation for entire country and Surat District as well. Many cooperative institutions were initiated during this period. A Descriptive study was adopted to achieve the objectives of the study and the study was conducted in The Surat District Co. Op. Bank Ltd., "Investment Management of Surat District Cooperative Bank". Based on the finding, logical conclusion is drawn and further, suitable suggestions & recommendations are brought out. The entire project report is presented in developed, logical & sequential form.

1. INTRODUCTION

The bank was decided as the best bank by NABARD and for the year 1995-96, the bank was granted for best execution grant by NABARD. Bank has consistently been getting Audit characterization under classification 'A' and has delivered the most noteworthy reasonable profit to its individuals under State Co. Operation. Act. The bank should get ready for modernization exercises under the climate of progression. To proceed with the present-day banking framework, the bank has acknowledged the Automation of banking work. At present 67 branches are modernized.

PRODUCTS & SERVICES PROVIDED BY THE SURAT DISTRICT CO. OP. BANK LTD.

1) Primary service

   Accepting Deposits

a) Fixed Deposits

Fixed deposits are kept within the bank for an extended period. A customer can deposit the money within the bank at a better rate with safe custody. Customers get a payment amount [Principal + Interest] at the maturity of the deposit. A fixed deposit gives the next charge per unit than a saving account.

b)   Current Account

Current Account is mainly conveying for businessman, firms, companies, public enterprise, etc. A customer can deposit and withdraw any amount at any time whenever they want. Current Accounts are conveying neither to earn interest nor for Savings but only for the benefits of the business.

c)   Saving Account

Saving Account is a safe and easy way to secure money. Customers can deposit or withdraw their money at any time. In return, the bank pays interest to the depositor. 3% Interest is given to the depositor by the Surat district co-operative bank ltd.

d)   Recurring Deposit account

A Recurring Deposit Account is conveying for investors who want to deposit fixed money every month, to get a lump sum after one to five years. This is one of the best investment options for low-income groups.

2)   Secondary service

Loans

The Surat District Co. Op. Bank Ltd. provide following different types of loan:

a) Non-Agriculture Individual Medium-Term Loan for Home Appliances

b) Individual Housing Loan

c) Vehicle Loan

d) Loan / Overdraft against Kisan Vikas Patra / National Savings Certificate

e) Cash CreditGeneral Insurance

The Surat District Co. Op. Bank Ltd. offer different type of general insurance policy:

1) Marine Insurance

2) Industrial Insurance

3) Motor Insurance

4) Fire Insurance

5) Liability Insurance

6) Miscellaneous Insurance

- Accident and Hospitalization Insurance

- Social Insurance

- Rural Insurance

- Travel Insurance

- Package Insurance

- Business Insurance

- Insurance Life

The following Offers are provided to the customer by the bank:

1) Whole Life

2) Endowment

3) Child Policy Single Premium

4) Pension

5) Term

6) Fixed Term Protection Plan

7) 5 Year Recurring Premium Investment Cum Protection Plan

2. RESEARCH METHODOLOGY

2.1 Problem Statement

The statement of the problem under study is to analyses the investment pattern of Surat District Cooperative Bank.

2.2 Research Objectives

From the above literature review, it may be seen that the studies in respect of Investment pattern with reference to Surat district cooperative banks were not made earlier. Hence an attempt has been made in this to study and analyses the investment pattern of the banking professionals with the following objectives:

1. To study the types of investment done by Surat District Cooperative Bank

2. To study investment strategies adopted by Surat District Cooperative Bank

2.3 Research Design

1. Descriptive research design

2. Exploratory research design

3. Causal research design

Descriptive research design' is used in this project for research. Descriptive research design answers What, Where, When and How question. Descriptive research design focus to describe the situation accurately.

Data Collection Methods

1. Primary data collection

2. Secondary data collection

In this research, the secondary data collection method is used. The secondary data is collected from:

- The Annual report of the Bank
- Case Study
- Another necessary theoretical requirement
- Websites & Magazines of the bank
- Bank Officers

The primary data is collected from: From Bank STL (accounts) department

Sampling Procedure: Quantitative Sampling Technique

Last five years of balance sheet has been taken as sample to study the investment management of The Surat District Co-operative Bank.

Description of Variables:

- Availability of Finance
- Government Policy
- Interest Rate
- Return on Investment
- Frequency of Return
- Liquidity
- Risk in Investment
- Safety in Investment
- Yield
- Maturity of Investment Analytical tools used
    - Information Gathering
    - Graphical Method

2.4 Limitations of Study

• Guidelines of Reserve Bank of India related to investment will keep on changing every year. The research of finding is only for specific period.

• The bank operation is confidential and because of that some information cannot be obtained.

• The sample size is limited to five financial years. Therefore, the detailed analysis gives different results compared to a lengthy period.

• Due to corona pandemic, there was hyper volatility in Indian economy, especially in financial sector.

3. DATA ANALYSIS AND INTERPRETATION

3.1 INVESTMENT WITH OTHER BANK   (Amt in Cr)

INVESTMENTS/ YEAR	2016-17	2017-18	2018-19	2019-20	2020-21
Investment in Government Securities	1212.20	1280.73	1229.58	1103.75	1309.73
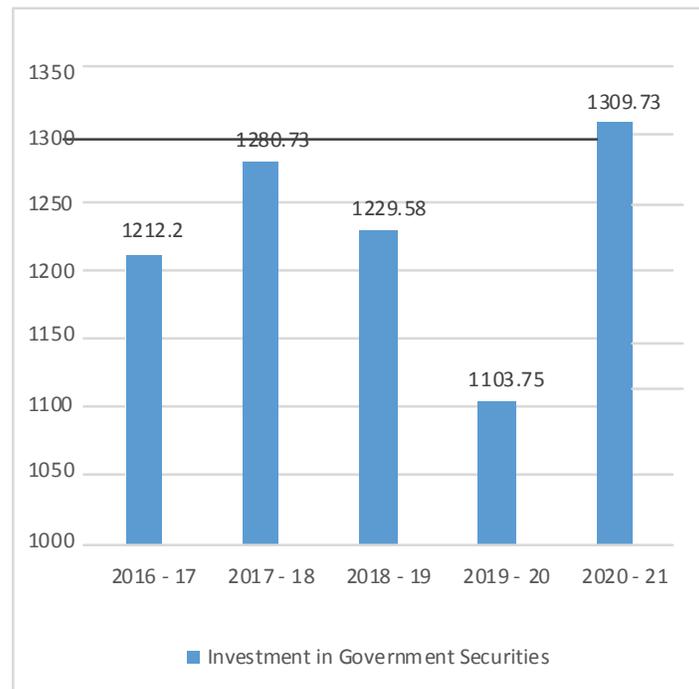
Investment in government sector is calculated for the purpose of maintaining the SLR of the bank. And if such investments can be bought and sold in the money market, profits can be made through transaction based on the condition of the money market.

From 2017 bank gradually increased investment in government sector year by year. In 2020 bank maintained SLR year about 18 to 19% due to low yield government sector but has more focused onMutual Fund investment.

Recently, in year 2021 bank increased investment in this segment by 18.66% which was amounted to 205.98 crores.

INVESTMENT/ YEAR	2016-17	2017-18	2018-19	2019-20	2020-21
Investment in Public-Sector Undertaking Bonds	139.25	137.61	122.81	114.78	144.93
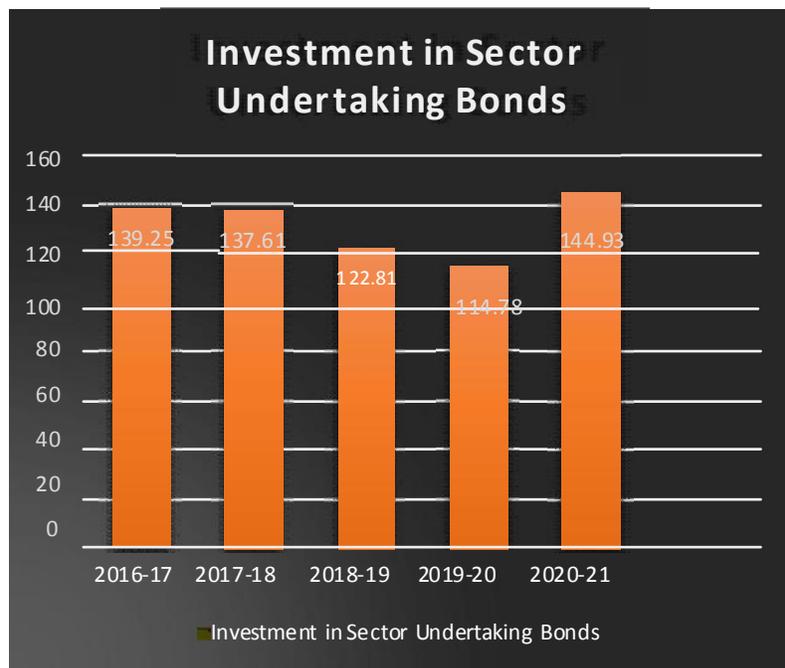
From, 2017 bank maintained average rate of investment in PSU bonds, gradually it increased in last five years by 5.68 crores.

In 2021, highest amount was invested in PSU bonds in last five years.

INVESTMENT/ YEAR	2016-17	2017-18	2018-19	2019-20	2020-21
Investment in Shares of Other Cooperative Bank	0.47	0.57	0.57	0.49	0.50

Investment in Shares

Bank is not permitted to invest in other banks shares so no new fresh investment in this segment can be done.

Bank retire their investment in shares gradually.

INVESTMENT/ YEAR	2016-17	2017-18	2018-19	2019-20	2020-21
Investment in Mutual Fund	267	359	379	391	430.5

Investment in Mutual Fund
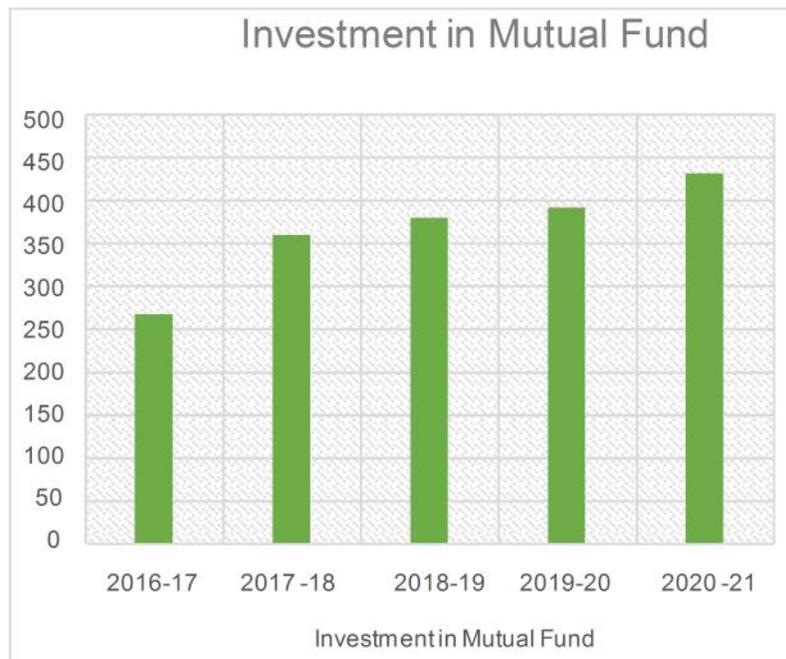
From 2017 bank increased investment in Mutual Fund due to high IRR/Yield. Handsome growth rate in Mutual Fund investment segment. It has grown by 61% from 2017.

It has shown a progressive trend.

3.2 FIXED DEPOSIT WITH OTHER BANK

INVESTMENT/YEAR	2016-17	2017-18	2018-19	2019-20	2020-21
Fixed Deposit in Apex Bank	_	125	100	50	450
Fixed Deposit in Notif. Bank	7.8	41.8	250	519.39	524.04
Cumm Dep. Notif. Bank	1709.15	948.49	835.54	1159.65	1454.49
Cumulative Deposit With Apex Bank	249.22	266.76	192.42	184.91	32.23
Cumulative Deposit With ACS Bank	37.66	40.45	43.99	45.15	31.21
Cumm Approved Bank	10.53	10.94	_	40.20	43.03
Total	2014.36	3451.44	5465.8	4019.3	4556.00
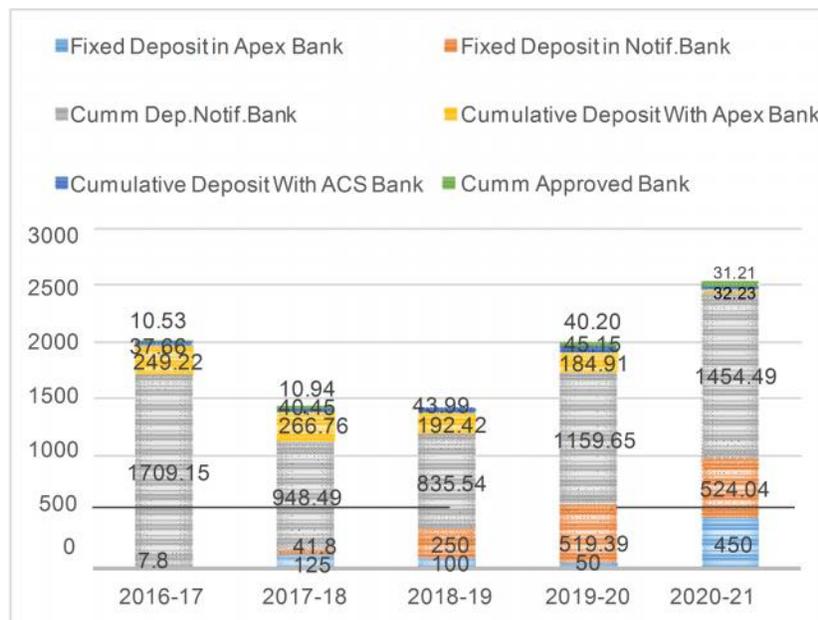
In last five years bank has added 2542 Crores of investment in bank deposit. Known percentage it has increased by 126% in last five years.

Bank gradually decreases investment in Apex (GSC) bank Fixed Deposit and tried to increased investment proportion higher in Notified Bank Fixed Deposit.

3.3 NON SLR INVESTMENT

Total of PSU Bonds and Mutual Fund

2016-17	2017-18	2018-19	2019-20	2020-21
406.25	496.61	501.81	505.78	575.43
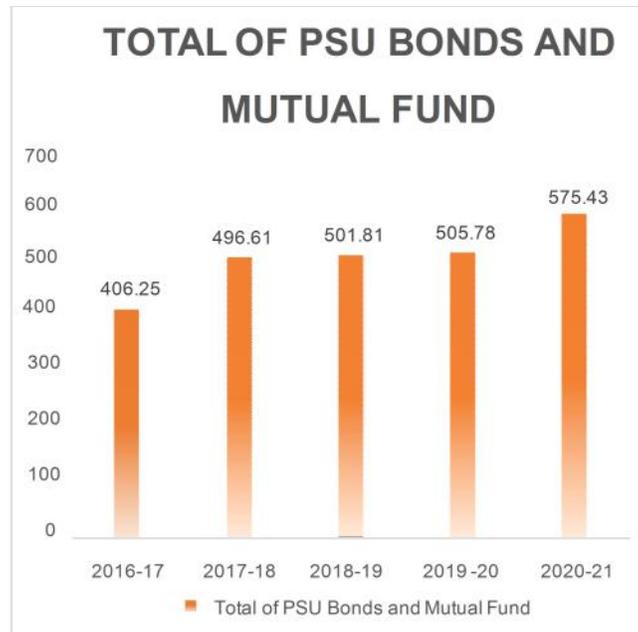
The total Non SLR investment includes the Public Sector Undertakings Bonds and Mutual Funds. The Non SLR investment also includes the shares but as per the restrictions imposed by the Reserve Bank of India in the Master Circular of investment:-

Fresh investment in shares of All India Financial Institutions will not be permitted for Cooperative Banks.

In the last five years bank has increased its investment in Non SLR segment by 42%.

3.4 Total Investment

Investment/Year	2016-17	2017-18	2018-19	2019-20	2020-21
Average Investment	3579	3464	2994	3246	3955
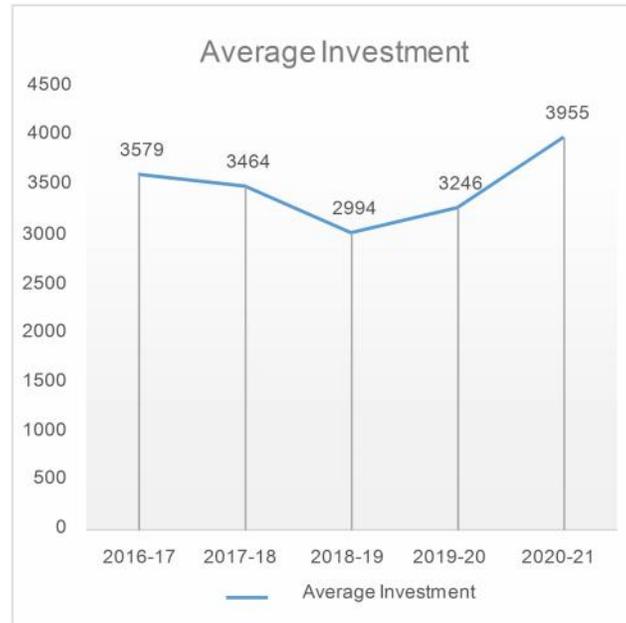
The average investment has decreased to 2994 Crores in the year 2018-2019 but again it has increased to 3955 Crores in the year 2020-2021.

4. Findings

- Investment in equity is a good option but as per section 19 of Banking Regulation Act 1949 stipulates that no cooperative bank should hold the shares.

- Bank shall not invest in Perpetual Debt Instrument because it's not permitted. Weighted average coupon rate 7.83% which has improved from last year's 7.47%.Bank maintained its Statuary Liquidity Ratio more than 18% to 20% every year.

- Average investment of bank is 3955 Crores which is 58% of banks total deposit. Bank rely more on investment rather than advances.

- Bank invest in other Notified bank and Apex bank bank's Fixed Deposit. It covers about 60 to 70% of total investment.

- Bank needs to control fund flow as per market volatility so bank can invest in higher rate opportunities.

- Bank has to manage also cash inflow-outflow so bank can turn its cash flow into fund for investment.

5. Conclusion and Managerial Implications

- Bank maintaining 12% of total investment in Treasury bills which need to be increased by at least 5% to 10%.

- Bank earn more return on its investment in mutual fund which is 8.68% in year 2021 so bank can increase its investment portion in mutual fund segment.

- Bank is committed to invest 10% of its total deposit in Non-SLR funds like PSU Bonds.

- Bank can increase its investment in PSU bonds rather than other banks Fixed Deposit so bank can earn 2% to 3% more than average investment rate.

- Bank fixes investment limit as per other bank's status like Small Finance Bank, Private Bank, Nationalized Bank, Apex Bank. Bank should have reduced its investment in Apex Bank FD.

- As per market average rate of return in investment is reducing so bank cut its advances rate to earn more and increases its profit.

- Better Cash Management plan should be implicated so bank can turn cash into fund available for investment.

- In order to earn a higher return, a proper investment plan should be made in co- ordination with cash management.

- Higher return on investment require a higher risk, the manager should focus more on risk taking and decision making strategy.

- Bank can earn a good return on investment in equity but as they are not permitted, it should focus more on other NON-SLR investment which has a good rate of return.

- As we have seen, bank is investing just 12% of total investment in T-Bills which need to be increased but has still not came in action.

- If cooperative banks/societies genuinely want to add value to the members of the society, they should not leave any stone unturned while evaluating investment opportunities.

- Provide optimum infrastructure to the investment department for better decision making so they can grab opportunity in time.

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A Review of Waste Management Behavior: Insights from PMT

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Abstract

Global waste generation poses significant environmental, economic, and social challenges, necessitating sustainable waste management solutions. This study explores waste management behaviors through the lens of Protection Motivation Theory (PMT), focusing on cognitive and affective drivers such as perceived threats, response efficacy, and self-efficacy. The integration of PMT with the 3R principle-Reduce, Reuse, Recycle-aims to propose a comprehensive theoretical model addressing waste management practices. A review of existing literature highlights a research gap in applying behavioral theories like PMT and VBN models to waste management, particularly in incorporating emotional factors and cost considerations. This study advocates for a multidimensional approach to designing interventions, blending cognitive, affective, and economic elements to enhance waste management behaviors.

Introduction

Global waste generation has reached alarming levels, posing severe environmental, economic, and social challenges. By 2050, global waste is projected to reach 3.4 billion tons annually. Traditional disposal methods like landfilling and incineration exacerbate environmental degradation, highlighting the need for sustainable waste management solutions.

The 3R principle-Reduce, Reuse, Recycle-is a cornerstone of sustainable waste management, aiming to minimize waste generation and optimize resource use. Despite its potential, the success of 3R initiatives depends on individuals' willingness to adopt these practices.

Understanding behavioral drivers and barriers is crucial for effective intervention design. Protection Motivation Theory (PMT) offers a comprehensive framework to analyze how individuals respond to environmental threats and evaluate their coping abilities. This paper aims to integrate PMT with the 3R principle to propose a theoretical model explaining waste management behaviors.

Waste is defined as any garbage or refuse, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities that most people are still unaware of. In 2025, the figure is expected to be almost double. Countries with high income tend to generate the highest amount of waste, follow by lower middle income, upper middle income, and lower income countries, respectively. (Chinda, Leewattana, & Leeamnuayjaroen, 2012)

Protection Motivation Theory (PMT)

PMT, developed by Rogers in 1975, explains individuals' motivation to protect themselves from perceived threats. According to PMT, an individual's motivation for adaptive behavior depends on the threat and coping appraisals. Threat appraisal includes threat vulnerability and severity assessment, while coping appraisal refers to self- efficacy, response efficacy, and response costs PMT has been applied extensively in health and safety contexts but is increasingly used to study environmental behaviors.(Miocevic & Milakovic, 2023) Threat severity refers to the seriousness of the fear that appeals to the audience, while threat vulnerability relates to an individual's reaction to a fear appeal.

Perceived Threat:

Perceived threat includes two dimensions: threat susceptibility and threat severity, which is individuals' subjective perception of the particular risk. Threat susceptibility is people's sense of vulnerability towards a particular threat, while threat severity refers to the individual's perceived seriousness of the threat. (Menard, Bott, & Crossler, 2017) Individuals who believe in environmental consequences will positively manage the waste. E-waste is a threat to human health and ecosystem if not disposed of properly. Actual behavior to recycle the mobile phones may not be seen because of the threat about information security although they might be willing to recycle the mobile phones for the protection of environment. (Zhang, Wu, & Rasheed, 2020)

Perceived Efficacy:

Perceived efficacy consists of two sub-constructs, namely-response efficacy and self-efficacy. Perceived self-efficacy focuses on the beliefs that an individual can perform the necessary courses of action to handle the potential situations, provided that the individual knows their capabilities and nature. Self-efficacy represents the individual's perceived knowledge and effectiveness of performing targeted behavior and is one component of perceived behavioral control. It is not self-evident that manipulations of collective efficacy should affect perceptions of self-efficacy. (Jugert, et al., 2016) Motivation influences response efficacy by shaping how strongly someone believes in the effectiveness of these actions. Highly motivated individuals are more likely to believe that waste reduction actions will indeed make a difference, thereby increasing their response efficacy. (Chengqin, et al., 2022) Individual's motivation to protect themselves from any threat can result in in perceived efficacy in dealing with the threat.

Perceived Vulnerability:

Vulnerability encompasses the perception of how likely an individual believes they are to experience negative consequences or harm as a result of a particular threat. The feeling of vulnerability to a threat can cause fear, which drives individuals' motivation to protect themselves. (Chen & Lu, 2021) The general belief was that food waste decomposes naturally, and as a result, it does not harm the environment or causes pollution. (Nunkoo, Bhadain, & Baboo, 2021)

Response Cost:

Response cost refers to the perceived effort, inconvenience, time, or resources required to adopt and maintain a waste management behavior. In waste management, response costs encompass a range of factors beyond just physical effort or time investment. They can include financial expenses associated with recycling programs or waste disposal fees, the inconvenience of sorting and separating recyclable materials, the lack of accessibility to recycling facilities, and even the social stigma or inconvenience associated with adopting sustainable practices in certain social contexts.(Menard, Bott, & Crossler, 2017) A high cost of performing preventative behaviors might hinder people from being involved in recommended behaviors. (Janmaimool, 2016)

Literature Review

Managers desiring to protect information systems must understand how to most effectively motivate users to engage in secure behaviors. Information security researchers have frequently studied individuals' performance of secure behaviors in response to threats. Protection motivation theory (PMT) has been used to explain individuals' propensity to engage in voluntary secure behaviors, but the adaptation of this theory has yielded inconsistent results. (MENARD, BOTT, & CROSSLER, 2017)

This study examines the impact of affective reaction and cognitive assessment on patrons' behavioral intention during COVID-19 in the context of restaurants using protection motivation theory (PMT). More precisely, this study highlights how hope and fear are influenced by protection motivation (i.e., perceived vulnerability, perceived severity, maladaptive reward, response efficacy, self-efficacy, and response cost); how protective motivation and behavioral intention are mediated by hope and fear; and (3) the variety of customer behavioral intentions that have surfaced during the COVID-19 pandemic (i.e., health-focused behavior, conscious consumption, and supporting local businesses and products). An online poll was used to collect 473 completed replies. The proposed relationships were tested using structural equation modeling (SEM). The study's suggested research model effectively described how people prioritize eating at nearby eateries, adopt hygienic practices, and practice mindful consumption in the face of COVID-19. The suggested model can be used to study how customers behave in the hotel sector, particularly during the COVID-19 pandemic. (Kim, Yang, Min, & White, 2022)

This article uses the protection motivation theory to study the impact of information security awareness on desktop security behavior. It contributes to the literature by examining the roles played by awareness, an important antecedent to the cognitive processes in the protection motivation theory. The findings indicate that security awareness significantly affects perceived severity, response efficacy, self-efficacy, and response cost. Constructs in the coping appraisal process (except response cost), in turn, significantly impact recommended security behavior.(Hanus & Wu, 2016)

This study explores the impact of perceived threats and response efficacy on adapting to smog episodes using the instrumental variables method to address endogeneity issues. Findings indicate that individuals are more likely to adopt adaptive behaviors when they perceive moderate to high threats combined with high response efficacy. This suggests that both threat perception and confidence in the effectiveness of actions play critical roles in influencing behavior. The study highlights the importance of designing interventions that enhance both awareness of environmental risks and belief in the efficacy of adaptive responses. These insights contribute to more reliable and robust strategies for air pollution adaptation.(Mehiriz & Gosselin, 2022)

Disposal of solid wastes is a stinging and widespread problem in both urban and rural areas in many developed and developing countries. Municipal solid waste (MSW) collection and disposal is one of the major problems of urban environment in most countries worldwide today. MSW management solutions must be financially sustainable, technically feasible, socially, legally acceptable and environmentally friendly. Solid waste management issue is the biggest challenge to the authorities of both small and large cities. (Abdel & Mansour, 2018)

Given the nature of human existence, we discover that people continuously generate trash, which leads to pollution. Nonetheless, people are working to prevent contamination and manage municipal solid trash in a consistent manner. Additionally, by minimizing their consumption and reusing them, humans want to preserve natural resources for future generationsand recycle as much of it as you can. Thus, sustainable development can be achieved globally in this framework. This essay examined the ways in which sustainable development can be attained through the use of the 3R concept (reduce, reuse, and recycle). Additionally, this study relies on a survey conducted in a Chinese university setting to assess and examine people's behavior and willingness to apply the 3R concept. (Samiha, 2013)

This study evaluates Delhi residents' waste management practices under the Swachh Bharat Abhiyan using a modified Value-Belief-Norm (VBN) model, incorporating cost as a key variable. A sample of 5250 citizens and government employees from three Delhi municipalities was surveyed using a validated sampling technique. Data were analyzed through Structural Equation Modeling (SEM) to assess the relationships between model constructs. The findings aim to enhance understanding of waste segregation behaviors and guide cost-effective municipal interventions. This research contributes to advancing the VBN framework by including an economic dimension. This study analyzes waste management behavior using a modified Value-Belief-Norm (VBN) model, revealing that while values, norms, and awareness influence behavior, cost limits it. It emphasizes addressing cost, targeting values for behavioral change, and educating residents on waste segregation. The research provides unique insights for policymakers under the Swachh Bharat Abhiyan (SBA).(Chawla, Soreng, & Kumar, 2024)

Research Gap

The reviewed literature highlights gaps in applying behavioral theories like PMT and VBN to waste management practices. While PMT is extensively used in areas like information security

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and health behaviors, its application in waste management, especially integrating emotional factors like hope and fear, remains underexplored. Additionally, the modified VBN model's inclusion of cost as a variable highlights its critical yet understudied role in waste management behavior. Most studies rely on self-reported data and specific geographic contexts, limiting generalizability. There is a need for broader studies that integrate both cognitive and affective factors with economic considerations to better predict and influence waste management behaviors.

Conclusion

The integration of the 3R principle-Reduce, Reuse, Recycle-with Protection Motivation Theory (PMT) offers a comprehensive framework for understanding and promoting sustainable waste management behaviors. This study demonstrates that behavioral factors, particularly those outlined in PMT, play a crucial role in influencing individuals' adoption of 3R practices. Threat appraisal constructs, such as perceived severity and vulnerability, highlight the importance of raising awareness about the environmental consequences of poor waste management. Meanwhile, coping appraisal constructs-especially self-efficacy and response efficacy-emerge as critical predictors of actual behavior, suggesting that individuals are more likely to engage in 3R practices when they believe these actions are effective and feel confident in their ability to perform them. Additionally, the negative impact of perceived costs underscores the need to address barriers, such as inconvenience or lack of resources, that hinder participation in 3R initiatives. By applying PMT to the context of waste management, this study not only extends the theoretical understanding of environmental behaviors but also provides practical insights for policymakers, educators, and organizations.

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A Study on Consumer Attitude Management Towards Organized and Unorganized Retail Sector in Rajkot City

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Abstract

This study examines consumer attitudes towards organized and unorganized retail sectors in Rajkot city, a dynamic urban center in Gujarat, India. The retail landscape in Rajkot reflects a dual structure, with modern organized retail formats coexisting alongside traditional unorganized retail outlets. The research explores consumer perceptions of product quality, shopping preferences, and the impact of shopping frequency on retail sector choices. A descriptive research design was employed, utilizing a structured questionnaire to collect data from 200 respondents. Statistical analyses, including paired samples t-tests and Chi-Square tests, revealed significant differences in consumer perceptions of product quality and a strong relationship between shopping frequency and retail preference.

Findings indicate that while consumers value the quality and variety offered by organized retail, unorganized retailers remain competitive due to their personalized service, pricing flexibility, and community ties. Suggestions include strategies for unorganized retailers to enhance customer service, product offerings, and pricing to sustain market presence. The study highlights the importance of adapting to evolving consumer preferences and offers localized insights for both organized and unorganized retailers. These findings contribute to the broader discourse on retail sector dynamics in medium-sized urban centers, with implications for retail strategy development in similar contexts.

Keywords: Retail sectors, organized retail, unorganized retail, consumer perception, shopping preferences, product quality, shopping frequency, Rajkot city, retail strategy, urban retail dynamics.

Introduction: An Overview

The retail sector in India is a dynamic and rapidly evolving industry, characterized by the coexistence of organized and unorganized retail formats. Organized retail, which includes supermarkets, hypermarkets, and branded stores, has grown significantly over the past decade, driven by urbanization, rising disposable incomes, and changing consumer preferences (Basu & Das, 2017). On the other hand, unorganized retail, comprising small, independent shops, local

markets, and street vendors, continues to dominate the retail landscape, especially in smaller cities and rural areas (Gupta & Tandon, 2018).

In cities like Rajkot, a medium-sized urban center in Gujarat, the retail environment reflects this duality. Consumers in Rajkot have access to both modern, organized retail outlets and traditional, unorganized retailers. This creates a unique shopping landscape where consumer attitudes and behaviors are shaped by a variety of factors, including product quality, pricing, convenience, and cultural preferences (Solomon et al., 2019). Understanding these consumer attitudes is crucial for both sectors as they strive to capture market share in a competitive environment.

The expansion of organized retail in cities like Rajkot has raised questions about its impact on the local economy and the viability of unorganized retailers. Some studies suggest that the growth of organized retail could lead to the decline of traditional retail businesses, potentially disrupting local economic stability (Singh & Singh, 2016). However, others argue that organized retail brings benefits such as job creation, improved supply chains, and enhanced consumer experiences (Rajagopal, 2015). This study aims to explore these dynamics by examining consumer preferences and perceptions in Rajkot, providing insights that could inform strategies for both organized and unorganized retailers.

The current research focuses on understanding how consumers in Rajkot perceive organized versus unorganized retail sectors, the factors influencing their shopping decisions, and the potential implications for the local retail landscape. By analyzing these aspects, the study seeks to contribute to the broader discourse on retail sector development in India, offering localized insights that could be applicable to similar urban contexts across the country.

Review of Literature

Studies on consumer behavior in retail have extensively explored the factors influencing shopping preferences, such as price, convenience, product variety, and brand availability. According to Solomon et al. (2019), consumer decision-making is highly influenced by perceived value, which is a critical determinant in choosing between organized and unorganized retail outlets. This research underscores the need to understand how these factors play out in different retail contexts, especially in emerging markets like Rajkot.

The contrast between organized and unorganized retail sectors has been a subject of considerable research. Basu and Das (2017) highlight that organized retail offers benefits such as standardized pricing, product quality assurance, and enhanced shopping experiences, which often attract urban consumers. However, Gupta and Tandon (2018) argue that unorganized retail still holds a significant place due to its personalized services and credit facilities, especially in semi-urban and rural areas. This study seeks to build on these findings by examining consumer perceptions in Rajkot, a city that bridges both urban and traditional retail practices.

The impact of organized retail on local economies and unorganized retailers has been debated, with researchers like Singh and Singh (2016) noting that the expansion of organized retail can lead to a decline in the traditional retail sector, potentially disrupting local economies. Conversely, Rajagopal (2015) suggests that organized retail can also stimulate economic growth by creating jobs and introducing efficiency in supply chains. This study will explore how these dynamics are perceived by consumers in Rajkot, contributing to the ongoing discourse.

Research by Kotler and Keller (2020) indicates that shopping frequency is a significant factor in determining consumer preferences for retail formats. Frequent shoppers may prefer organized retail for its convenience and variety, while occasional shoppers might favor unorganized retail for its proximity and personalized service. This study will test these theories within the specific context of Rajkot, providing localized insights into shopping behaviors.

There is a growing body of literature on how unorganized retailers can adapt to the challenges posed by organized retail. Kumar and Kar (2019) discuss strategies such as improving customer service, enhancing product offerings, and leveraging community ties to stay competitive. This research will extend these discussions by identifying practical strategies that unorganized retailers in Rajkot can employ to maintain their market presence.

Research Gap

The research gap lies in the limited exploration of consumer attitudes specifically within Rajkot city, particularly the comparative analysis between organized and unorganized retail sectors. Existing studies often overlook the impact of organized retail on the local economy and the challenges faced by unorganized retailers in medium-sized cities. Additionally, there is a lack of focused research on the specific factors influencing consumer preferences and behavior patterns in this context, as well as strategic insights for unorganized retailers to remain competitive.

Research Objectives

- To examine consumer perceptions of product quality between organized and unorganized retail sectors in Rajkot.

- To analyze the factors influencing consumer preference for organized versus unorganized retail sectors in Rajkot.

- To assess the impact of shopping frequency on consumer preferences for organized and unorganized retail sectors in Rajkot.

- To evaluate the perceived effects of organized retail on the local economy and unorganized retail sector in Rajkot.

- To identify strategies that unorganized retailers can adopt to compete with organized retail in Rajkot.

Hypotheses

Hypothesis 1:

Null Hypothesis (H_0): There is no significant difference in consumer perception of product quality between organized retail and unorganized retail sectors in Rajkot.

Alternative Hypothesis (H_1): There is a significant difference in consumer perception of product quality between organized retail and unorganized retail sectors in Rajkot.

Hypothesis 2:

Null Hypothesis (H_0): There is no significant relationship between the frequency of shopping (daily, weekly, monthly, occasionally) and the preference for organized or unorganized retail sectors in Rajkot.

Alternative Hypothesis (H_1): There is a significant relationship between the frequency of shopping (daily, weekly, monthly, occasionally) and the preference for organized or unorganized retail sectors in Rajkot.

Research Methodology

This study aims to understand consumer attitudes towards organized and unorganized retail sectors in Rajkot using a descriptive research design. A structured questionnaire with both closed and open-ended questions will be the primary tool for collecting data. The target population includes all consumers who shop at retail outlets in Rajkot, with a sample size of at least 200 respondents selected through convenience sampling. Data collection will involve both primary data from surveys (conducted face-to-face and online) and secondary data from existing literature and reports. Field researchers will gather responses in shopping areas, while online surveys will extend reach via email and social media.

Limitations of the Study

- Limited to Rajkot city, making findings less generalizable to other regions.

- Relies on a sample size of 200, which may not fully represent the diverse consumer population.

- Possibility of response bias and inaccuracies in self-reported data.

- Time constraints may limit the depth of analysis and capture of seasonal shopping behavior.

- External factors like economic conditions and policies may influence results beyond the study's control.

Hypotheses Testing

Hypothesis 1:

Null Hypothesis (H_0): There is no significant difference in consumer perception of product quality between organized retail and unorganized retail sectors in Rajkot.

Alternative Hypothesis (H_1): There is a significant difference in consumer perception of product quality between organized retail and unorganized retail sectors in Rajkot.

Paired Samples Statistics		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Which retail sector do you believe offers better value for money?	1.96	200	0.9607	0.0679
	How do you perceive the quality of products in organized retail compared to unorganized retail?	2.34	200	0.726	0.0513

Paired Samples Correlations		N	Correlation	Sig.
Pair 1	Which retail sector do you believe offers better value for money? & How do you perceive the quality of products in organized retail compared to unorganized retail?	200	0.207	0.003

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Which retail sector do you believe offers better value for money? & How do you perceive the quality of products in organized retail compared to unorganized retail?	-0.38	1.0777	0.0762	-0.5303	-0.2297	-4.987	199	0

The analysis shows that respondents generally perceive the quality of products in organized retail to be higher than the value they believe it offers, with mean scores of 2.340 and 1.960,

respectively. A weak but statistically significant correlation (0.207, p = 0.003) was found between these perceptions. The paired samples t-test revealed a mean difference of -0.3800 (t = -4.987, p = 0.000), indicating a significant difference in consumer perceptions of product quality between organized and unorganized retail sectors. Thus, we reject the null hypothesis and accept the alternative hypothesis, concluding that consumers perceive a significant difference in product quality between the two retail sectors in Rajkot.

The statistical evidence indicates that consumers perceive the quality of products in organized retail to be significantly different from that in unorganized retail, supporting the alternative hypothesis.

Hypothesis 2:

Null Hypothesis (H_0): There is no significant relationship between the frequency of shopping (daily, weekly, monthly, occasionally) and the preference for organized or unorganized retail sectors in Rajkot.

Alternative Hypothesis (H_1): There is a significant relationship between the frequency of shopping (daily, weekly, monthly, occasionally) and the preference for organized or unorganized retail sectors in Rajkot.

Chi-Square Tests			
	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	32.304[a]	6	0
Likelihood Ratio	38.115	6	0
Linear-by-Linear Association	1.541	1	0.214
N of Valid Cases	200		

The analysis included 200 valid cases with no missing data and used crosstabulation to examine the relationship between shopping frequency and retail preference. The Pearson Chi-Square test showed a value of 32.304 with 6 degrees of freedom and a p-value of 0.000, indicating a statistically significant relationship between how often people shop (daily, weekly, monthly, occasionally) and whether they prefer organized or unorganized retail sectors. Since the p-value is less than 0.05, we reject the null hypothesis and accept the alternative hypothesis, concluding that there is a significant relationship between shopping frequency and retail preference in Rajkot.

The statistical evidence from the Chi-Square test indicates that shopping frequency is significantly associated with retail sector preference, supporting the alternative hypothesis. This suggests that consumers' shopping habits influence their choice between organized and unorganized retail options.

Findings

• The respondents primarily belong to the age group of 46-55 years.

- Both genders are represented, with a slightly higher number of male respondents.

- Most respondents have a postgraduate educational qualification.

- The majority are employed, with varied monthly household incomes, predominantly in the higher income brackets.

- A significant number of respondents prefer to shop at both organized and unorganized retail sectors for their daily needs.

- Frequency of shopping varies, with a considerable portion shopping weekly or occasionally.

- Factors influencing shopping destination choices include product quality, price, variety, and availability of brands.

- Respondents are divided in their perception of which retail sector offers better value for money, with some favoring organized retail and others believing both sectors offer equal value.

- Opinions on whether government policies favor organized retail are mixed, with many respondents remaining neutral.

- There is also a neutral stance towards supporting the expansion of organized retail in Rajkot.

- Respondents suggest that unorganized retailers could compete more effectively by providing a wider variety of products, improving product quality, offering better prices, and enhancing customer service.

Suggestions

- Unorganized retailers should focus on improving customer service to differentiate themselves from organized retail sectors.

- Expanding the variety of products offered can help attract more customers to unorganized retail stores.

- To remain competitive, unorganized retailers should consider offering better prices or value deals to appeal to price-sensitive customers.

- Focusing on product quality can help unorganized retailers build a loyal customer base, even in the face of organized retail competition.

- Both organized and unorganized retailers need to stay adaptable to changing consumer preferences, particularly in terms of product availability and shopping experience.

Conclusion

The study reveals a complex consumer attitude towards organized and unorganized retail sectors in Rajkot. While organized retail is seen as offering benefits like quality and variety,

unorganized retailers have the opportunity to compete effectively by focusing on personalized service, pricing strategies, and product diversification. The neutral stance on government policies and expansion of organized retail suggests that consumers are open to both sectors, provided they meet their needs effectively. Retailers in both sectors should focus on enhancing their value proposition to attract and retain customers.

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A Study on Impact of Mobile Marketing on Youngsters in Surat City

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Abstract

In today's time the theme of mobile marketing have been highlighted a lot. It is one of the best features which is being used by everyone to compete each other in this competitive world. Talking from the promotion, marketing, sales and to increase profits, this new connective feature has helped a lot to achieve the desired results. This new features allows the easy access to the fingertips at ones connivance. In today's fast competitive modern world we can see the results in every sector and field where the marketing the mobile plays a very crucial role.

Introduction

Mobile marketing has revolutionized how youngsters engage with brands and consume content. With smartphones becoming an extension of their lives, targeted ads, influencer collaborations, and interactive campaigns have reshaped their purchasing decisions and brand loyalty. Mobile marketing is a comprehensive strategy that businesses employ to promote their products or services through mobile devices like smartphones and tablets. For your internship project, understanding the key components of mobile marketing is crucial. Mobile marketing also considers how you search for things on your phone. Businesses want to make sure their information and ads show up when you look for something using a search engine on your mobile device - this is called mobile search marketing. If you have specific apps on your phone that you love, businesses might create their own apps to connect with you directly. This way, they can share content, services, or special deals with you - this is mobile apps marketing.

Literature Review

- Vikas Kumar and Saurabh Mittal (2020)

Increased use of smartphone and other mobile devices means more frequent contact between the brands and consumers. Interactions happen on anytime, anywhere basis, going much beyond the boundaries of traditional customer connect. Starting with the traditional e-mail, to pay per click, search engine optimization, content writing, social media marketing, video and in-game advertisements, there are multiple channels to reach every segment of the audience as per their comfort. Mobile marketing campaigns have already acquired an important role in the overall

marketing strategy of companies. A number of mobile phone-based marketing channels are available to the marketers and have significantly proved their importance.

- Avantika Pandey, Dr. Kahkashan Khan (2019)

The paper explores various ways which shows that up to which extent mobile marketing has affected the youngsters in India. The use of mobile phones in youngsters has opened the door of opportunities for marketers to market their product easily using mobile phones. Youngsters feel attracted towards the mobile marketing. They are more conscious about knowing all the trends and technology and accepting them in their daily lives. This is due to the reason that they get to know about each product and services on their phones via SMS, emails, various apps, etc. These are trust, privacy, risk and relevance.

- Kadyamatim, A., Donga, G., Zindiye, S. and Chibonda, T. (2018)

"Consumer Acceptance of Mobile Marketing through Mobile Phones: A Case Study of South African University Students" finds that continuous growth in consumers' mobile phone acceptance has provided opportunities to the marketers to reach and serve customers through the mobile phones.

- Dr. M.A. Asoka Malkanthie (2018)

In an era of information and communication technology (ICT) becoming more and more dynamic day by day, the mobile device or the Smartphone has turned out to be an increasing business environment for Sri Lanka. Speaking of which the users of the mobile devices plays an important role in this scenario whereas the investment made on the mobile advertisement will show its returns based on how they will react upon it. Therefore, main objective of the study is to examine the factors that will affect customer's attitude towards mobile advertising in Sri Lanka by giving a special reference to Colombo district. The study, descriptive in nature, has been conducted based on primary data.

- Robayo Pinzon Oscar, Montoya Luz Alexandra (2017)

This paper covers a review of the definition of mobile marketing, summarizing their characteristics compared to traditional marketing channels. Next, different approaches and research findings related to the acceptance and attitudes towards the mobile marketing are explored, as well as some of the most relevant theoretical approaches in this area. One of the main areas of research in this field has focused on the acceptance of technology Associated with the consumption of services on the Internet.

- Dr. K. Girija (2016)

Mobile phone has been 'one of the most noticeable social changes to happen over the last ten years'. Certainly, use of mobile phones has risen rapidly with improvements in handheld technology and reception, and with convergence of video, data and audio services within the one

device. After high penetration of the internet, mobile broadband subscription rate also increased dramatically. So this study tries to know the awareness and perception of youngsters about the mobile marketing. This study has conducted in Treechange with 100 respondents. Those marketers who create a full mobile experience for their consumers with apps, optimized mobile sites mobile loyalty programs, employing targeting like location, allowing sales on mobile devices etc. are really experiencing the power of mobile along the purchase funnel.

Research Methodology:

Problem Statement: In recent years, the surge in mobile marketing strategies has become a pervasive force, significantly influencing the behavior and choices of the younger generation. The widespread adoption of smart phones has created a dynamic environment where marketing messages are seamlessly integrated into the daily lives of youngsters.

Objectives of the Study:

- Assess the psychological and behavioral responses of young individuals towards mobile marketing initiatives.

- Examine the influence of mobile marketing on youngsters purchasing decisions and brand loyalty.

- Analyze the impact of mobile on shaping the perceptions and attitudes of youngsters towards different product and services.

- Explore the role of social media platform in amplifying the impact of mobile marketing on the youngster's audience.

Research Design: In this study descriptive research design would be used to describe the impact of mobile marketing on youngsters.

Data Collection Technique: Well Structured Questionnaire was used.

Sampling Technique: Non Probability Sampling Technique was used.

Future Scope of the study: The future scope of the study on the impact of mobile marketing on youngsters holds promising opportunities. As technology continues to advance and consumer preferences evolve, ongoing research can explore emerging trends, innovative marketing strategies, and the long-term effects on youth behavior. Additionally, investigating the integration of new technologies, such as augmented reality or artificial intelligence, in mobile marketing aimed at youngsters could provide valuable insights. Continued research in this field will be essential for marketers, policymakers, and businesses to stay informed and adapt to the ever-changing landscape of mobile marketing and its influence on the younger demographic.

Limitation of the study: It was carried out in only Surat city due to certain restrictions.

Data Analysis & Interpretation:

The survey results show the following key findings:

- **Gender Distribution:** 36% male, 0.5% prefer not to say, and no other responses.

- **Age Group:** 13% are under 18, 64.5% are 18-25, 14% are 25-35, and 8.5% are over 35.

- **Occupation:** 58% are students, 23.5% own businesses, 7% are employed, 3% are not working, 7.5% are home workers, and 1% belong to other categories.

- **Frequency of Activity:** 39.5% engage multiple times a day, 26% once a day, 16.5% a few times a week, 13% rarely, and 5% never.

- **Emotional Response:** 30.5% feel excitement, 30% curiosity, 20% indifference, 9.5% doubt, and 10% irritation.

- **Likelihood of Action:** 24% are very likely, 24% somewhat likely, 34% neutral, 13% unlikely, and 5% very unlikely.

- **Behavioral Response:** 26% frequently, 22.5% occasionally, 21% sometimes, 19.5% rarely, and 11% never.

- **Engagement Frequency:** 29% always, 24.5% often, 21% sometimes, 11.5% rarely, and 14% never.

- **Influence:** 28% highly influential, 27% moderately, 20% somewhat, 13.5% slightly, and 11.5% not influential.

- **Factors of Impact:** 23% clear communication, 30% brand reputation, 21% personalization, 18% recommendations, and 8% transparency about data usage.

- **Opinion on Content:** 32.5% view it positively, 22% negatively, 26.5% neutral, 13% depend on the content, and 6% are unsure.

- **Agreement Level:** 25.5% strongly agree, 26.5% agree, 25.5% neutral, 14% disagree, and 8.5% strongly disagree.

- **Certainty Level:** 25% to a great deal, 26.5% somewhat, 24.5% not at all, 14.5% not much, and 9.5% unsure.

- **Trust Impact:** 33.5% always, 19.5% often, 28.5% sometimes, 11% rarely, and 7.5% never.

- **Trust Perception:** 27.5% increase trust, 21% decrease trust, 26% no impact, and 12.5% depend on the content.

- **Influence:** 25.5% of respondents are much more influential, 22.5% somewhat influential, 27.5% about the same, 16.5% less influential, and 8.5% are unsure.

- **Preferred Content:** 21.5% prefer videos, 29.5% interactive ads, 26.5% social media posts, 15% push notifications, and 7.5% sponsored content.

- **Sentiment:** 26% are very positive, 30.5% somewhat positive, 27.5% neutral, 8.5% somewhat negative, and 7.5% very negative.

Interpretation:

Secondary data, collected and analyzed by other sources, helps companies understand trends, customer behavior, market conditions, and competitors without needing to collect primary data. Here's how it can be applied in mobile marketing:

1. **Market Trends and Consumer Behavior:** Companies can analyze trends in mobile usage and consumer preferences to optimize websites or develop apps. If interactive ads are gaining traction, they may invest more in that format.

2. **Competitive Analysis:** By studying competitors' strategies and performance benchmarks, companies can identify gaps or opportunities and optimize their own mobile campaigns.

3. **Ad Performance and Content Effectiveness:** Secondary data reveals which ad formats perform best, helping companies refine their strategies for better engagement, such as shifting focus to video content if it shows higher user engagement.

4. **Demographic Insights:** Companies can segment their audience by analyzing demographic data, such as age, location, and interests, to tailor marketing efforts more effectively.

5. **Brand Perception and Sentiment:** Analyzing reviews and social media sentiment allows companies to adjust their mobile marketing to align with customer expectations and improve app performance.

6. **Effectiveness of Mobile Campaigns:** Secondary data from industry reports and app performance metrics helps companies evaluate campaign success, ROI, and areas for improvement.

Conclusion:

India-being a developing country has no paper access to technology and as a result there are still remote areas which have no proper basic amenities. On the other hand, in urban areas there are people with more than 1 mobile phone. As a result, mobile marketing can be useful for those products that are used by semi-urban and urban areas. There is a also no scope for mobile marketing in rural areas where the people are illiterate and people do not actually depend on electronic gadgets to make purchase decision. There is a need for the producers to ensure that the marketing techniques used are modern and at the same time it should cover the needs of consumers.

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A Study on Consumer Perception Towards Online Influencers/Food Bloggers Promoting Surat Restaurants

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Abstract

This study explored consumer attitudes, perceptions, and behaviors towards influencer marketing in Surat restaurant industry. Using a survey method with 100 respondents from Surat City, the research examined the factors driving customer engagement with influencer-promoted eateries. The findings revealed a gap between exposure to influencer content and actual consumer behavior, with peer recommendations and occasional engagement playing a significant role. A notable trend was the preference for short video formats, reflecting evolving content consumption habits. While the study underscores the importance of effective influencer marketing, it also acknowledges limitations such as sampling bias and reliance on self-reported data. Future research should consider longitudinal studies and qualitative methods to gain deeper insights into consumer attitudes and behaviors. Additionally, addressing ethical concerns and incorporating cross-cultural comparisons could further enrich the understanding of influencer marketing dynamics.

1. Introduction

In recent years, influencer marketing has emerged as a powerful tool in shaping consumer behavior and driving brand engagement across industries. Particularly in the restaurant sector, where customer experiences and preferences are deeply rooted in visual and social elements, influencers play a pivotal role in promoting eateries through engaging content. By leveraging their reach and credibility, influencers can attract and influence diverse audiences, often encouraging trial and repeat visits. Surat, a rapidly growing city known for its vibrant food culture, presents an ideal setting to examine the impact of influencer marketing in the restaurant industry. However, while the popularity of influencer-driven content continues to rise, there remains a lack of comprehensive understanding regarding its actual effectiveness in influencing consumer attitudes and behaviors. Do influencer promotions translate to measurable consumer actions, or are traditional factors, such as peer recommendations, still more significant in guiding choices? This study aims to bridge this knowledge gap by exploring consumer attitudes, perceptions, and behaviors toward influencer marketing in Surat restaurant industry. Using a survey methodology, it seeks to identify the characteristics that drive customer engagement with influencer-promoted

eateries and uncover emerging trends, such as the growing preference for short-form video content. The findings provide valuable insights into the interplay between influencer marketing and consumer decision-making while also addressing the limitations and ethical challenges inherent in this approach.

About Influencer Marketing

Influencer marketing is a social media marketing strategy where a brand pays an influencer to promote their products or services. Influencers are people or organizations who have a large following and are considered experts in their field. Influencer marketing (also known as influence marketing) is a form of social media marketing involving endorsements and product placement from influencers, people and organizations who have a purported expert level of knowledge or social influence in their field.

Advantages of Influencer Marketing

1. **Cost-Effectiveness:** Compared to traditional marketing campaigns, influencer marketing often delivers better ROI, especially for niche markets.

2. **Targeted Outreach:** Influencers cater to specific demographics, ensuring promotional efforts reach the desired audience.

3. **Content Creation:** Influencers produce engaging, high-quality content that brands can reuse for their marketing efforts.

4. **Boosts Brand Loyalty:** Continuous collaboration with influencers helps maintain consistent visibility and builds long-term relationships with consumers.

5. **Adaptability:** Influencer marketing works effectively across industries, from food and fashion to tech and travel.

Disadvantages of Influencer Marketing

1. **High Costs for Top Influencers:** Collaborating with high-profile influencers can be expensive, particularly for smaller businesses.

2. **Lack of Authenticity:** Over-promoting products may make influencers seem less genuine, reducing their impact.

3. **Difficulty in Measuring ROI:** It can be challenging to assess the direct impact of influencer campaigns on sales or brand growth.

4. **Risk of Negative Publicity:** If an influencer is involved in a controversy, it can harm the associated brand's reputation.

5. **Dependence on Trends:** Rapid changes in social media trends can make some influencer campaigns short-lived or irrelevant.

2. Review of Literature

Catarina, Susane, Alvaro Diaz (2022) In their study, Catarina, Susane, and Alvaro Diaz emphasize the paramount importance of word-of-mouth marketing in the advertising industry. They argue that, despite various challenges faced by traditional advertising methods, word-of-mouth remains a dominant force in influencing consumer behavior.

Alicia Kelso (January 2024) Alicia Kelso discusses Chipotle's successful partnership with TikTok influencers, which leveraged Gen Z's preference for TikTok as a primary search engine. This collaboration highlights the effectiveness of targeting younger audiences through platforms they frequently use, resulting in increased engagement and brand visibility.

Monika Peterson (2023) Monika Peterson explores the ethical considerations in digital food marketing, especially regarding influencer promotions on YouTube and TikTok. Peterson emphasizes the need for transparency and ethical practices to maintain consumer trust and ensure responsible marketing strategies in the digital age.

Eva Winze (2022) Eva Winzer highlights the significant impact of social media endorsements by influencers on young audiences. Winzer's research demonstrates that such endorsements can lead to higher return on investment (ROI) and greater brand engagement, showcasing the potential of influencer marketing to drive consumer interest and loyalty.

Belem Barbosa and Edar Anana (February 2022) Barbosa and Anana investigate how the credibility of Instagram influencers affects consumer purchase intentions. Their findings indicate that influencer credibility can have varying effects on different consumer segments, underscoring the importance of selecting the right influencers to target specific audiences effectively.

Anjali Chopra, Vrushali Avhad, and Sonali Jaju (2020) Chopra, Avhad, and Jaju reaffirm the enduring trust consumers place in recommendations from friends and family, even as marketing dynamics evolve. Their research underscores the powerful influence of personal recommendations and the need for marketers to incorporate trust-building elements into their strategies.

3. Research Methodology

3.1 Significant of study

This study is significant as it provides actionable insights for Surat's restaurant industry, offering a deeper understanding of how influencer marketing impacts consumer attitudes and behaviors. By identifying younger demographics (18-35) and professionals or self-employed individuals as the primary audience, it enables businesses to tailor their campaigns effectively. The preference for short-form videos and the emphasis on authentic, high-quality content highlight critical elements for creating engaging marketing strategies. Moreover, the study underscores the dual importance of personal recommendations and captivating content in attracting and retaining customers. These findings empower restaurant owners and marketers with data-driven strategies

for resource allocation and campaign design, ensuring alignment with consumer preferences. Academically, the study enriches the literature on influencer marketing within a niche context, laying a foundation for future research, particularly longitudinal and qualitative studies to assess long-term impacts. Furthermore, by fostering successful marketing campaigns, it contributes to the economic and cultural development of Surat's restaurant industry, strengthening consumer-brand relationships and driving growth.

3.2 Objectives

- To understand the impact of online influencers on consumer perceptions of restaurants.

- To identify the factors influencing consumer behavior towards restaurants promoted by influencers.

3.3 Research Design

This study employs a mixed-methods approach, utilizing Google survey forms together quantitative data on consumer attitudes and perceptions towards online influencers and food bloggers promoting Surat restaurants. The survey questionnaire includes questions designed to assess consumer preferences, behaviors, and trust levels regarding influencer-promoted establishments. Additionally, the research draws upon existing literature, blogs, and articles related to influencer marketing and consumer behavior to provide contextual insights and support findings. The survey instrument is structured to capture both closed-ended and open-ended responses, allowing for quantitative analysis of survey data and qualitative exploration of consumer sentiments and opinions.Closed-ended questions assess factors such as frequency of following influencers, trust in influencer recommendations, and likelihood of visiting restaurants promoted by influencers. Open-ended questions invite respondents to provide detailed feedback and insights into their experiences and perceptions. Their search design also incorporates a review of relevant literature, blogs, and articles to contextualize survey findings and provide additional insights into the broader landscape of influencer marketing and consumer behavior. By synthesizing data from both survey responses and existing literature, the study aims to offer a comprehensive understanding of consumer attitudes toward influencer-promoted restaurants in Surat. Overall, this research design combines quantitative survey data collection with qualitative analysis of existing literature to address research questions and provide meaningful insights into consumer perceptions and behaviors in the context of influencer marketing within Surat restaurant industry.

3.4 Data Collection Method

A structured questionnaire will be designed and distributed using Google Forms to collect primary data from respondents. The survey will include questions related to consumer attitudes and perceptions toward online influencers and food bloggers promoting Surat's restaurants. Participants will be asked to provide quantitative responses to closed-ended questions, as well

as qualitative insights through close-ended questions. The survey will be shared via social media platforms, email lists, and online for muster each adverse sample of Surat residents.

3.5 Sampling Plan

1. **Population:** The population fort this study consists of residents of Surat city, India.

2. **Sample Size:** A sample size of 100 respondents will be selected for the survey.

3. **Sampling Technique:** Convenience sampling will be employed to select participants for the survey. Respondents will be recruited through various online channels, including social media platforms, email lists, and online forums. Convenience sampling is chosen due to its accessibility and ease of implementation, allowing for a diverse sample of Surat residents to participate in the study.

4. **Sampling Criteria:** Participants must be residents of Surat city, aged 18 years orolder, and have access to the internet to complete the online survey form. No other specific criteria will be imposed to ensure inclusivity and representation from a broad range of demographic backgrounds.

5. **Data Collection:** The survey link will be shared through social media platforms such as Facebook, Twitter, and Instagram, as well as through email lists and online forums frequented by Surat residents. Participants will be encouraged to share the survey link with their networks to further expand the reach of the study.

3.6 Limitations of the study:

1. The use of convenience sampling may have introduced sampling bias, as participants self-selected to participate, leading to a non-representative sample of Surat residents and limiting the findings' generalizability.

2. The reliance on pie charts and basic descriptive statistics provided only a basic overview of the data, failing to capture nuanced relationships or deeper factors influencing consumer perceptions of influencer marketing.

3. External factors such as changes in social media trends or competing marketing strategies by restaurants in Surat could have confounded the results, making it difficult to draw definitive conclusions about the impact of influencer marketing.

4. The study's use of secondary sources like articles and blogs for contextual insights may have introduced variability in the quality and reliability of data, as these sources may not fully align with the study's specific objectives.

5. Response bias could have affected the results, as the attitudes and behaviours of survey respondents may differ from non-respondents, leading to an over representation of certain demographics or viewpoints.

3.7 Scope of Future Study

Future research in this domain could benefit from longitudinal investigations, tracking shifts in consumer perceptions and behaviors towards influencer marketing in Surat's restaurant industry over time. By conducting follow-up surveys at multiple intervals, researchers can discern any evolving trends and patterns in consumer preferences. Additionally, qualitative exploration through interviews or focus groups could offer deeper insights into the underlying motivations driving consumer engagement with influencer-promoted restaurants, enriching our understanding beyond quantitative survey data alone. Comparative analyses across different cities or regions in India could uncover regional variations in the effectiveness of influencer marketing strategies, shedding light on context-specific factors influencing consumer responses. Experimental studies could provide causal insights into the impact of specific influencer marketing interventions on consumer attitudes and behaviors, offering actionable recommendations for businesses.

Data Analysis and Interpretation

The data analysis for this study involved examining responses from the Google survey questionnaire, which included questions related to consumer preferences, perceptions, and the likelihood of following influencer and food blogger recommendations. Specifically, respondents were asked to indicate their level of trust in influencer recommendations, their likelihood of purchasing or making a reservation at a restaurant promoted by influencers, and any difficulties they encountered in trusting them. Additionally, participants were asked to rate their trust in influencers on a scale from 1 to 5.

Gender	Frequency	Percentage
Male	47	42.7
Female	63	57.3
TOTAL	**110**	**100%**

Interpretation
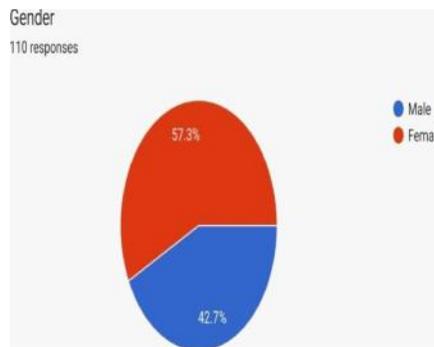
The gender distribution of respondents shows a slightly higher representation of females compared to males. 57.3% (63 respondents) of the sample are female, while 42.7% (47

respondents) are male. This suggests that influencer marketing in Surat's restaurant industry may have a greater appeal to women, or that female consumers are more likely to participate in surveys regarding influencer content. However, the sample remains relatively balanced, allowing for.a general understanding of both male and female perspectives on influencer marketing.

Age	Frequency	Percentage
18-25	46	41.8
26-35	42	38.2
36-45	20	18.2
46 &above	2	1.8
Total	**110**	**100**

Interpretation
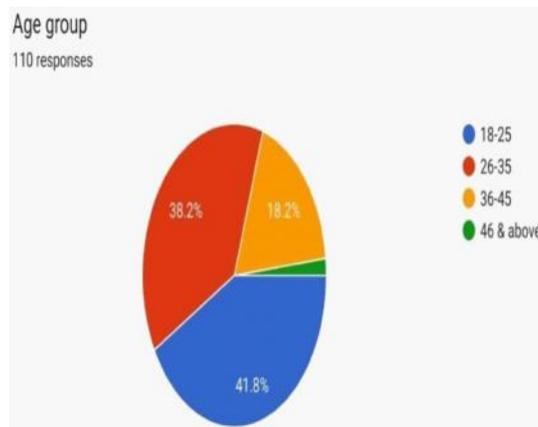
The age distribution of respondents highlights a significant skew towards younger demographics, with the majority falling within the 18-35 age range. The largest group, aged 18-25, accounts for 41.8% (46 respondents), suggesting that this demographic, typically more active on social media, is highly engaged with influencer-driven content. Similarly, the 26-35 age group represents 38.2% (42 respondents), indicating that this segment also interacts significantly with influencer marketing. In contrast, the 36-45 age group constitutes a smaller proportion, at 18.2% (20 respondents), reflecting relatively lower engagement. The 46 and above age group, with just 1.8% (2 respondents), shows minimal involvement, likely due to reduced social media usage or interest in influencer-promoted content. These findings underscore the prominence of younger audiences in the effectiveness of influencer marketing strategies, emphasizing the importance of tailoring campaigns to the preferences and behaviors of these key age groups.

Occupation	Frequency	Percentage
Students	30	27.3
Job Professionals	35	31.8
Self-employed	33	30
Homemaker	12	10.9
Total	**110**	**100**

Interpretation
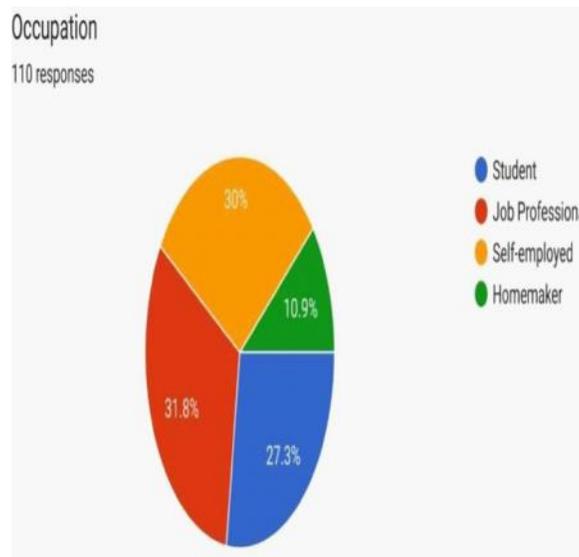
The occupation distribution of respondents reveals that the majority are either employed or engaged in self-employment, with significant representation from students as well. The largest group, job professionals, comprises 31.8% (35 respondents), followed closely by self-employed individuals, making up 30% (33 respondents). These two groups combined represent over 60% of the sample, suggesting a strong engagement with influencer marketing from individuals who are either employed or running their own businesses. Students, at 27.3% (30 respondents), form another important segment, indicating that younger, more social-media-savvy individuals are also actively participating in influencer-driven content. Lastly, homemakers, with 10.9% (12 respondents), make up the smallest group, reflecting lower engagement with influencer marketing. These findings suggest that influencer marketing is most impactful among job professionals, self-employed individuals, and students, while homemakers may represent a smaller, less engaged audience.

How Often People Follow Them

How Often People Follow Them	Frequency	Percentage
Rarely	33	29.5
Occasionally	45	40.2
Frequently	21	18.8
Always	12	11.6
TOTAL	**112**	**100**

Interpretation
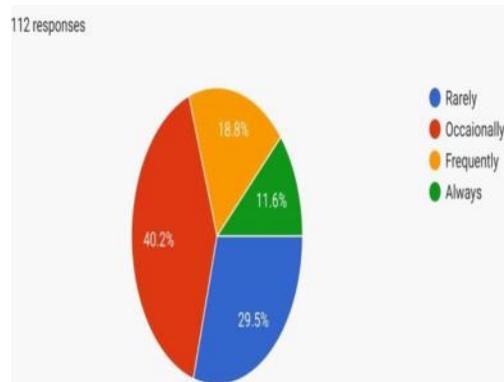
The frequency with which respondents follow influencers indicates varying levels of engagement with influencer content. The largest group, occasionally, represents 40.2% (45 respondents), suggesting that most individuals interact with influencer content from time to time rather than consistently. Rarely following influencers is reported by 29.5% (33 respondents), indicating a more passive engagement. Frequently following influencers is noted by 18.8% (21 respondents), showing that a smaller segment of the population actively engages with influencer content regularly. The always category is the smallest, with 11.6% (12 respondents), reflecting a dedicated but relatively limited group of individuals who consistently follow influencers. These findings highlight that while influencer marketing has reach, a significant portion of the audience engages with influencer content only occasionally or rarely.

Reason for Following Influencers

Reason For following	Frequency	Percentage
Quality of Content	31	27.7%
Recommendation from friends	42	37.5%
A variety of restaurants offered	24	21.4%
All of the Above	2	13.4%
TOTAL	**112**	**100**

Interpretation

112 responses

- Quality of Content
- Recommendations from friends
- Variety of restaurants featured
- All of the above
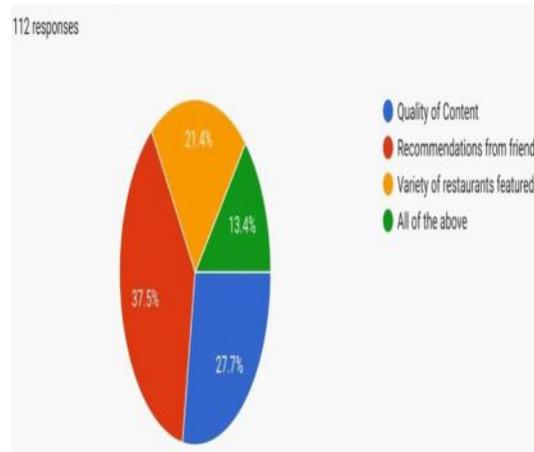
The reasons for following influencers reveal different factors driving consumer engagement with influencer content. The largest group, recommendation from friends, makes up 37.5% (42 respondents), suggesting that personal endorsements play a significant role in motivating individuals to follow influencers. Quality of content is another key factor, cited by 27.7% (31 respondents), indicating that well-crafted, engaging content is an important reason for following influencers. Additionally, 21.4% (24 respondents) are drawn to influencers due to the variety of restaurants they feature, highlighting a preference for diverse dining options. A smaller group, 13.4% (2 respondents), selected "All of the Above", suggesting that multiple factors combined influence their decision to follow influencers. These findings suggest that peer recommendations and high-quality content are the most influential factors in attracting followers, with variety in restaurant offerings also being an important consideration.

How likely are you to visit a local restaurant after seeing it promoted by an influencer/ blogger?

How Likely Will they visit	Frequency	Percentage
Very likely	27	24.1
likely	33	29.5
Neutral	28	25
Unlikely	20	17.9
Very unlikely	4	3.5
TOTAL	**112**	**100**

Interpretation

112 responses

- Very Likely
- Likely
- Neutral
- Unlikely
- Very Unlikely
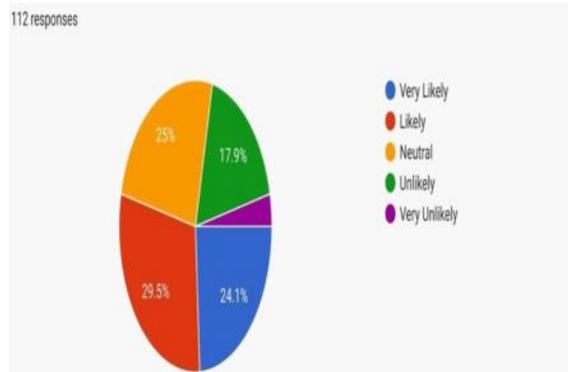
The likelihood of respondents visiting a restaurant based on influencer marketing shows a generally positive response, though with some variation. The largest group, likely, represents 29.5% (33 respondents), indicating that a significant portion of the audience is open to visiting influencer-promoted restaurants. Neutral respondents make up 25% (28 respondents), showing indifference or uncertainty about whether influencer marketing will influence their decision to visit. A good portion of respondents, 24.1% (27 respondents), said they are very likely to visit, reflecting a strong inclination to try out restaurants based on influencer promotions. On the other hand, 17.9% (20 respondents) are unlikely to visit, and a small group, 3.5% (4 respondents), are very unlikely to be swayed by influencer marketing. These findings suggest that influencer marketing has a positive influence on a substantial segment of the population, but there is still a considerable portion that remains neutral or resistant to the idea of visiting based on influencer endorsements.

What Content Type Do You Find Most Engaging?

Preferable Content	Frequency	Percentage
Photos	23	20.5
Long-Form videos	25	22.3
Short form videos	47	42
Text reviews	17	15.2
Total	**112**	**100**

Interpretation
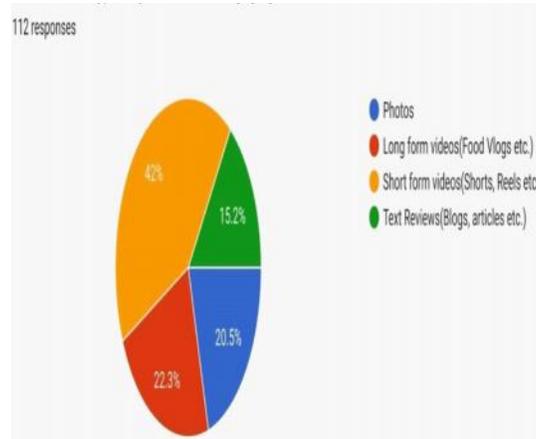
The preference for content type reveals a clear trend toward short-form video content. The majority of respondents, 42% (47 respondents), prefer short-form videos, highlighting a strong preference for quick, engaging, and easily consumable content. Long-form videos are favored by 22.3% (25 respondents), suggesting that a significant portion of the audience is willing to engage with more detailed content. Photos follow with 20.5% (23 respondents), indicating that visual content still holds appeal but is less engaging than videos. Text reviews are the least preferred, with only 15.2% (17 respondents) choosing them, which reflects a decreasing interest in written content in comparison to visual formats. These findings suggest that influencer marketing efforts in Surat's restaurant industry should prioritize short-form video content to effectively capture consumer attention and engagement.

How Important is Authenticity in their Content?

Importance of Authenticity	Frequency	Percentage
Very important	30	26.8
Important	26	23.2
Neutral	40	35.7
Not important	11	9.8
Not at all important	5	4.5
TOTAL	**112**	**100**

Interpretation

The importance of authenticity in influencer marketing shows that a large portion of respondents' value genuine content. 35.7% (40 respondents) indicated a neutral stance, meaning they were indifferent about the authenticity of influencer promotions. However, a significant number of respondents consider authenticity to be important, with 26.8% (30 respondents) rating it as

very important and 23.2% (26 respondents) viewing it as important. This suggests that a majority of respondents place some level of importance on authenticity in influencer marketing. On the other hand, 9.8% (11 respondents) find it not important, and a small group, 4.5% (5 respondents), believe it is not at all important. These results emphasize that while most respondents value authentic content, there is a segment that may not prioritize it as highly, indicating varying expectations of influencer transparency and credibility.

Have You Visited a Restaurant or Made a Reservation Bases on their Recommendation?

Followed their Recommendations	Frequency	Percentage
Yes	67	59.8
No	45	40.2
TOTAL	**112**	**100**

Interpretation
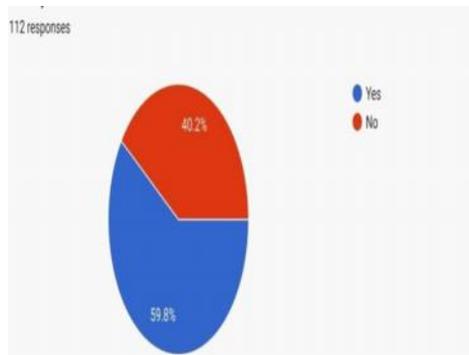
The responses to whether participants have followed an influencer's recommendation reveal a positive influence of influencer marketing. A majority of respondents, 59.8% (67 respondents), reported that they have followed an influencer's recommendation, indicating that influencer marketing has a noticeable impact on consumer decisions. In contrast, 40.2% (45 respondents) stated that they have not followed an influencer's recommendation, suggesting that while influencer marketing is effective for many, there is still a significant portion of the audience that remains unaffected by such endorsements. This highlights the varying effectiveness of influencer marketing across different consumers.

Conclusion

This study provides valuable insights into consumer attitudes and behaviours towards influencer marketing in Surat's restaurant industry. The findings suggest that influencer marketing is most effective among younger age groups, particularly those aged 18-35, and professionals or

self-employed individuals. These demographics are more likely to engage with influencer content and follow influencer recommendations. Furthermore, the preference for short-form videos, as well as the importance placed on the quality and authenticity of the content, highlights the need for businesses to tailor their marketing strategies to meet these trends.

While a significant portion of respondents expressed a willingness to follow influencer recommendations, there remains a segment that is indifferent or less likely to be influenced by such content. The role of personal recommendations, along with engaging content, plays a crucial role in attracting and retaining consumers.

However, the study also acknowledges limitations, such as sampling bias, reliance on self-reported data, and external factors that may influence consumer behavior. These factors suggest that further research, particularly longitudinal and qualitative studies, would be beneficial to deepen the understanding of consumer behavior and to assess the long-term effectiveness of influencer marketing strategies in the restaurant industry.

Overall, influencer marketing holds considerable potential for shaping consumer perceptions and driving engagement in Surat's restaurant industry, with the most successful campaigns being those that align with the preferences and values of the target audience.

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A Study on "Impacts of Stress Management on Job Deliverables and Stress Management Practices Amongst Professors and Secondary School Teachers in Surat City"

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Abstract

The research is based on the topic "IMPACT OF STRESS ON JOB DELIVERABLES & STRESS MANAGEMENT PRACTICES AMONGST PROFESSORS AND SECONDARY SCHOOL TEACHERS IN SURAT CITY." The research revolves around the internal and external factors which influence the above topic and also around collection of data related to the above topic. I have chosen this topic because I couldn't found any research survey which is done particularly of professors and secondary school teachers in Surat City. This research gives an idea about the Stress Management practices having influence on the professors and secondary school teachers. With the help of this study we can find out that what are the practices which professors and secondary school teachers can use to reduce the stress. For finding this out the result, the researcher used descriptive research with 100 respondents with the help of questionnaire via Google Forms, for the collection of Primary Data from the respondents chosen for the study. After the research has completed the data is analyzed and interpreted by the researcher by showing different charts of the collected data to reach the research objective and lastly the researcher have stated recommendations/suggestions and conclusion made during the study of whole project work.

Keywords: Stress, Professors & Secondary School Teachers, Stress Management Practices, Causes of Stress & its Effects

Introduction

"STRESS: The inability to tell the difference between what is happening and what you think is happening". - Victor Davich

In the modern world and concomitant life style, we say, people of all age groups are affected by stress and its dreaded consequences. Stress is dangerous since it interferes with the person's well being, Stressors can be physical and mentally, inside or outside generated. They can be actions, situations, and people or demands, the individual perceives to be the source of stress.

The recognized causes of job stress are numerous, and these include work practice, pressure, management techniques and work environment. These pressures may be on account of external or internal factors. It occurs whenever the body has to perform responsibilities that are beyond its range and scope and it results in harm and is damaging to individuals, families, and to society at large.

Stress can weaken family and social relationships and eventually burn one out, taking a toll on health. Therefore, organizations need to recognize stress as a problem and take necessary steps to act upon it. Stress can cause poor work performance and lower employee morale. These factors, in turn, increase employee turnover rate and lesson quality of life.

Literature Review

1. Gold Coast (Vol 35, 8, 2010 Dec)

This review outlines various interventions that promote psychological care and treatment. As significant numbers of student teachers may be psychologically distressed, could benefit student-teachers in their real- world practicum experiences universities could consider the potential of developing preventative self-help and well-being programs for future student teachers' wellbeing.

2. Shi Wei, Zhang Shujuanb, Hu Qiboc (Published: 2011)

This paper uses the foreign classical model of work stress to solve the problem of stress relief of young teachers in college. Meanwhile the model isimproved. The paper proposes a conceptual model on teacher resilience andstress, and explains function mechanism and significance. However, it still needs to be tested and analyzed by practical data to get more specific conclusion.

3. Charikleia Stefanaki, Flora Bacopoulou1, Sarantis Livadas, Anna Kandaraki, Athanasios Karachalios, George P. Chrousos, and Evanthia Diamanti-Kandarakis (Published: 2014)

We conducted a randomized controlled trial to evaluate the effect of a mindfulness stress management program on stress, anxiety and depression in women with PCOS. Mindfulness stress management techniques could be used as an adjunct method to conventionaltreatment for women with polycysticovary syndrome.

4. Stevie-Jae Hepburn and Mary McMahon (Published: Vol 42, 9,2017 Sept)

The findings of the current study indicate that the teachers participating in a five-week pranayama meditation (yoga breathing) course reported a decrease in perceived stress and felt more in control of their emotions. The benefits permeated into both their professional and personal lives influencing their approach to their work, engagement with students and their exercise or relaxation routine.

5. Tao Yu, Jiayuan Li, Ledong He, Xiafu Pan, (Published:2022 Sept)

The data presented in current study suggested that college teachers' work stress may impact their emotional outcomes. Resilience played a mediating role in the relationship between college teachers' work stress and emotional exhaustion. Furthermore, the mediating effect was moderated by their stress mindset. College teachers who viewed stress as debilitating had more resilience, which could help them experience more positive emotional outcomes.

Objectives of the Study:

The study has been carried out with the following objectives:

1. To identify the causes of Stress among professors and secondary school teachers in Surat City.

2. To study the Stress Management practices amongst professors and secondary school teachers in Surat City.

3. To access the effects of Stress Management practices amongst professors and secondary school teachers in Surat City.

Scope of the Study:

Stress is a common phenomenon and is present in every organization irrespective of their nature and size. The study is to ensure that in every institution Stress Management Practices should be followed or carried out properly so that it can help to reduce the stress of their faculties, so that they can balance their personal and professional life properly.

Research Methodology

1. Research Design:-

Research design are of 3 types namely Exploratory, Descriptive and Experimental. In the present study, Descriptive research design has been adopted for research as because it includes surveys, interviews, case studies, and observations. It aims to gather an in-depth understanding of a phenomenon and answers what/when/where. It also describes data and characteristics about the population and phenomenon.

2. Sources of Data Collection Method:-

2.1 Primary Data:-

Primary data are those data which are collected at the first hand either by the researcher or by someone else especially for the study. In this study primary data is used and it is collected by researcher from Teachers of Surat City.

3. Sample Size:-

It refers to the question that "How many people should be surveyed?"

100 respondents have been taken to review from Surat City to acquire the desire results or research.

4. Limitations of the Study:-

The present study is limited to professors and secondary school teachers in the Surat City in Gujarat State only.

Data Analysis

Educational Qualification:-

Table 1. Educational Qualification

Educational Qualification	Frequency	Percentage
PhD	22	22%
M.Phil	7	7%
Post Graduate	59	59%
Other	12	12%
Total	100	100%

Interpretation:-

From the above table Researcher can say that 22% respondents are having PhD Degree, 7% respondents are having M.Phil. Degree, 59% respondents are having Post Graduate Degree and 12% respondents are having Other Degree out of total 100 respondents.

Teaching working hours in Weeks:-

Table 2. Teaching working hours in Weeks

Teaching working Hours in Weeks	Frequency	Percentage
30-40 Hours	59	59%
40-50 Hours	29	29%
50-60 Hours	9	9%
More than 60 Hours	3	3%
Total	100	100%

Interpretation:

From the above table Researcher can say that 59% respondents are having Teaching working Hours in weeks between 30-40 Hours, 29% respondents are having Teaching working Hours in weeks between 40-50 Hours, 9% respondents are having Teaching working Hours in weeks

between 50-60 Hours and 3% respondents are having Teaching working Hours in weeks above 60 Hours out of total 100 respondents.

Monthly Salary:-

Table 3. Monthly Salary:

Monthly Salary	Frequency	Percentage
20,000 or Below	12	12%
20,000-30,000	27	27%
30,000-40,000	11	11%
40,000-50,000	15	15%
Above 50,000	35	35%
Total	100	100%

Interpretation:-

From the above table Researcher can say that 12% respondents are having Monthly Salary Below 20,000, 27% respondents are having Monthly Salary between 20,000-30,000, 11% respondents are having Monthly Salary between 30,000-40,000, 15% respondents are having Monthly Salary between 40,000-50,000 and 35% respondents are having Monthly Salary Above 50,000 out of total 100 respondents.

Causes of Stress:-

Table 4. Causes of Stress:

S.No.	Statement	Never	Very Less	Sometimes	Usually	Always
1.	I usually fear I may be terminated from my job.	50%	19%	17%	0%	1%
2.	Our seniors consider us to be hardworking and competent employees.	10%	8%	18%	21%	20%
3.	Sometimes I think of what will happen to my family if I turned out off my job.	28%	17%	23%	6%	7%
4.	I do my work under heavy mental strain.	29%	22%	22%	5%	4%
5.	I often get worried that I would come under some catastrophe.	38%	18%	18%	4%	3%
6.	I often feel whether I shall be able to discharge my duties and responsibilities successfully.	20%	20%	25%	9%	8%
7.	I often feel that I shall not be able to achieve inner satisfaction through this job.	30%	17%	27%	8%	6%
8.	I often apprehend that my seniors may get annoyed with me.	37%	21%	17%	8%	2%
9.	Whenever any of my friends is promoted I feel disappointed.	38%	21%	18%	3%	0%
10.	I sometimes feel that I can do some other job with more ease and efficiency.	20%	20%	25%	9%	8%

Interpretation:

From the above table Researcher can say that in **Statement 1** i.e. I usually fear I may be terminated from my job; 50% respondents 'Never' feels such things, 'Very less" respondents

i.e. only 19%, 17% respondents feels it 'Sometimes', 0% respondents 'Usually' feels this and about 1% respondents are 'Always' feels it.

From the above table Researcher can say that in **Statement 2** i.e. Our seniors consider us to be hardworking and competent employees; 10% respondents 'Never' feels such things, 'Very less" respondents i.e. only 8%, 18% respondents feels it 'Sometimes', 21% respondents 'Usually' feels this and about 20% respondents are 'Always' feels it.

From the above table Researcher can say that in **Statement 3** i.e. Sometimes I think that what will happen to my family if I turned out off job; 28% respondents 'Never' feels such things, 'Very less" respondents i.e. only 17%, 23% respondents feels it 'Sometimes', 6% respondents 'Usually' feels this and about 7% respondents are 'Always' feels it.

From the above table Researcher can say that in **Statement 4** i.e. I do my wok under heavy mental strain; 29% respondents 'Never' feels such things, 'Very less" respondents i.e. only 22%, 22% respondents feels it 'Sometimes', 5% respondents 'Usually' feels this and about 4% respondents are 'Always' feels it.

From the above table Researcher can say that in **Statement 5** i.e. I often get worried that I would come under some catastrophe; 38% respondents 'Never' feels such things, 'Very less" respondents i.e. only 18%, 18% respondents feels it 'Sometimes', 4% respondents 'Usually' feels this and about 3% respondents are 'Always' feels it.

From the above table Researcher can say that in **Statement 6** i.e. I often feel whether I shall be able to discharge my duties and responsibilities successfully; 20% respondents 'Never' feels such things, 'Very less" respondents i.e. only 20%, 25% respondents feels it 'Sometimes', 9% respondents 'Usually' feels this and about 8% respondents are 'Always' feels it.

From the above table Researcher can say that in **Statement 7** i.e. I often feel that I shall not be able to achieve inner satisfaction through this job; 30% respondents 'Never' feels such things, 'Very less" respondents i.e. only 17%, 27% respondents feels it 'Sometimes', 8% respondents 'Usually' feels this and about 6% respondents are 'Always' feels it.

From the above table Researcher can say that in **Statement 8** i.e. I often apprehend that my seniors may get annoyed with me; 37% respondents 'Never' feels such things, 'Very less" respondents i.e. only 21%, 17% respondents feels it 'Sometimes', 8% respondents 'Usually' feels this and about 2% respondents are 'Always' feels it.

From the above table Researcher can say that in **Statement 9** i.e. Whenever any of my friends is promoted I feel disappointed; 38% respondents 'Never' feels such things, 'Very less" respondents i.e. only 21%, 18% respondents feels it 'Sometimes', 3% respondents 'Usually' feels this and about 0% respondents are 'Always' feels it.

From the above table Researcher can say that in **Statement 10** i.e. I sometimes feels that I can do some other job with more ease and efficiency; 20% respondents 'Never' feels such things, 'Very less" respondents i.e. only 20%, 25% respondents feels it 'Sometimes', 9% respondents 'Usually' feels this and about 8% respondents are 'Always' feels it.

Stress Management practices in their institution:-

Table 5. Stress Management practices in their institution

S.No.	Statement	Not at all Effective	Not Effective	Neutral	Effective	Highly Effective
1.	Stress Management Webinars/ Seminars.	21%	8%	26%	26%	5%
2.	Availability of Physiotherapist or mentorship facility.	18%	19%	23%	20%	5%
3.	Health check-up programs.	20%	13%	22%	20%	10%
4.	Stress control workshops.	11%	10%	28%	25%	7%
5.	Regular Yoga Sessions.	12%	9%	30%	14%	16%
6.	Inter-zonal sports and cultural tournament.	15%	12%	23%	23%	13%
7.	Sabbatical leaves.	20%	10%	30%	15%	10%

Interpretation:-

From the above table Researcher can say that in **Statement 1** i.e. Stress Management Webinars/Seminars; 21% respondents feels that it is 'Not at all Effective', 8% respondents feels that it is 'Not Effective', 26% respondents feels it as a 'Neutral' response, 26% respondents feels it is 'Effective' and 5% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 2** i.e. Availability of Physiotherapist or mentorship facility; 18% respondents feels that it is 'Not at all Effective', 19% respondents feels that it is 'Not Effective', 23% respondents feels it as a 'Neutral' response, 20% respondents feels it is 'Effective' and 5% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 3** i.e. Health check-up programs; 20% respondents feels that it is 'Not at all Effective', 13% respondents feels that it is 'Not Effective', 22% respondents feels it as a 'Neutral' response, 20% respondents feels it is 'Effective' and 10% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 4** i.e. Stress control workshops; 11% respondents feels that it is 'Not at all Effective', 10% respondents feels that it is 'Not Effective', 28% respondents feels it as a 'Neutral' response, 25% respondents feels it is 'Effective' and 7% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 5** i.e. Regular Yoga Sessions; 12% respondents feels that it is 'Not at all Effective', 9% respondents feels that it is 'Not Effective', 30% respondents feels it as a 'Neutral' response, 14% respondents feels it is 'Effective' and 16% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 6** i.e. Inter-zonal sports and cultural tournaments; 15% respondents feels that it is 'Not at all Effective', 12% respondents

feels that it is 'Not Effective', 23% respondents feels it as a 'Neutral' response, 23% respondents feels it is 'Effective' and 13% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 7** i.e. Sabbatical leaves ; 20% respondents feels that it is 'Not at all Effective', 10% respondents feels that it is 'Not Effective', 30% respondents feels it as a 'Neutral' response, 15% respondents feels it is 'Effective' and 10% feels it is 'Highly Effective'.

Psychological effects of Stress:-

Table 6. Psychological effects of Stress

Psychological Effects	Frequency	Percentage
Anxiety	24	24%
Depression	6	6%
Anger	42	42%
Low self esteem	7	7%
Apathy/worry	6	6%
Other	15	15%
Total	100	100%

Interpretation:

From the above table Researcher can say that 24% respondents are facing Anxiety issue, 6% respondents are facing Depression issue, 42% respondents are facing Anger issue and 7% respondents are facing Low self esteem issue, 6% respondents are facing Apathy/worry issue and 15% respondents are facing Other issue out of total 100 respondents.

Physical effects of Stress:-

Table 7. Physical effects of Stress

Physical Effects	Frequency	Percentage
Headache or Migraine attacks	43	43%
Increased Heart Rate	6	6%
Body Pain	15	15%
High Blood Pressure	6	6%
Acne or Other Skin Problems	9	9%
Other	21	21%
Total	100	100%

Interpretation:

From the above chart and table Researcher can say that 43% respondents are facing Headache or Migraine attacks issue, 6% respondents are facing Increased Heart Rate issue, 15% respondents are facing Body Pain issue, 6% respondents are facing High Blood Pressure issue, 9% respondents are facing Acne or Other Skin Problems issue and 21% respondents are facing Other issue out of total 100 respondents.

Occupational effects of Stress:-

Table 8. Occupational effects of Stress

Occupational Effects	Frequency	Percentage
Totally exhausted at the end of the day at workplace	35	35%
Feel irritated, nervous and angry while performing the job	24	24%
Health condition is weakening due to the stressful job	9	9%
Total dissatisfaction with the job	3	3%
Other	26	26%
Total	100	100%

Interpretation:

From the above chart and table Researcher can say that 35% respondents got Totally exhausted at the end of the day at workplace, 24% respondents Feel irritated, nervous and angry while performing the job, 9% respondents Health condition is weakening due to the stressful job, 3% respondents are facing Total dissatisfaction with the job, 3% respondents Think of quitting the job and 26% respondents are facing Other issue out of total 100 respondents.

Effects of Stress Management Practices:-

Table 9. Effects of Stress Management Practices

S.No.	Statement	Not at all Effective	Not Effective	Neutral	Effective	Highly Effective
1.	Improve interpersonal relations.	5%	8%	20%	45%	22%
2.	Manage anger.	2%	10%	25%	41%	20%
3.	Reduce absenteeism.	5%	9%	23%	40%	19%
4.	Complete the tasks assigned on time.	5%	7%	18%	42%	24%
5.	Reduce mistakes.	4%	8%	18%	50%	21%
6.	Keep good mental and physical health.	2%	9%	14%	42%	26%
7.	Reduce complaints from officials.	4%	8%	14%	4%	21%

Interpretation:-

From the above table Researcher can say that in **Statement 1** i.e. improve interpersonal relations; 5% respondents feels that it is 'Not at all Effective', 8% respondents feels that it is 'Not Effective', 20% respondents feels it as a 'Neutral' response, 45% respondents feels it is 'Effective' and 22% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 2** i.e. Manage anger; 2% respondents feels that it is 'Not at all Effective', 10% respondents feels that it is 'Not Effective', 25% respondents feels it as a 'Neutral' response, 41% respondents feels it is 'Effective' and 20% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 3** i.e. Reduce absenteeism; 5% respondents feels that it is 'Not at all Effective', 9% respondents feels that it is 'Not Effective', 23% respondents feels it as a 'Neutral' response, 40% respondents feels it is 'Effective' and 19% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 4** i.e. Complete the tasks; 5% respondents feels that it is 'Not at all Effective',7% respondents feels that it is 'Not Effective', 18% respondents feels it as a 'Neutral' response, 42% respondents feels it is 'Effective' and 24% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 5** i.e. Reduce mistakes; 4% respondents feels that it is 'Not at all Effective', 8% respondents feels that it is 'Not Effective', 18% respondents feels it as a 'Neutral' response, 50% respondents feels it is 'Effective' and 21% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 6** i.e. Keep good mental and physical health; 2% respondents feels that it is 'Not at all Effective', 9% respondents feels that it is 'Not Effective', 14% respondents feels it as a 'Neutral' response, 42% respondents feels it is 'Effective' and 26% feels it is 'Highly Effective'.

From the above table Researcher can say that in **Statement 7** i.e. Reduce complaints from officials; 4% respondents feels that it is 'Not at all Effective', 8% respondents feels that it is 'Not Effective', 14% respondents feels it as a 'Neutral' response, 4% respondents feels it is 'Effective' and 21% feels it is 'Highly Effective'.

Conclusions

Work stress is a real challenge for everyone for those who are working ad especially for the professors and Secondary School Teachers those who are working in the various institutions. It is important that your workplace is being continuously monitored for stress problems. Further it is not only important to identify stress problems but also to deal with them to promote healthy work and reduced harmful aspects of work. Work, itself can be a self-promoting activity as long

as it takes place in a safe, developed and healthy environment. Successful employers and managers should provide leadership in dealing with the challenge of work stress. Professors and Secondary School Teachers can relieve their stress by altering their lifestyle and it includes building greater stress tolerance, changing their pace of life, controlling distressful thoughts, acquiring problem solving skills and last but not the least by seeking social support. It is also important that various colleges and schools should have the criteria of Stress Management practices which is to be followed by their staff members and also Professors and Secondary School Teachers should follow Stress Management practices individually to overcome the stress. People who are following Stress management practices should guide others also to follow the same so that they can balance both personal and professional life properly.

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Predictive Analytics and AI in E-Commerce: Understanding Indian Consumers' Purchase Patterns and Preferences

Dr. Chandni Vadera Thakkar

The rapid growth of e-commerce has transformed the retail landscape, and the application of predictive analytics and artificial intelligence has become increasingly crucial for understanding consumer behavior and optimizing business strategies. This research paper aims to explore the impact of these technologies on the Indian e-commerce market, focusing on the patterns and preferences of Indian consumers.

The recent surge in online shopping in India can be attributed to several factors, including the widespread availability of the internet, the increasing penetration of smartphones, and the convenience and accessibility of e-commerce platforms. (Kanchan & Kumar, 2015) Furthermore, the COVID-19 pandemic has accelerated the shift towards online shopping, with many consumers turning to e-commerce as a safer and more convenient alternative to traditional brick-and-mortar stores. (Kumar & Kumar, 2021)

One key aspect of the Indian e-commerce landscape is the growing importance of the female apparel market. Research has shown that apparel sales on e-commerce platforms in India have outpaced other product categories, with women's fashion leading the way. (Indumati et al., 2020) Understanding the factors that drive this trend can provide valuable insights for e-commerce businesses seeking to better serve this segment of the market.

Predictive analytics and AI have emerged as powerful tools for understanding and anticipating consumer behavior. By analyzing vast amounts of data on consumer preferences, purchasing habits, and market trends, e-commerce companies can develop more personalized and targeted marketing strategies, optimize product selection and pricing, and enhance the overall customer experience.

As the Indian e-commerce market continues to evolve, the strategic application of these technologies will be crucial for businesses seeking to stay ahead of the competition and meet the evolving needs and preferences of Indian consumers. By leveraging the insights gleaned from predictive analytics and AI, e-commerce companies can make more informed decisions, improve operational efficiency, and drive sustainable growth in the Indian market.

The present research paper aims to explore the impact of predictive analytics and AI on the Indian e-commerce market, with a specific focus on understanding the purchase patterns and

preferences of Indian consumers. The study will examine the factors that influence online shopping behavior, the challenges faced by Indian e-commerce players, and the strategies they can adopt to overcome these challenges and better serve the needs of Indian consume

Literature Review

Understanding Indian Consumers' Behavior and Preferences

Indian consumers display unique and diverse shopping behaviors shaped by cultural, economic, and regional factors. Existing research highlights trust and risk perception as critical barriers to the adoption of online shopping. Abarna et al. (2023) emphasize that despite the growing popularity of e-commerce, many Indian consumers remain hesitant to fully transition from traditional retail due to concerns about product authenticity, payment security, and delivery reliability. These concerns are particularly pronounced in rural and semi-urban areas, where digital literacy and trust in online platforms are relatively low.

Service quality, website design, security, and privacy are pivotal in influencing consumer decisions. Singh and Ajmani (2016) argue that user-friendly interfaces and transparent policies play a vital role in enhancing customer satisfaction, ultimately leading to increased purchase intent. Furthermore, factors such as price competitiveness, the availability of cash-on-delivery options, and personalized offers have been identified as significant drivers of consumer loyalty in the Indian e-commerce market.

Women, as a key demographic, have emerged as influential players in shaping online shopping trends. Ogunmola et al. (2020) note that convenience, extensive product variety, and the ability to compare prices across platforms attract women to categories like apparel and personal care. This underscores the need for e-commerce businesses to develop targeted strategies that cater to this segment, which accounts for a significant share of online sales.

The Role of Predictive Analytics and AI in E-Commerce

Predictive analytics and artificial intelligence (AI) have revolutionized the e-commerce landscape by offering data-driven insights that enable businesses to anticipate consumer needs and enhance decision-making processes. These technologies analyze vast datasets to identify patterns, trends, and correlations, thereby facilitating personalized marketing, inventory optimization, and improved customer experiences.

Applications in the Indian E-Commerce Market

1. Personalised Recommendation

One of the most impactful applications of predictive analytics and AI is personalized product recommendations. Platforms like Flipkart and Amazon India leverage advanced machine learning algorithms to analyze browsing history, purchase behavior, and customer reviews to suggest

relevant products. For instance, Flipkart's recommendation engine uses collaborative filtering to understand user preferences and suggest items that are likely to appeal to them. Such tailored recommendations not only enhance customer satisfaction but also increase average order value and retention rates.

2. Dynamic Pricing Strategies.

Predictive analytics allows businesses to implement dynamic pricing models by analyzing market trends, competitor prices, and demand patterns. Amazon India, for example, uses AI-driven tools to adjust prices in real-time, ensuring competitive pricing while maximizing profitability. This strategy helps retain price-sensitive Indian consumers, particularly during high-demand periods like festive seasons or sales events.

3. Demand Forecasting and Inventory Management

Accurate demand forecasting is crucial in a diverse market like India, where consumer preferences vary widely across regions. Predictive analytics enables e-commerce companies to predict product demand based on historical sales data, seasonal trends, and external factors such as festivals. Flipkart, for instance, utilizes AI-driven forecasting tools to optimize inventory levels, ensuring that popular items are always in stock while minimizing overstock and associated costs.

4. Enhanced Customer Support

AI-powered chatbots and virtual assistants have become integral to improving customer support in Indian e-commerce. By analysing common customer queries and complaints, these tools provide instant solutions, reducing wait times and enhancing user satisfaction. Predictive analytics also helps identify potential customer churn by analyzingbehavioral patterns, enabling businesses to proactively address issues and retain customers.

Implications for This Study

The integration of predictive analytics and AI in platforms like Flipkart and Amazon India serves as a valuable reference for understanding how these technologies can shape consumer behavior and business strategies in the Indian e-commerce sector. By analyzing case studies and existing literature, this research aims to identify best practices and challenges associated with leveraging these tools.

The examples of Flipkart's recommendation engine and Amazon India's dynamic pricing highlight the potential of predictive analytics to personalize user experiences and cater to diverse consumer needs. These insights can guide e-commerce businesses in adopting similar strategies to enhance their market presence and drive customer satisfaction.

Furthermore, understanding how predictive analytics helps address operational challenges, such as inventory management and customer support, provides a framework for exploring its broader impact on business efficiency and sustainability. This study seeks to contribute to the growing body of knowledge on predictive analytics by focusing on its application in the context of Indian consumer preferences and purchase patterns.

Data Collection and Analysis

1. Data Collection

The data collection process for this study will rely entirely on secondary data sources, which include academic journals, industry reports, case studies, government publications, and publicly available databases. Below is a detailed breakdown of the data collection process:

1.1 Identification of Secondary Data Sources

• **Academic Journals and Research Articles:**

• Relevant peer-reviewed academic journals and papers on predictive analytics, artificial intelligence (AI), and consumer behavior in the Indian e-commerce market will be identified. These sources will provide the theoretical foundation for the study, as well as empirical findings on the relationship between AI and consumer purchase patterns.

• Key databases such as Google Scholar, JSTOR, and ResearchGate will be searched using specific keywords like "predictive analytics in e-commerce," "AI and consumer behavior in India," and "Indian e-commerce trends."

• Publications from prominent researchers in the field of AI in e-commerce and consumer behavior, such as Ogunmola et al. (2020) and Singh & Ajmani (2016), will be prioritized.

• **Industry Reports and Market Analysis:**

• Reports from reputed market research firms, such as Nielsen, McKinsey, Statista, and PwC, will be utilized to gather quantitative data on the growth of the Indian e-commerce market, consumer preferences, AI adoption rates, and market segmentation.

• These reports will provide crucial insights into consumer trends, including the growing importance of female consumers in the apparel sector, and the increasing reliance on AI for personalized recommendations and dynamic pricing strategies.

• **Case Studies of Major E-commerce Players:**

• Case studies of leading Indian e-commerce platforms like Flipkart and Amazon will be analyzed to understand their AI implementation strategies, customer engagement tactics, and predictive analytics tools. These case studies will help illustrate real-world applications of AI in shaping consumer behavior and enhancing customer experience.

- Case studies will be gathered from company reports, industry publications, and academic research papers focusing on e-commerce practices in India.

• **Government and Regulatory Reports:**

- Reports published by the Indian government and regulatory bodies, such as the Ministry of Commerce and Industry, the Department of Electronics and Information Technology (DeitY), and the National Association of Software and Service Companies (NASSCOM), will be reviewed for insights into the regulatory environment, policy frameworks, and the digital economy in India.

- These reports will help contextualize the adoption and ethical considerations related to AI in the Indian e-commerce sector.

• **Public Surveys and Consumer Behavior Data:**

- Data from publicly available surveys and consumer behavior reports will be included to better understand the preferences and motivations of Indian consumers in the digital shopping environment. Sources may include large-scale surveys conducted by organizations like Statista and Indian market research firms.

1.2 Data Collection Process

- **Search and Selection:**

- Initially, a comprehensive search of academic articles and industry reports will be conducted, focusing on the period from 2015 to 2024 to ensure that the data is current and reflects recent developments in the Indian e-commerce landscape.

- A systematic review will be performed to select sources that are highly relevant, credible, and applicable to the research question. Sources will be assessed for their research quality, relevance to AI and predictive analytics in Indian e-commerce, and reliability.

- **Data Sourcing:**

- Academic articles will be sourced primarily from databases like JSTOR and Google Scholar, ensuring that only peer-reviewed sources are selected.

- Industry reports will be downloaded directly from the websites of organizations like McKinsey, Nielsen, PwC, and Statista, or obtained from business intelligence platforms such as MarketResearch.com or IBISWorld.

- Government reports and publications will be retrieved from official Indian government websites.

Data Analysis & Interpretation

Here is a detailed analysis and comparison of major e-commerce companies operating in India, with a focus on their use of predictive analytics and AI in shaping consumer behavior, optimizing operations, and improving customer experience:

1. Flipkart

Overview:

Flipkart, one of India's largest e-commerce platforms, has been at the forefront of adopting AI and predictive analytics to enhance its customer experience. Flipkart leverages AI-driven algorithms to personalize shopping experiences, optimize inventory, and improve pricing strategies.

AI and Predictive Analytics Implementations:

- **Personalized Recommendations:** Flipkart uses machine learning models to recommend products to users based on their browsing history, search patterns, and previous purchases. This creates a more personalized shopping experience, which can increase consumer satisfaction and conversion rates.

- **Dynamic Pricing:** Flipkart's dynamic pricing system, driven by predictive analytics, adjusts prices based on various factors, including demand, competition, and seasonality. This pricing optimization helps the platform stay competitive and ensures better profit margins.

- **Demand Forecasting and Inventory Management:** Using predictive analytics, Flipkart forecasts demand for products based on historical data, consumer behavior trends, and external factors like weather and festivals. This enables efficient inventory management, reducing stock-outs or overstock situations.

- **Logistics and Delivery:** Flipkart uses AI to optimize delivery routes and predict delivery times, enhancing customer satisfaction by providing timely deliveries. This AI-driven logistics system is crucial in a country as large and geographically diverse as India.

Challenges:

- Flipkart faces the challenge of balancing personalization with data privacy concerns. As AI requires extensive consumer data, maintaining user trust while leveraging data-driven insights is a delicate balance.

- Despite AI's effectiveness in personalization, the company's challenge lies in managing the vast scale of operations, especially when it comes to smaller sellers who may not have access to sophisticated AI tools.

2. Amazon India

Overview:

Amazon India, the Indian arm of the global e-commerce giant, has implemented AI and predictive analytics to offer superior customer service, streamline operations, and maintain its market dominance.

AI and Predictive Analytics Implementations:

- **Product Recommendations and Personalization:** Amazon India uses deep learning algorithms and collaborative filtering techniques to recommend products to users. The system is continuously improved by tracking customer interactions, such as click-through rates, purchase behavior, and browsing activity. This high level of personalization keeps customers engaged and increases the likelihood of purchase.

- **Alexa and Voice Commerce:** With the growing adoption of Alexa, Amazon has integrated voice-commerce capabilities into its AI strategy. Consumers can now search for products, add them to their carts, and even place orders using voice commands. This adds a layer of convenience and enhances customer engagement.

- **AI-Powered Inventory and Supply Chain Optimization:** Amazon uses AI-driven predictive analytics to optimize its inventory and supply chain. This includes demand forecasting and warehouse management, ensuring that the right products are available in the right locations, minimizing fulfillment delays, and optimizing delivery costs.

- **Prime Membership and Dynamic Content:** Amazon uses AI to tailor content for its Prime members, recommending personalized video, music, and shopping offers based on previous usage patterns. The platform also uses AI for personalized pricing and discounts for Prime members based on their loyalty and purchase history.

Challenges:

- **Market Penetration in Rural Areas:** Despite Amazon's success in major cities, its penetration in rural India remains a challenge. This is due to logistics issues, limited internet connectivity, and challenges in understanding the preferences of rural consumers.

- **High Competition with Local Players:** Amazon faces fierce competition from Flipkart and other local players like Reliance's JioMart. Local platforms have better knowledge of consumer preferences, regional tastes, and logistics infrastructure.

3. Myntra

Overview:

Myntra, a leading online fashion retailer in India, has heavily invested in AI and predictive

analytics to enhance its customer experience, optimize fashion recommendations, and streamline its supply chain.

AI and Predictive Analytics Implementations:

- **Fashion Recommendation System:** Myntra uses AI to provide personalized fashion recommendations to users. The platform analyzes browsing data and uses machine learning to predict styles, colors, and products that are most likely to appeal to individual users. It also tailors suggestions based on current fashion trends.

- **Visual Search and Style Recognition:** Myntra's AI-powered visual search feature allows customers to search for products using images instead of keywords. This is particularly useful for fashion consumers who want to find items that resemble an image they like. The AI system recognizes the style, pattern, and features of the image to display similar items on the platform.

- **Smart Inventory Management:** Myntra employs AI to predict demand trends in the fashion category, helping them maintain the right stock levels and avoid overstocking or understocking. They analyze factors such as seasonality, fashion trends, and regional preferences to improve inventory management.

- **AI for Virtual Try-Ons:** Myntra has launched a virtual try-on feature where customers can use augmented reality (AR) and AI to see how clothes will fit them. This feature uses customer body measurements and AI to simulate how clothes will look on them, reducing returns and enhancing the shopping experience.

Challenges:

- **High Return Rates:** Despite AI innovations, Myntra faces high return rates in fashion retail, which can impact profitability. Predicting sizing preferences and minimizing returns is a key challenge that AI is yet to fully solve.

- **Limited AI Adoption in Smaller Sellers:** Like Flipkart, Myntra faces challenges in providing AI tools to smaller sellers on its platform. This limits the scalability of AI-driven personalization for all customers.

4. Snapdeal

Overview:

Snapdeal, another major e-commerce player in India, has also embraced AI and predictive analytics to stay competitive. It focuses on value-for-money products and caters primarily to the mass market.

AI and Predictive Analytics Implementations:

- **Price Optimization:** Snapdeal uses predictive analytics to offer competitive pricing by analyzing competitors' prices, historical sales data, and demand trends. This helps the platform adjust its pricing strategies dynamically to maximize sales.

- **Customer Segmentation and Targeting:** Snapdeal uses AI to segment its customer base and target them with personalized offers. For example, Snapdeal tracks user behavior and purchases to create tailored marketing campaigns, offering discounts and deals that align with the customer's preferences and buying behavior.

- **Logistics and Delivery:** Similar to Flipkart and Amazon, Snapdeal uses AI for logistics optimization, predicting the fastest routes for deliveries and ensuring timely delivery. AI is also used to optimize packaging and reduce delivery costs.

Challenges:

- **Competition from Larger Players:** Despite its efforts in AI and analytics, Snapdeal struggles to compete with Flipkart and Amazon, especially when it comes to premium and exclusive products. Its mass-market focus, while successful, has not helped it penetrate the high-end segment as effectively as its competitors.

- **Lower Consumer Trust in Data Privacy:** Snapdeal has faced challenges in building consumer trust, particularly in terms of data privacy. While AI can help personalize the customer experience, it requires vast amounts of data, raising concerns about security and consumer privacy.

Comparison:

Feature	Flipkart	Amazon India	Myntra	Snapdeal
Personalization	AI-driven product recommendations, dynamic pricing	Deep learning-based recommendations, Alexa integration	Fashion-specific recommendations, virtual try-ons	Price optimization and customer segmentation
Supply Chain/Logistics	Predictive analytics for demand forecasting, route optimization	AI-driven inventory management, optimized deliveries	Smart inventory management, fashion demand forecasting	AI-powered logistics optimization
Market Focus	Broad range of products, with a focus on competitive pricing	Premium products, Prime membership, and global reach	Fashion-centric, with focus on personalized style	Value-for-money products, mass market focus
AI Features	Personalized pricing, demand forecasting, AI recommendations	Voice-commerce via Alexa, dynamic content, Prime member targeting	AR for virtual try-ons, visual search for fashion	Competitive pricing and tailored offers based on data
Challenges	Privacy concerns, scaling AI for smaller sellers	Rural penetration, competition from local players	High return rates, limited scalability for small sellers	Data privacy concerns, competition from larger players

Findings: Challenges and Opportunities in Implementing Predictive Analytics in E-Commerce

This research explored the impact of predictive analytics and AI on the Indian e-commerce market, focusing on the patterns and preferences of Indian consumers. The findings highlight both the challenges faced by e-commerce companies in implementing predictive analytics and AI and the opportunities these technologies offer to improve customer experience and drive business growth.

Challenges in Implementing Predictive Analytics in E-Commerce

1. **Data Privacy and Security Concerns:** As e-commerce platforms rely heavily on customer data to drive personalized experiences, ensuring data privacy and security remains a significant challenge. Indian consumers are becoming more cautious about sharing their personal information online due to increasing awareness of data breaches and privacy violations. E-commerce companies must comply with strict data protection regulations and invest in secure data storage and processing mechanisms to protect consumer data. This issue is especially critical for companies like Flipkart, Amazon, and Myntra, which use extensive data for product recommendations, dynamic pricing, and customer segmentation.

2. **Accuracy of Predictions:** Predictive analytics relies on historical data and machine learning models to forecast consumer behavior. However, inaccuracies in data or improper model training can lead to poor predictions, which can harm customer experience. For instance, inaccurate demand forecasting can result in stockouts or overstocking, which negatively affects sales and customer trust. E-commerce giants like Flipkart and Amazon need to continuously refine their AI models and ensure they account for changing consumer behavior, seasonality, and external factors such as economic shifts or local festivals.

3. **Scalability for Smaller Sellers:** While large e-commerce platforms like Amazon and Flipkart can afford to implement sophisticated predictive analytics tools, smaller sellers on these platforms often lack access to such technologies. This creates a gap in the effectiveness of predictive analytics across the platform. Smaller vendors may struggle to adopt AI-driven solutions due to financial constraints, technical knowledge gaps, or a lack of infrastructure. As a result, e-commerce platforms need to find ways to democratize access to AI tools for smaller sellers, ensuring that the benefits of predictive analytics are shared across the entire ecosystem.

4. **Integration Across Platforms:** Many e-commerce platforms face challenges in integrating predictive analytics tools across multiple customer touchpoints, such as websites, mobile apps, and physical stores. E-commerce platforms like Myntra, which are heavily invested in fashion, require AI tools that can bridge both online and offline experiences. Ensuring consistency in personalized recommendations, dynamic pricing, and demand forecasting across various platforms is a complex task that requires seamless integration and real-time data processing.

5. **Customer Trust and Adoption:** Despite the potential of predictive analytics to enhance customer experience, consumers may be hesitant to fully embrace these technologies. Concerns about AI being too intrusive, such as excessive personalized ads or recommendations, may reduce consumer trust. E-commerce companies must balance personalization with consumer comfort, ensuring that AI-driven experiences feel seamless and non-intrusive. Furthermore, some customers might find it difficult to understand how AI-powered recommendations work, potentially leading to skepticism about the relevance and accuracy of product suggestions.

Opportunities in Implementing Predictive Analytics in E-Commerce

1. **Enhanced Personalization and Customer Engagement:** Predictive analytics allows e-commerce companies to deliver highly personalized experiences that cater to the unique preferences and behaviors of individual consumers. By analyzing browsing history, purchase patterns, and demographic information, platforms like Flipkart and Amazon can offer tailored product recommendations, personalized discounts, and targeted advertisements. This enhanced level of personalization can significantly improve customer satisfaction, increase sales, and foster customer loyalty.

2. **Optimizing Inventory Management:** One of the most significant opportunities offered by predictive analytics in e-commerce is improving inventory management. By accurately forecasting demand based on historical data, trends, and external factors, e-commerce platforms can better align their inventory with customer preferences. This reduces the risk of stockouts or excess inventory, helping companies optimize their supply chains, reduce operational costs, and improve profit margins. Companies like Myntra, for instance, can leverage predictive analytics to anticipate fashion trends and ensure that the right products are available at the right time.

3. **Dynamic Pricing and Competitive Advantage:** Predictive analytics enables e-commerce platforms to implement dynamic pricing strategies based on factors such as demand, competitor pricing, seasonality, and consumer purchasing power. This allows companies to adjust prices in real time, ensuring they remain competitive in a crowded market. For example, Amazon uses AI algorithms to dynamically adjust pricing based on real-time market conditions. This enables companies to optimize their pricing strategies, improve sales, and enhance profitability.

4. **Improved Customer Service and Reduced Operational Costs:** AI-driven chatbots and virtual assistants, powered by predictive analytics, can significantly improve customer service by providing timely and accurate responses to customer queries. These tools use historical data to understand common customer issues and offer automated solutions, reducing the need for human intervention. Additionally, predictive analytics can help companies identify operational inefficiencies and reduce costs by optimizing supply chains, inventory, and delivery routes.

5. **Better Customer Retention and Loyalty Programs:** By analyzing customer behavior and preferences, predictive analytics allows e-commerce companies to create effective loyalty programs and retention strategies. Personalized offers, discounts, and product recommendations can be used to keep customers engaged and encourage repeat purchases. For instance, platforms like Amazon Prime use AI to offer personalized content and shopping experiences, which increases customer retention. Predictive models can also identify customers at risk of churning, enabling companies to target them with retention offers.

6. **Innovation in Customer Experience (CX):** Predictive analytics offers an opportunity to innovate customer experience through AI-driven features like virtual try-ons, personalized content, and voice-commerce. Myntra's virtual try-on feature and Amazon's Alexa integration into shopping are prime examples of how predictive analytics can create unique shopping experiences that differentiate brands from their competitors. These innovations not only enhance customer satisfaction but also increase brand loyalty, making consumers more likely to return to platforms that provide superior experiences.

The findings of this paper highlight the critical role of predictive analytics and AI in shaping the future of e-commerce in India. While the implementation of these technologies comes with challenges such as data privacy concerns, accuracy of predictions, and scalability for smaller sellers, the opportunities are substantial. By leveraging AI and predictive analytics, e-commerce companies can offer highly personalized experiences, optimize their supply chains, and gain a competitive advantage in the increasingly crowded Indian market. However, to fully realize the potential of these technologies, companies need to focus on overcoming the barriers to adoption, ensuring that AI is accessible, ethical, and aligned with consumer needs. Through this research, it becomes evident that the successful integration of predictive analytics and AI in e-commerce is not just about technological advancement but also about balancing innovation with customer trust and experience.

Conclusion

This research paper explored the transformative role of predictive analytics and artificial intelligence in the Indian e-commerce landscape. Through a comprehensive review of literature and secondary data, it was evident that these technologies are pivotal in understanding consumer purchase patterns, enhancing operational efficiency, and delivering personalized shopping experiences. The findings underscored how major players like Flipkart and Amazon are leveraging AI to refine dynamic pricing, optimize inventory, and foster customer loyalty, while also highlighting the challenges such as data privacy concerns and algorithmic bias.

The Indian e-commerce sector stands at the intersection of rapid technological advancement and dynamic consumer behavior. The integration of predictive analytics and AI has enabled businesses to anticipate market trends, streamline operations, and adapt to evolving customer needs. However, the success of these technologies depends on addressing ethical concerns, fostering trust, and ensuring inclusivity in their application.

Future trends suggest deeper integration of AI with augmented reality, voice, and visual search technologies, which will further enhance the consumer experience. Additionally, the alignment of AI-driven strategies with sustainability and ethical practices will position businesses to meet the demands of a conscious consumer base. As the industry evolves, predictive analytics and AI will remain critical tools for e-commerce companies to navigate challenges, capitalize on opportunities, and drive growth in a highly competitive and diverse market.

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A Study on the Stress Level of Working Pregnant Women During the Course of their Employment in Surat City

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Abstract

This paper aims at establishing stress experience by working pregnant women in Surat City across distinct phases of their working career efficiencies and organizational culture. The above explained dual role results to stress, which has effects on both the mother and the unborn child. The study aims to understand the main causes of stress, the effect of stress at work, physical stress and psychological stress, sources of support, and work-life interface. Self-administered questionnaires and face to face interviews were used to collect information from a purposive sample of pregnant workers in various organizations in Surat. The process presented in the paper discovers major sources of stress and revealed differences in stress patterns by occupation, surroundings, trimester, and availability of facilities. Tension moderating options such as work schedule, ergonomical changes and maternity leave for females could be identified from this study. The present work provides suggestions for employers and policy makers to ensure that pregnant women and their employers reap benefits from breastfeeding by being supportive to pregnant females at workplace. This study adds to the body of knowledge on occupational health along with prenatal care for working pregnant women with additional direction for increasing job satisfaction rates and minimizing stress related health effects on pregnant women.

Key words: Prenatal care, maternity leave, stress experience, trimester, work life interface and ergonomical changes.

I. Introduction

Working pregnant women often face unique challenges and stressors during the course of their employment. Balancing the demands of work and pregnancy can lead to increased stress levels, which may have implications for both the mother and the developing fetus. Several factors contribute to the stress experienced by working pregnant women.

These include: 1. Job demands 2. Physical discomfort: 3. Emotional concerns 4. Work-life balance 5. Lack of support 6. Job security and discrimination.

Research on the stress levels of working pregnant women aims to understand the impact of these factors on their well-being. It explores the effects of stress on maternal health, pregnancy

outcomes, and the overall well-being of both the mother and the baby. The purpose of the study on the stress level of working pregnant women during the course of their employment is to identify the factors that contribute to stress in pregnant women and to evaluate the impact of stress on the health and well-being of both the mother and the developing fetus. This research aims to provide insights into how employers can create a supportive work environment that promotes the health and well-being of their pregnant employees. The study may also help in developing interventions or strategies that can be implemented to reduce stress levels and improve the health outcomes of pregnant women in the workplace. By studying this topic, researchers can identify effective strategies and interventions to support working pregnant women. This may involve implementing workplace policies that prioritize the health and wellbeing of pregnant employees, providing flexible work arrangements, offering support networks, and raising awareness among employers about the specific needs and challenges faced by working pregnant women. It is important to note that individual experiences may vary, and the level of stress can differ depending on various factors such as the nature of the job, personal circumstances, and support systems in place.

II. Literature Review

Rajnarayan R. Tiwari (2023) "A Comparative Study of Work Stress among Working Females Getting Paid and Working Women Unpaid (Housewives) During Pregnancy" Purpose of the study was to analyse potential impact of employment on pregnancy is an important issue as several occupational factors have been reported to be associated with adverse pregnancy outcomes through increased work stress. The current study was undertaken among pregnant women to understand the difference in pregnancy-related stress among pregnant working women getting paid (WWP) and working women unpaid (WWU) (housewives) and to assess workplace stress among working WWP.

Sasitara Nuampa, Pornnapa Tangsuksan and Crystal L Patil (2023) "Exploring the Experiences of Health-Promoting Behavior in the Workplace among Thai Pregnant Women: A Phenomenological Approach" The aim of the study "Exploring the Experiences of Health-Promoting Behavior in the Workplace among Thai Pregnant Women: A Phenomenological Approach" is to understand the lived experiences of Thai pregnant women regarding health-promoting behaviors in the workplace. The study aims to explore the perceptions, motivations, challenges, and strategies employed by pregnant women in Thailand to engage in health-promoting behaviors while working. It seeks to gain insights into the factors that influence their decision-making processes, such as workplace support, cultural norms, personal beliefs, and perceived benefits and barriers. The study will utilize a phenomenological approach, which aims to capture the essence of the participants' experiences and provide a rich understanding of their perspectives.

Dodik Arso Wibowo, Enur Nurhayati Muchsin (2023) "Stress Level of Pregnant Women During the Pandemic Covid-19" The aim of the study "Stress Level of Pregnant Women During

the Pandemic Covid-19" is to assess the impact of the COVID-19 pandemic on the stress levels of pregnant women. The study aims to identify the factors that contribute to stress during pregnancy, such as fear of getting infected, social isolation, and changes in daily routine.

Rozina Mangi (2023) "Effect of Stress, Depression and Anxiety on Blood Glucose Level in Pregnant Women" This cross-sectional study aimed to investigate the impact of anxiety, depression, and stress on blood glucose levels in pregnant women. A total of 123 pregnant women were included in the study. Using the DASS-21 questionnaire, stress, anxiety, and depression levels were assessed. The results showed that 56.91% of the women experienced stress, 78.86% were depressed, and 84.55% were anxious. It was found that blood glucose levels were significantly higher in pregnant women who were stressed and depressed.

III. Research Methodology

Problem Statement:

Despite the increasing number of women who continue to work during pregnancy, there is limited research examining the specific stressors and their impact on maternal and fetal well being. Working pregnant women may face various stressors related to their job demands, workload, work-life balance, and personal life that can lead to negative health outcomes for both the mother and the fetus. Understanding the factors contributing to stress during pregnancy and their impact on maternal and fetal well-being is crucial for developing effective interventions and policies to support the health and well-being of working pregnant women. This study aims to fill the existing research gap and provide insights that can inform workplace practices, healthcare services, and policy recommendations for promoting a healthy work environment for pregnant women.

Objectives of the Studies

Objectives are as follows:

- To assess the levels of stress experienced by working pregnant women throughout their employment.

- To identify the factors contributing to work-related stress among pregnant women.

- To examine the impact of stress on the mental and physical well-being of working pregnant women.

IV. Findings

Findings of the study are as follows:

The researcher analysis the demographic status of the respondents. It is clear that out of 100 respondents, 44 per cent respondents belong to age group of 26-35 years, 35 per cent

respondents belong to the age group of 18-25 and 3 per cent respondents belongs to the age group of 46-55. The largest group consists of working women are the Office Workers being 35%, followed by teachers 30%, Healthcare Workers make up 18% and Retail Workers account for 17% of the total. Taking work schedule into consideration, the majority of individuals have a full-time work schedule 48%, followed by those working part-time 35% and a smaller percentage of workers are on shift schedules 17%. The majority of people prefer commuting to work in their personal vehicles being 74%, followed by those using public transport 16%, while a smaller percentage prefer walking to their workplace 10%. Majority experience moderate stress which ranges between 4-6 and forms 36 per cent, with a sizable group reporting low stress which ranges between 1-3 and forms 34 per cent, a smaller portion faces higher stress levels which ranges between 7-9 and forms 17 per cent, while a minority encounters significant stress ranging 10 on the pointer scale and forms 11 per cent of the total population. Physical discomfort poses to be the leading cause of stress faced by almost 28 per cent of the population, followed by workload 26 per cent, lack of understanding of coworkers 17 per cent, lack of flexibility in job duties/hours 13 per cent, pressure to perform 8 per cent, concerns about job security 7 per cent. A majority of employers prioritize creating a supportive work environment for their employees, although there is room for improvement in some cases. An overwhelming majority of 94% of individuals report receiving support from their families, whereas a small 6% percentage indicates a lack of family support. Majority of 79% of individuals indicate receiving support from their co-workers, while a notable 21% percentage report a lack of support. 55%, believe it is important to actively handle stress during pregnancy, while the remaining 45% may have a different perspective or may not prioritize stress management during this period. Majority of 45% the respondents believe taking breaks can help cope up with the stress while 31% talking to co-workers, 16% exercise and 8% finds meditation as a best technique. A significant majority of respondents, 82%, have experienced or perceive discrimination in the workplace, while a smaller percentage of 28% believe they have not encountered such issues. 95% respondents have access to or support the provision of paternity leave or other benefits related to pregnancy while only a small percentage of 5% reported not having such benefits. 86% majority respondents have had accommodations made in their work schedule or duties, however, a smaller percentage of 14% reported not receiving such accommodations.

V. Conclusion

The present study was conducted with 100 individual respondents from different region of Surat city. This study provides valuable insights into the unique challenges faced by working pregnant women and the impact of workplace stressors on their well-being. Effective stress management strategies, such as flexible work arrangements, access to support services, and promoting physical and mental wellness, can significantly alleviate stress and enhance maternal and fetal health outcomes. Employers play a crucial role in fostering a nurturing workplace by implementing policies that prioritize the needs of pregnant employees. Raising awareness and

understanding of these challenges among employers and coworkers can pave the way for a more inclusive and supportive environment. Ultimately, this approach benefits not only the health of working pregnant women but also contributes to organizational well-being and productivity.

VI. Suggestion

The study could analyze stress levels across various employment sectors, such as corporate, healthcare, education, and informal work, to identify sector-specific stressors and coping mechanisms. It could also examine the impact of cultural norms and societal expectations unique to Surat City on the experiences of working pregnant women. Investigating the role of workplace policies, including maternity leave, flexible working arrangements, and support systems, would provide insights into organizational practices that alleviate stress. Additionally, the study could focus on socio-economic factors to understand how income levels and resource availability influence stress management. Lastly, assessing the health implications of workplace stress on both the mother and fetus would add a significant dimension to the research, highlighting the importance of supportive environments during pregnancy.

VII. Limitation of Study

The method adopted for primary data collection was non probability convenience sample which does possess its own limitations; hence this limitation automatically applies to the study. The study is based on data collected from the sample size of 100 respondents. This sample size may be considered inappropriate for generalization when compared to the universe of the study. The bias in respondent view can't be ignored. Due to lack of time and resources, the present study was carried out only in Surat city. Inspite of this limitation the efforts are made to make this report genuine, accurate, and socially relevant.

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A Study on Service Quality of Indigo Airlines

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Abstract

As service quality has become increasingly important to producers/ suppliers' strategies its assessment has become increasingly critical. Several attempts have been made to measure it. Explication and measurement of quality present problems for researchers. Poor service quality is a familiar experience for many of us as consumers and managers The need to improve its measurement and control, is a common theme of the service management literature. This paper investigates the service quality of Indigo airlines in India's domestic market and explores the gap between the customers' expectations and customers' perceptions regarding various service quality factors of Indigo Airlines..

Introduction

It is not sufficient for an organization to broadcast that it cares about its customers unless it can demonstrate customer care through action. Changes may entice customers to enter the premises but the quality of the service experience will determine the development of customer loyalty. There is a shift from telling customers about the benefits of the product or service to listening to what customers say they require. This relies on gathering feedback from customers that is often highly subjective and difficult to quantify. More importantly, the data must be translated into action in the form of superior service, to retain customers, improve market reputation and thereby to remain viable. Authority is delegated to middle and lower levels of the organization and is accompanied by empowerment of workers. This indicates that management recognises that workers have an inherently high and sensible capacity to run things well, given an organisational climate that encourages risk-taking and innovation and supports a customer service focus.

Customer satisfaction is therefore a primary goal of process improvement programs. So how satisfied are our customers? One of the best ways to find out is to ask them using customer satisfaction surveys. These surveys can provide management with the information they need to determine their customer's level of satisfaction with their service quality. This project includes details on designing your own customer's satisfaction questionnaire, tracking survey results and turn survey data into useful information.

Various sets of questionnaire have been prepared to know the passenger satisfaction in relation to the service quality of the IndiGo airline. A detailed survey of the consumers was carried to find out service quality and passenger satisfaction in IndiGo airline.

Literature Review

Parasuraman et al. (1985) developed a conceptual model of service quality. It is a study conducted on four service categories such as retail banking, credit card, securities brokerage and product repair and maintenance. Moreover, the nature and results of the service act are more tangible for product repair and maintenance services to a greater extent than the other two types of services.

Dabholkar et al. (2000) discussed the application of the chronological framework in understanding and predicting service quality and its consequences. They found that factors relevant to service quality are better conceived as its antecedents rather than its components and that customer satisfaction strongly mediates the effect of service quality on behavioral intentions.

Frost and Kumar (2000) explored the extent to which the construct service quality plays in an internal marketing setting. A conceptual model known as the 'Internal Service Quality Model' was designed based on the original 'GAP Model' developed by Parasuraman. The model evaluated the dimensions, and their relationships, that determine service quality among internal customers (front- line staff) and internal suppliers (support staff) within a large service organization, namely, Singapore Airlines.

Nitin Seth and Deshmukh (2005) examined nineteen service quality model reported in the literature from the year 1984 to 2003. This paper clearly defined that service quality outcome and its measurement is dependent on some factors like type of service setting, situation, time, need and furthermore customer expectations towards particular services are also changing with respect to factors like time, increase in the number of encounters with a particular service and competitive environment.

Valarie A. Zeithaml and Malhotra (2005) conceptualized, constructed, refined, and tested a multiple-item scale (E-S-QUAL) for measuring the service quality delivered by Web sites on which customers shop online. Two stages of empirical data collection revealed that two different scales were necessary for capturing electronic service quality. The basic E-S-QUAL scale developed in the research is a 22-item scale of four dimensions: efficiency, fulfillment, system availability, and privacy. The second scale, E-Rec S-QUAL is salient only to customers who had non routine encounters with the sites and contains 11 items in three dimensions: responsiveness, compensation and contact.

Girish and Kiran (2006) investigated passengers expectations and perceptions of Air Mauritius by using the SERVQUAL model. The findings allowed the airline to emphasize the right service and dimensions in its marketing communications to different target markets. Service and branding strategies should reflect the cultural and social background of the traveller. Therefore, it is important to analyse the demographics characteristics of passengers of airlines expectations and their service.

Research Design

The report is based on exploratory research design. In this report both primary and secondary data are used. Primary data was collected by questionnaire instrument and secondary data from various sources like company website, reference books, etc.

a) Sampling Unit:

The basis unit containing the element of the population to be sampled is known as sampling unit. In this survey every passenger of indigo airlines is sampling unit.

b) Time & Place:

Time: 2 months Place: Surat

c) Type of Sampling:

In this report non-probability sampling (convenience sampling) design is used.

d) Sample Size:

In this report 200 sample size (Respondent) is consider from total population of the passenger.

e) Analytical Tools:

Analytical tools play an important role in any research. Charts are used for the analysis of quantitative data. Microsoft Excel is very important and effective tool for this work. Calculations, functions and formulae in excel are useful for this work. Secondary data was also collected from various sources and used for the comparison of service quality of Indigo with other airlines using charts and graphs.

3. Data Analysi

Demographic Profiles of the Respondents: The table below shows the demographic Profiles of the Respondents:

<center>**Table 1: Demographic Profiles of the Respondents (Total Number=120)**</center>

Factor	Category	Number	Percentage
Flight Class	First	13	11
	Business	22	18.2
	Economic	85	70.8
Purpose of the trip	Company Business	29	26.7
	Government Work	16	13.2
	Studying	10	8.5
	Visiting Family	24	20.1
	Tourism	32	24.1
	Medical Purposes	9	7.4
Gender	Male	68	56.8
	Female	52	43.2
Age	26-35	8	6.6
	36-45	64	53.3
	46-59	33	27.5
	60 or more	15	12.5

Table 1 shows that 56.8 percent of them are male and the remaining 43.2 percent are females. Majority of the respondents lie between ages 36 and 45 constituting 53.3 percent of the respondents. The purpose of the trip is mainly for company business and tourism. Most of the respondents have flown in Economic Class, constituting 70.8 % of the total respondents.

Gap analysis of attributes of tangibility: In this study tangibility refers to the physical surroundings and facilities provided by the airlines. The attributes of tangibility taken for measuring the gap analysis are- employees having a neat professional appearance, visually appealing materials associated with the service, modern equipments and visually appealing facilities. The table below shows the Gap Analysis between Customer Expectation and Customer Perception of Various Attributes of Tangibility:

<center>**Table 2: Gap Analysis between Customer Expectation and Customer Perception of Various Attributes of Tangibility**</center>

Tangibility	Expectations	Perceptions	Gaps
	Means	Means	
Employees have a neat professional appearance	4.50	4.63	+0.13
Visually appealing materials associated with the service	4.18	3.96	- 0.22
Modern Equipments	3.73	2.58	- 1.15
Visually appealing facilities	3.91	3.59	- 0.32

Table 2 shows the gap analysis between Customer expectation & Customer perception of tangible dimensions. The highest gap is observed for modern equipments (-1.15) followed by visually appealing facilities (- 0.32) and visually appealing materials associated with the service (-0.22). Negative gaps show that the company should focus more on above dimensions and should make improvement on above dimensions of services so that gaps can be filled. In the case of 'employees having a neat professional appearance', the dimension gap is positive which shows that the customers are satisfied with the professional appearance of the employees.

Gap Analysis of Various Attributes of Reliability: Reliability here refers to airline's ability to perform services at the promised time, dependability in handling customers' service problems, Maintaining error-free records and providing services as promised. The table below shows the Gap

Analysis between Customer Expectation and Customer Perception of Various Attributes of Reliability:

Table 3: Gap Analysis between Customer Expectation and Customer Perception of Various

Reliability	Expectations	Perceptions	Gaps
	Means	Means	
Performing services at the promised time	4.62	4.68	+0.06
Dependability in handling customers' service problems	4.55	3.17	- 1.38
Maintaining error-free records	4.83	4.29	- 0.54
Providing services as promised	4.76	4.50	- 0.26

Attributes of Reliability

Table 3 shows the gap analysis between Customer expectation & Customer perception of Reliability dimensions. The highest gap is observed for Dependability in handling customers' service problems (-1.38) followed by Maintaining error-free records (- 0.54) and Providing services as promised (- 0.26). In the case of 'Employees Performing services at the promised time', the dimension gap is positive which shows that the customers are satisfied with the performance of the services at the promised time by the employees.

Gap Analysis of Various Attributes of Responsiveness: The attributes of responsiveness taken for studying gap analysis are- prompt services to customers, keeping customers informed about when services will be performed, willingness to help customers and readiness to respond to customers' requests. The table below shows the Gap Analysis between Customer Expectation and Customer Perception of Various Attributes of Responsiveness:

Table 4: Gap Analysis between Customer Expectation and Customer Perception of Attributes of Responsiveness

Responsiveness	Expectations Means	Perceptions Means	Gaps
Prompt services to customers	4.26	4.09	- 0.17
Keeping customers informed about when services will be performed	4.48	3.25	- 1.23
Willingness to help customers	4.55	4.39	- 0.16
Readiness to respond to customers' requests	3.49	2.40	- 1.09

Table 4 shows the gap analysis between Customer expectation & Customer perception of Responsiveness dimensions. The highest gap is observed for keeping customers informed about when services will be performed (-1.23) followed by Readiness to respond to customers' requests (- 1.09) and Prompt services to customers (- 0.17). All the dimensions of Responsiveness have shown negative gaps which means that the company has to do a lot to improve its responsiveness by working out on all the dimensions of responsiveness.

Gap Analysis of Various Attributes of Assurance: The attributes of responsiveness taken for studying gap analysis are employees having knowledge to answer customer questions, making customers feel safe in their transaction, employees instilling confidence in customers, employees are consistently courteous. The table below shows the Gap Analysis between Customer Expectation and Customer Perception of Various Attributes of Assurance:

Table 5: Gap Analysis between Customer Expectation and Customer Perception of Attributes of Assurance

Assurance	Expectations Means	Perceptions Means	Gaps
Employees have knowledge to answer customer questions	4.64	3.56	- 1.08
Making customers feel safe in their transaction	4.62	4.51	- 0.11
Employees instill confidence in customers	4.55	4.59	+0.04
Employees are consistently courteous	4.66	4.42	- 0.24

Table 5 shows the gap analysis between Customer expectation & Customer perception of Assurance dimensions. The highest gap is observed for Employees have knowledge to answer customer questions (-1.08) followed by employees being consistently courteous (- 0.24) and Making customers feel safe in their transaction (- 0.11). In the case of 'employees instilling confidence in customers', the dimension gap is positive which shows that the customers are satisfied with the employees instilling confidence in the customers.

Flight booking procedure of IndiGo Airline :

Flight booking procedure	Frequency	Percent	Valid Percent	Cumulative Percent
Highly Satisfied	109	53.2	53.2	53.2
Satisfied	63	30.7	30.7	83.9
Neutral	28	13.7	13.7	97.6
Dissatisfied	2	1.0	1.0	98.5
Highly dissatisfied	3	1.5	1.5	100.0
Total	205	100.0	100.0	

From the data it is analysed that out of 205 passengers, 64 of them are highly satisfied and out of 205 passenger 92 of them are Satisfied with the Pricing of Tickets for IndiGo Airlines, 42 passenger are Neutral only 4% passengers (7people) are dissatisfied with Pricing of Tickets .

This shows that most of the customers are satisfied with the fact that IndiGo has set his Flight Ticket price very reasonable

Conclusions

Customer satisfaction occurs when the perceived service quality of the customers is more than the expected service quality of the customers. This will enable the management to differentiate their brand from the other airlines in terms of service quality. Airlines should develop strategies that will enhance positive behavioral intentions. Indigo airlines has been able to meet the expectations of the customers regarding performance of the services at the promised time, instilling confidence in the customers, understanding the needs of the customers and regarding convenient business hours. But the airlines has to improve more on all the other attributes of Tangibility, Reliability, Responsiveness, Assurance and Empathy so that the customer's expectations are met on its overall service quality.

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A Study on Perception of Youth Having Healthy Food

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Introduction

Any material that an organism consumes for nutritional support is considered food. Food is typically derived from plants, animals, or fungi and includes vital nutrients such proteins, lipids, carbs, and vitamins and minerals. An organism consumes the material, which is then absorbed by the organism's cells to supply energy, sustain life, or promote growth. Different animal species have distinct eating habits that meet the demands of their own metabolisms. These feeding habits have frequently evolved to fill ecological niches in particular geographic settings. Due to their extreme adaptability, omnivorous people have learned to survive in a variety of environmental conditions. The industrial food sector, which produces food through intensive agriculture and distributes it through intricate food processing and distribution systems, provides the majority of the necessary dietary energy. Due to the heavy reliance of conventional agriculture on fossil fuels, the food and agricultural system is responsible for up to 37% of global greenhouse gas emissions, making it one of the main contributors to climate change. Countless further social and political issues, such as access to food, population growth, sustainability, biological diversity, economics, and water supply, are significantly impacted by the food system. International organizations such as the Food and Agriculture Organization, World Resources Institute, International Food Information Council, International Association for Food Protection and World Food Programmed monitor food security and safety.

Classification of Food:

Anything that an organism consumes to satisfy its nutrition and energy needs is considered food. Animals can eat it raw, cooked, or in a formula for development, well-being, or enjoyment. The primary ingredients of food are water, lipids, proteins, and carbs. Food also contains organic compounds (like vitamins) and minerals (like salts). Utilizing photosynthesis, plants, algae, and certain microbes create their own food molecules. Water has been described as a food in and of itself and has available in many cuisines. Fiber and water both have low calorie densities.

Food Sources:

Food creates a web of interlocking chains in a particular ecosystem, with apex predators at the top and primary producers at the bottom. The web also consists of detrusors, which consume

debris, and decomposers, which disintegrate dead creatures. Algae, plants, bacteria, and protests that get their energy from sunlight are examples of primary producers. The herbivores that eat the trousers are the primary consumers, and the carnivores that eat those herbivores are the secondary consumers. Some species are omnivores because they consume both plants and animals, such as the majority of mammals and birds. The apex predators, or the animals in an ecosystem without known predators, mark the end of the chain. A common belief is that humans are the top predators. Being omnivores, humans can survive on fruits, vegetables, cooked meat, dairy products, eggs, seaweed, and mushrooms. More food energy is produced globally from cereal grains than from any other kind of crop, making them a staple diet. 87% of the grains produced globally are maize, or maize, wheat, and rice. 55% of the world's crops are grown for human consumption, with 36% being grown for animal feed and 9% being used to make biofuels. Bread, wine, cheese, and yoghurt are examples of foods that are fermented using the help of fungi and bacteria.

Sunlight and soil:-

For almost all life on Earth, photosynthesis is the ultimate source of food and energy. For certain bacteria, algae, and plants, it serves as their primary food supply. All creatures, from coral to lions that rely on things higher up the food chain would cease to exist without it. Water and carbon dioxide in the air or soil are converted into glucose and oxygen by the sun's energy. After that, the glucose is stored as a source of energy and the oxygen is released. Important minerals and nutrients are also taken up by plants from the soil, water, and air. The three main nutrients that plants require to survive are carbon, oxygen, and hydrogen, which are taken up from the air or water. Nitrogen, phosphorus, and potassium are the three basic nutrients that plants absorb from the soil to thrive. Other essential minerals include calcium, sulphur, magnesium, iron, boron, chlorine, manganese, zinc, copper, molybdenum, and nick.

Plants:-

Plants can be classified as food sources in several ways, including seeds, fruits, vegetables, grains, legumes, and nuts. Where plants fit into these categories varies; some are botanically classified as fruits (e.g., tomato, squash, pepper, aborigine) while others are classified as vegetables (e.g., peas). In theory, seeds, nuts, and grains are considered fruits since they are edible food if the portion consumed is derived from the reproductive tissue. When it comes to food preparation, fruits are typically thought of as the leftovers of botanically defined fruits after grains, nuts, seeds, and fruits that are utilised as vegetables have been eliminated. Cereal grains (oats, wheat, rice, corn, barley, rye, sorghum and millet) belong to the Pinaceae (grass) family, while pulses are a member of the Fabaceae family. Grains are seeds that humans eat or harvest.

Stone fruits (cherries and peaches), pome fruits (apples, pears), berries (blackberries, strawberries), citrus fruits (oranges, lemons), melons (watermelon, cantaloupe), Mediterranean fruits (grapes, fig), and tropical fruits (banana, pineapple) are further categories for fleshy fruits,

which can be distinguished from dry fruits like grain, seeds, and nuts. Any other edible portion of the plant, such as the roots, stems, leaves, and flowers, is referred to as a vegetable.

Animals: -

Animals are either directly or indirectly used as food. Meat, eggs, seafood, and dairy items like milk and cheese fall under this category. Since they include every necessary amino acid required by the human body, they are regarded as complete proteins for human consumption and are a significant source of protein. The protein content of a 4-ounce (110 g) steak, chicken breast, or pork chop is around 30 grammes. A large egg contains 7 grammes of protein, a 4-ounce (110 g) portion of cheese contains around 15 grammes, and a cup of milk contains approximately 8 grammes. Animal products also contain calories, fat, minerals (such as zinc, iron, calcium, and magnesium), and vital vitamins (such as B12).

Animal milk generated by mammary glands is one type of food product that is consumed or processed into dairy products in various cultures (cheese, butter, etc.). In addition, bees create honey, reduced nectar from flowers that is a common sweetener in many cultures, while birds and other animals lay eggs that are frequently consumed. Some cultures employ blood in stews like jugged hare, while others use it in blood sausage, as a thickening for sauces, or in a salted, cured form during times of food scarcity.

Fun Facts about Healthy Food:-

• Minerals make healthy skin and strong bones and teeth

• Fiber helps your body digest food. ...

• Vitamins help your body stay healthy and fight disease. ...

• Fats in milk products, meat and fish help your body build healthy nerves and fight off disease.

• Protein, which is found in meat, milk products, beans and fish, builds muscles and repairs damage.

Advantages of Healthy Food:-

Weight Loss or Maintenance

Blood Sugar Control

Decreased Risk of Heart Disease

Decreased Cancer Risk

Support for Brain Health

Research Methodology:

Problem Statement:-

The main problem of today's young generation is eating a poor quality diet highin junk food is linked to a higher risk of depression, digestive issues, heart disease and stroke, type 2 diabetes, cancer, and early death.

The main reason or problem why people select healthy food is:-

1) They will gain weight.

2) Not getting any nutrition.

3) Depression and anxiety.

4) Digestive problems.

5) Heart problem. Etc.

Research Objective:

Research methodology is the specific procedures or techniques used to identify, select, process, and analyses information about a topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability.

The methodology section answers two main questions:

How was the data collected or generated?

How was it analyzed?

Primary Objective: -

The primary objective for this research is to check perception of young generation for healthy food.

Secondary Objective:

• To study the perception of youngster

• To identify barriers that affect youth for having healthy food.

• To which age group is more concern about healthy food?

Research Design:-

In this research we are using descriptive research design. Descriptive design gathers analyze and interpret the collected data to come at present the information accurately.

Sampling:

Sampling Technique:

In this project we have used Non-probability convenience sampling.

Sampling size:-

Sample size of this research paper will be 100 respondents.

Sampling Frame:

In this project our sample elements will be young people which are 18 to 35 (By WHO).

Data Collection source:-

Primary data

Primary data is collected directly from the target respondents; it will be collected through Questionnaire.

Secondary Data:

Secondary data is the data already collected and published for purposes other than the specific research needs at hand. The secondary data sources primarily include existing literature published in the journals and magazines. The secondary data that used in this research are related to the existing literature concerned with this research problem.

Survey Method:-

Questionnaire is been used for collection of data.

Survey Tool:-

Google form is been used to collect to collect data from respondents.

Data collection method:-

In this report the data collected through Google forms will be analyzed by techniques: - Chart, Graph, Percentage, hypothesis testing & Tabulation.

Objective - To check perception of young generation for healthy food ...

Following particulars according to your eating habits. (For health consciousness)

	I choose food carefully to ensure good health.	I consider myself as a health-conscious consumer	I often think about health-related issues	I am prepared to do anything that is good to health	I often dwell on my health
■ Strongly agree	29	14	22	22	15
■ Agree	16	24	20	23	22
■ Neutral	53	21	50	19	26
■ Disagree	2	40	6	33	32
■ Strong Disagree	0	1	2	3	5
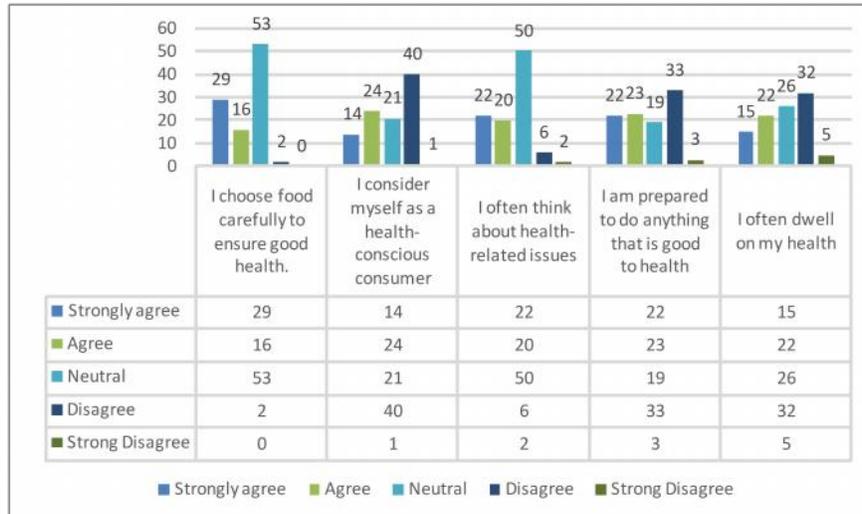
Test Statistics Kruskal-Wallis Test					
	Q1 I choose food carefully	Q1 I choose myself as health conscious	Q1 I often think about health related issue	Q1 I prepare to do anything that is good to health	Q1 I often dwell on my health
Chi-Square	7.124	10.148	7.456	10.091	7.465
df	1	1	1	1	1
Asymp. Sig.	.008	.001	.006	.001	.006
a. Kruskal Wallis Test					
b. Grouping Variable: Age					

Specifically, the tendencies to choose food carefully, identify oneself as health-conscious, frequently think about health-related issues, prepare to do anything for health, and often dwell on personal health significantly differ between the two age groups (all p-values < 0.01).

Objective: To assess the knowledge, attitudes, and behaviors related to healthy food among individuals.

To which level of income group is concern more about healthy food?

4. Rate following particulars according to your eating habits. (Knowledge about healthy food)
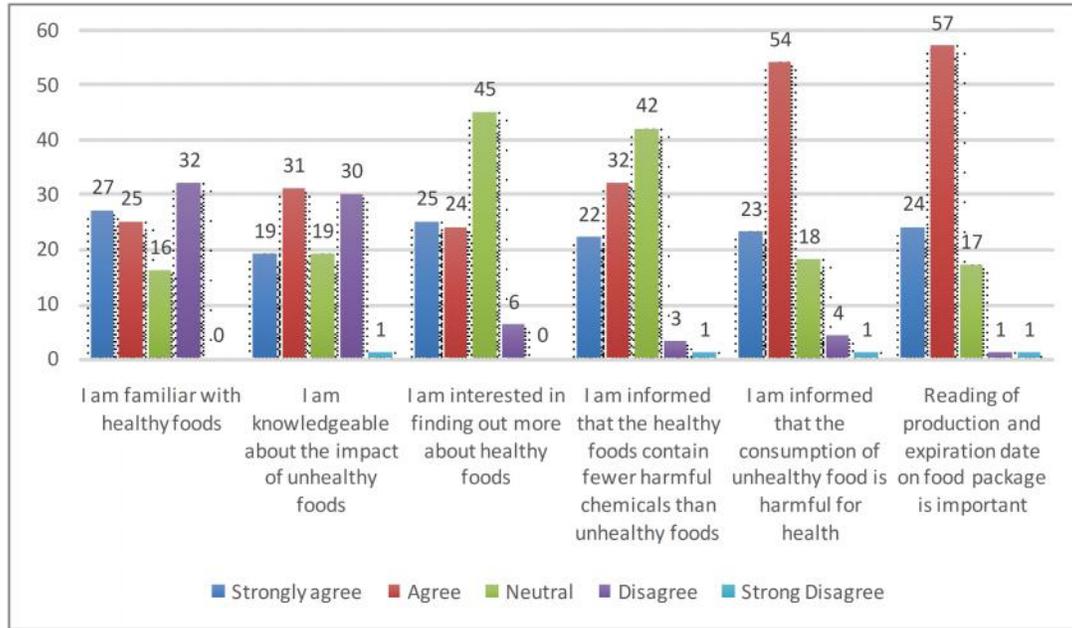
Robust Tests of Equality of Means

One way Anova					
		Statistic	**df1**	**df2**	**Sig.**
Q1 I am familiar with healthy food	Welch	.	.	.	.
	Brown-Forsythe	.	.	.	.
Q2 I am knowledgeable about impact of unhealthy food	Welch	6.007	3	4.697	.045
	Brown-Forsythe	4.102	3	3.664	.113
Q3 I am interested in finding more about healthy food	Welch	5.854	3	4.869	.045
	Brown-Forsythe	5.269	3	10.843	.017
Q4 I inform that healthy food contain fewer chemicals	Welch	1.302	3	4.605	.377
	Brown-Forsythe	1.028	3	2.929	.493
Q5 I inform that consumption of unhealthy food is harmful for health	Welch	.525	3	4.581	.686
	Brown-Forsythe	.251	3	1.555	.857
Q6 Reading of production and expiration date on food package is important	Welch	.607	3	4.557	.641
	Brown-Forsythe	.454	3	2.551	.737
a. Asymptotically F distributed.					
b. Robust tests of equality of means cannot be performed for Q2 I am familiar with healthy food because at least one group has 0 variance.					

- Test not application-one group have 0 variance.

- A significant difference ($p < 0.05$) between groups, indicating variations in knowledge about the impact of unhealthy food & in interest in finding more about healthy food.

- Both Welch and Brown-Forsythe tests show no significant difference ($p > 0.05$) between groups.

Benefits of the Study:

This research will shows us the thinking of youth generation for having healthy food this study will also reflect why they go for this type of foods. Shows the perception of young people.

Limitation of the study:

1. **Subjectivity:** Perception is subjective and varies from person to person. Youth may have different perceptions of what constitutes healthy food, making it challenging to draw overarching conclusions.

2. **Social desirability bias:** Youth may provide responses that they feel are socially acceptable or desirable, rather than reflect their true perceptions or behaviors related to healthy food.

3. **Lack of generalizability:** Findings from studies on the perception of youth having healthy food may not be generalizable to all youth populations, as perceptions can differ based on factors such as socio-economic status, cultural background, and geographic location.

4. **Limited understanding of dietary choices:** Studying perception alone may not provide a comprehensive understanding of the complex factors that influence the dietary choices of youth, such as access to healthy food options, food preferences, and family influences.

5. **Self-reporting bias:** Research relying on self-reported data may be subject to bias, as youth may not accurately recall or report their perceptions and behaviors related to healthy food.

6. **Lack of long-term impact assessment:** Understanding the immediate perception of youth towards healthy food may not provide insights into their long-term dietary habits and health outcomes. Longitudinal studies may be necessary to address this limitation.

Conclusion:

- It is important to have healthy nations, and the health of the nation depends on healthy food consumption by the youth of that nation. The current study explored the effect of health consciousness and knowledge about healthy food that impact the attitude towards healthy food.

- Nationally, diverse socio-economic factors significantly influence dietary choices & consuming a healthy food.

- At the state level, regional variations emerge.

- Globally, the study contributes to the broader discourse on youth health, informing policies to address nutritional challenges at an international scale.

- The study provides valuable insights into the demographic distribution, health consciousness, knowledge about healthy food, and social influences on eating habits. Overall, there is a positive inclination towards health-conscious behaviors and an awareness of the importance of healthy food. Tailored interventions considering age-specific factors and leveraging social influences could be effective in promoting healthier eating habits among the surveyed population.

Findings underscore the need for comprehensive educational programs to empower youth with the knowledge and tools for making informed dietary decisions

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Factors Affecting the Subscription of Netflix

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Abstract

OTT is swiftly gaining popularity as a viable replacement for traditional cable television programmes. Because today's entertainment audiences value immediacy and accessibility, Netflix took use of the online streaming platform and launched streaming online services in 2009, eliminating the concept of renting DVDs to customers. The most successful online streaming service, Netflix, began providing quality contents on the internet, and after the company's enormous success, they began to raise their market capital to billions, and Netflix began to concentrate on its unique contents, so they actually began to produce their own original contents and spent billions on the original contents in order to maintain a stronger position in the market. To investigate the most important element/factor that influences Netflix subscribers.

The statement of the problem of this study is to make comparative "Factors affecting the subscription of Netflix". The researcher employs a descriptive research design for their study. From adolescence through adults, every demographic group has been studied by the researcher. The researcher readily chose 150 respondents from the chosen Surat city area. Google Forms' structured questionnaire is the tool utilized to collect the data for this study. The information sheds light on the surveyed people's preferred and least preferred genres. The most popular genres were comedy and drama, while documentaries and horror were the least popular. OTT platforms are well-liked by the people surveyed, with 43.7% of them being used daily. According to the majority of respondents, OTT platforms provide a diversity of content, which may contribute to users' engagement.

Key Words: NETFLIX, OTT,subscription, comparative, Factors affecting

INTRODUCTION:

Over the top, or OTT, is a technology that allows content owners to manage the process of providing video content across many devices via the internet. OTT is swiftly gaining popularity as a viable replacement for traditional cable television programmes. This new OTT platform streaming trend is very popular among teens due to the availability of new web series, TV episodes, play stations, and so on! The understanding or definition of OTT has crossed the potential of watching preloaded television episodes or any type of OTT content an endless number of times. All of this is organised in a big and unified collection of multilingual films.

LITERATURE REVIEWS:

(Mehta, Kothiya, & Hepaliya, 2022) There is no significant association between Gender and the Frequency of viewing shows on Netflix. The main reason for non-usage was High charges. Amazon Prime was a major competitor to Netflix among paid streaming services. One of the main reasons was their low subscription fee and selection of shows.

(E. & N., 2020) The emergence of OTT would harm the penetration of cable TV in India. Traditional TV should prepare for a paradigm shift brought on by OTT platforms. Along with video streaming, the online gaming market in India is projected to become a billion-dollar industry by 2020.

(Jain, 2021) With the boom in the technical specifications of smartphones, the entertainment industry is performing well with OTT services. The pandemic Covid 19 has contributed a large to the subscription of popular OTT series. As the trends are observed, the market of OTT will grow rapidly in the coming years too.

(Puthiyakath & Goswami, 2021) The study used niche analysis to understand the competition between TV and OTT in the Indian media landscape. It found that OTT overpowers TV substantially in all dimensions except for social interaction. The strong superiority of OTT is due to its unique nature of allowing users to watch what they want when they want. Study shows that OTT partially displaces TV in the relaxation dimension of gratification. This could be due to the fact that people in India tend to watch TV as a group with their family and friends rather than relying on news or information for their relaxation. OTT provides higher levels of gratification except in social interaction, according to a study by Rangarajan and co-authors.

(Rahman & Arif, 2021) The key findings of this study suggest that the respondents use smartphones primarily to binge-watch on Netflix. The availability of a vast range of shows has been attributed as the primary motivational factor, while the "one more episode" syndrome has been flagged as the biggest challenge of binge-watching on Netflix during the COVID-19 pandemic. This study happens to be one of the few pieces of research exclusively focused on Netflix binge-watchers amidst the COVID-19 pandemic.

Statementof theProblem:

To investigate the most important element/factor that influences Netflix subscribers.

The statement of the problem of this study is to make comparative "Factors affecting the subscription of Netflix"

Objectives of the Study:

1. To identify the genre that people usually prefer to watch.

2. To find the time devoted to online streaming platforms.

3. To find out the association between the factors affecting the subscription of Netflix and the demographic factors of the respondents.

4. To know if current users are willing to use Netflix in the future also.

3.4 Needof theStudy:

After its debut on January 6, 2016, Netflix became extremely popular in India. However, after the pricing was announced and no Bollywood movies were made available on the app, people decided not to subscribe to the service. According to Reed Hastings, Netflix is targeted at the elitists with a western mindset who own iPhones in India. From its Los Angeles headquarters, Netflix makes choices about its content. It creates content that can be watched in all 190 of the countries where it does business. They attempt to avoid participating in regional content because doing so would be very expensive. In South Asia, particularly India, the internet speeds are not very promising for online live video streaming in Ultra HD resolution. Likewise, there have been numerous such factors that have contributed to the subscription of Netflix in India.

3.5 ResearchDesign:

The research design that is used by the researcher is Descriptive Research Design.

Data collection: There are major two sources of data collection

Primary data: Primary data is pure and original and collected for a specific purpose, and may be published.

Secondary data: The opposite of the main data is secondary data. They have already been compiled and released (by some organizations, for instance).

Sampling design: The sampling strategy is a thorough description of the measurements that will be made. A sampling plan specifies in great depth what measurements will be made when, on what material, how, and by whom.

Target Population: The researcher has focused on every demographic area from youth to adults.

Sample size: A group of subjects chosen from the general population who are thought to be a representative sample size for that particular research is referred to as the sample size. Here the researcher has selected 150 people conveniently from the selected region of SURAT city.

Sample site: For this research, the entire Surat city is covered.

Data collection instrument: The data collection instruments used for this research is a Structured Questionnaire through google forms.

Sampling methods:

For the purpose of this research, theresearcher has used convenience sampling, which is a non-probability sampling technique for collecting data.

Scope of the study:

- This study audits the concerns regarding the usage patterns and frequency of usage.

- This study gives proper data on users and non-users and their usage purposes.

- It can be helpful for Netflix to make changes in prices and other streaming benefits offered.

 Statistical tool used: Pearson's Chi-Square Test.

 Data analysis tool: SPSS by IBM

DATA ANALYSIS

Hypothesis testing:

H_0**:** There is no significant relation between demographic variables and factors affecting subscription of Netflix

H_1**:** There is significant relation between demographic variables and factors affecting subscription of Netflix

Table 1 Chi-Square test value of hypothesis between demographic variables and factors affecting the subscription of Netflix

Factors	Age	Gender	Area	Marital Status	Family Members	Earning Members	Employment	Monthly Income
Variety of Content	0.790	0.393	0.611	0.538	0.885	0.762	0.403	0.461
Subscription fee	0.489	0.138	0.915	0.107	0.808	0.533	0.806	0.270
User-friendly interface	0.561	0.487	0.234	**0.033**	0.522	0.659	0.938	0.271
Delay in Audio and Subtitles	0.874	0.460	0.719	0.970	0.632	0.355	0.589	0.367
Safety of Transaction	0.948	0.211	0.909	0.944	0.965	0.863	0.996	0.931
Server Down issue	0.494	0.205	0.166	0.760	0.067	0.296	0.373	0.891
Supports all type of devices	**0.036**	**0.004**	0.952	0.373	0.793	0.811	0.486	0.874
Non-availability of internet	0.975	0.937	0.951	0.276	0.262	0.438	0.694	0.939
Speed of transaction	0.784	0.390	0.821	0.980	0.868	0.610	0.576	0.952
HD Video Quality	0.764	0.625	0.274	0.628	0.871	0.203	0.583	0.448
No advertisements during streaming	0.812	0.119	0.596	0.655	0.883	0.096	**0.003**	0.433
Price is affordable/Budget friendly	0.766	0.499	0.984	0.853	0.817	0.321	**0.000**	0.448
Personalized experience	0.735	0.592	0.988	0.704	0.267	0.956	**0.000**	0.630
Multiple login option	**0.000**	0.485	0.641	**0.002**	0.400	0.271	**0.000**	0.681
Content available in multiple languages	0.888	0.130	0.693	0.737	0.661	0.701	0.862	0.964
Netflix Originals (i.e. produced by Netflix and is only available on Netflix)	0.457	0.460	0.851	0.859	0.157	**0.024**	0.909	0.846

FINDINGS

Serial No.	Objective	Findings
1	To identify the genre that people usually prefer to watch.	The most preferred genre was comedy, with 73.5% of respondents indicating that they preferred this genre. Overall, these findings suggest that comedy, drama, and thriller are the most popular genres of content on OTT platforms among the surveyed population, while documentaries, sci-fi, and horror are the least popular genres.
2	To find the time devoted to online streaming platforms.	The majority of respondents reported spending between 1-2 hours per day using OTT platforms, with 35.8% spending 1 hour and 37.7% spending 2 hours. A smaller percentage of respondents reported spending more than 3 hours (13.9%) or 3 hours (12.6%) per day on OTT platforms. Overall, the results suggest that individuals use OTT platforms for a moderate amount of time each day.
3	To find out the association between the factors affecting the subscription of Netflix and the demographic factors of the respondents.	There is a significant relationship between • Marital status and user-friendly interface • Age, Gender and supports all type of devices • Employment and No advertisement during streaming • Employment and budget friendly • Employment and personalized experience • Age, Marital status, Employment and multiple login option Earning members and Netflix originals
4	To know if current users are willing to use Netflix in the future also.	82.1% of the respondents are willing to use the platform in the future, while only 2.6% said they would not. 15.2% of the respondents could not say if they would use the platform in the future or not.

CONCLUSION:

The data provides insights into the preferred and non-preferred genres among the surveyed individuals. Comedy and drama were the most preferred genres, while horror and documentaries were the least preferred. OTT platforms are popular among the individuals surveyed, with 43.7% of respondents using them every day. Half of respondents agree that OTT platforms offer a variety of content, which may be a factor in their engagement. The high rate of agreement indicates that respondents usually view the product or service (in this case, Netflix) as being user-friendly.

This study found that most respondents are secure in the security of transactions involving the product or service (in this case, Netflix). This is a sign that the service provider has taken enough precautions to safeguard customer data and financial transactions. The majority of

respondents agree that streaming should not include any advertisements, and the good or service is meeting the requirements of the majority of customers and is well-designed to support a variety of devices. However, some users may be having compatibility problems, so it may be crucial for the provider to look into and resolve these problems.

RECOMMENDATIONS:

- With the pandemic forcing people to stay at home, the demand for online content has increased worldwide. OTT platforms should take advantage of this trend by expanding their services to new markets and offering content in multiple languages.

- Providing niche content can help OTT platforms reach a specific audience that is interested in a particular genre, language, or culture. This can help them gain a loyal following and differentiate themselves from other platforms.

- With the increasing popularity of VR, OTT platforms can offer VR content that provides an immersive experience to the viewers.

- With so much content available online, personalization features such as recommendations and personalized playlists can help OTT platforms provide a better user experience and keep subscribers engaged.

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Effects of Spirulina Supplementation on Growth Performance in Shrimp

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Abstract

The nutrient-dense microalga spirulina has become well-known as a functional feed additive in aquaculture because of its high protein, vitamin, and bioactive chemical components. In this study, the effects of supplementing shrimp with spirulina are examined, with particular attention paid to the feed conversion ratio (FCR), ABW and total biomass production. According to the results, growth indices have significantly increased, demonstrating better nutrition absorption and stress tolerance. Increased protein deposition and antioxidant activity in shrimp fed spirulina are revealed by the biochemical analysis, highlighting the plant's potential as a sustainable and efficient feed supplement. This study emphasizes how Spirulina benefits aquaculture by providing a viable strategy to maximize shrimpL. vannamei production and lessen reliance on traditional feed sources.

Keywords: *Shrimp culture, Microalgae Spirulina potential, feed additive, growth performance.*

Introduction

The aquaculture industry is a vital component of global food security and economic growth, particularly in coastal and developing regions. Shrimp farming, a major segment of this industry, has seen tremendous growth over the past few decades. However, with this growth come significant challenges, primarily in disease management and sustainability. Disease outbreaks can devastate shrimp populations, leading to severe economic losses and threatening the livelihoods of farmers. In light of these challenges, there is an urgent need for effective, sustainable solutions to enhance shrimp health and resilience. One promising approach is the use of natural suppliment and immunostimulants. Today, I will be focusing on Spirulina, a blue-green microalga renowned for its rich nutritional profile and health benefits.

Spirulina, a filamentous blue-green microalga, is an excellent source of plant protein and could replace expensive animal-derived proteins in shrimp feed. *Spirulina* is also gaining attraction as a sustainable and healthy supplement in aquaculture feeds, and can be used for integrated strategies treating wastewater, including effluent from shrimp culture activities. The protein from Spirulina plays an important role in this scenario. In Aquaculture the brackish water Shrimp Species *Penaeus monodon, Litopenaeus vannamei* are one of the most commercially important

culture species in globally. The growth of Shrimp culture is depends on protein sources that can reduce the pressure on fishmeal and effective sustainable supplement or multipurpose healthy contents in feed. So here we carried out the study on Spirulina as a feed additives or feed mixer in shrimp culture.

However, there are obstacles to sustainable shrimp farming, such as the high cost of feed, environmental effects, and the requirement for efficient growth promoters and disease resistance strategies (Abo-Taleb et al., 2020; Alprol et al., 2021). The growing demand for aquaculture products worldwide has made shrimp farming a crucial sector within the industry, especially with species like *Litopenaeus vannamei* dominating production due to their adaptability and market value (Sharawy et al., 2022; Li et al., 2018).

A possible tactic in this regard is adding functional supplements, such as spirulina (Arthrospira platensis), to shrimp diets. According to Spínola et al. (2024), spirulina is a nutrient-rich microalga that is popular for its high protein content (up to 60-70% of dry weight) and a variety of bioactive components, such as phycocyanin, vitamins, antioxidants, and important fatty acids. These characteristics help aquaculture species grow more efficiently, have higher feed conversion ratios (FCR), and have stronger immune systems (Mansour et al., 2022; Spínola et al., 2024). Research has demonstrated that supplementing with spirulina enhances tolerance to environmental stresses and infections by improving protein deposition and nutrition utilization as well as upregulating immune-related gene expressions (Mansour et al., 2022).

Spirulina serves as a promising and sustainable feed alternative, tackling essential concerns like the dependence on fishmeal and other traditional feed ingredients that are often unsustainable and expensive. It enhances nutrient efficiency and overall shrimp health, aligning with global efforts to optimize aquaculture production and reduce environmental impact (Spínola et al., 2024).

Biochemical studies show that Spirulina boosts protein accumulation and metabolic enzyme activity, leading to improved nutrient absorption (Kumar et al., 2016; Aquaculture International). The increasing demand for sustainable aquaculture has led to the search for alternative feed ingredients that are both nutritionally rich and eco-friendly. Spirulina, a cyanobacterium known for its high protein content, essential amino acids, vitamins, and bioactive compounds, has become popular as a functional feed additive in aquaculture (Becker, 2007; Journal of Applied Phycology).

Shrimp aquaculture, a key component of global seafood production, encounters issues like high feed costs, nutrient efficiency, and disease outbreaks. Since feed constitutes a large part of production expenses, it's essential to innovate for better feed conversion ratios (FCR) and growth metrics without sacrificing sustainability (Tacon & Metian, 2015; Reviews in Aquaculture). Research has shown that Spirulina effectively promotes growth and health in various aquaculture species. For example, Nakagawa et al. (2000, Aquaculture Research) reported improved weight gain and survival rates in fish fed diets supplemented with Spirulina. In the case of shrimp, particularly Litopenaeus vannamei, partially replacing fishmeal with Spirulina enhanced growth rates and

feed efficiency (González-Félix et al., 2010; Aquaculture Nutrition). These benefits are due to Spirulina's rich content of bioavailable nutrients and bioactive compounds, like phycocyanin and polysaccharides, which provide antioxidant and immunostimulatory effects (Belay, 2002; Journal of Applied Phycology).

Spirulina, a cyanobacterium celebrated for its high protein content, vitamins, and bioactive compounds, has attracted significant interest in aquaculture as a functional feed additive. It offers a promising alternative to conventional feed sources due to its rich nutritional profile and potential to boost the growth performance of aquatic species (Mujahid et al., 2015). Spirulina supplementation has been shown to enhance feed conversion efficiency, growth rates, and stress resistance in various aquaculture species, including shrimp (Hussain et al., 2018; Alagappan et al., 2019). Recent research indicates that Spirulina not only improves the physiological health of shrimp but also increases antioxidant activity and protein deposition, which are vital for overall biomass production (NRC, 2011; Hossain et al., 2020).With the growing demand for sustainable aquaculture practices, Spirulina's use as a feed supplement could mitigate the environmental impact of conventional fishmeal-based feeds (Ogunji et al., 2013). This study aims to explore the effects of Spirulina supplementation on shrimp growth performance, focusing on feed conversion ratio (FCR), average body weight (ABW), and total biomass production. Understanding these effects could provide valuable insights into Spirulina's viability as a sustainable feed ingredient in shrimp farming.

Materials and Method

- After 60 days of Stocking we collected the data from Pond - 1 (control pond), Pond - 2 and 3 (Sample pond).

Experimental diet:

In this experimental diet using commercial branded feed with mixture of spirulina in 5gm\kg and 10gm\kg in sample pond.

Growth trial and feed management:

Growth trials were conducted at Olpad, Gujrat. Feed inputs were pre-programmed assuming the normal growth of shrimp and feed conversion ratio of 1.5. 4 time fed by hand in day. Daily allowances of feed were adjusted based on observed feed consumption and check tray.

Water quality Sampling:

Water quality parameter consist with Temperature, Transparency, pH, Dissolve oxygen, Salinity, Total hardness, calcium hardness, Magnesium hardness, Total alkalinity, Ammonia - N, Nitrate, Nitrite. All parameter check twice in month and maintain to optimum range.

Growth Sampling:

- Average body weight (ABW) $= \dfrac{\text{Total weight of shrimp (gm.)}}{\text{Total no of shrimp}}$

- Average weekly Growth $= \dfrac{\text{Average Body Weight}}{7 \text{ Days}}$

- Survival Rate (%) $= \dfrac{(\text{Final shrimp population} \times 100)}{\text{Initial population}}$

- Feed conversion ratio (FCR) $= \dfrac{\text{Total feed given in culture period}}{\text{Total harvested biomass}}$

Statistical Analysis:

Calculated all data by basic tools.

Result and Discussion

We looked into how supplementing with Spirulina affected the health and growth performance of Pacific white shrimp (Litopenaeus vannamei) raised in semi-intensive aquaculture settings. Over the course of a 10-week trial, shrimp were fed diets with different concentrations of Spirulina, and growth characteristics were tracked.

The findings demonstrated that shrimp provided diets treated with Spirulina grew at noticeably faster rates than shrimp fed control diets devoid of Spirulina supplementation. In particular, compared to the control group, shrimp given the 0.5% and 1% (w/w) Spirulina inclusion levels showed increases in final body weight of 6% and 17%, respectively.

Table: 1. Growth performance evaluation

Parameter	Unit	Pond 1 (Control Pond)	Pond 2 (5 gm/Kg)	Pond 3 (10 gm/Kg)
Stocking Density	M^2	30	30	30
Pond Size	M^2	8000	8000	8000
Final ABW	In gm	23.80	25.22	27.77
ADG	In gm	0.167	0.186	0.218
Survival Rate	%	79	82	86
Conversion Ratio	%	1.39	1.34	1.29
Total Feed	In kg	6319	6650	7445
Total Biomass	In kg	4514	4963	5731

Shrimp fed diets enriched with spirulina also showed a significant improvement in feed conversion ratios (FCR), a sign of higher feed efficiency. When shrimp were fed the 5gm/kg and

10gm/kg Spirulina diet, their FCR decreased by 4% and 8%, respectively, in comparison to the control group. In this research, Pacific white shrimp L. vannamei fed with Spirulina platensis (SM) meal showed an increase growth performance compared to the group of shrimp fed with commercial formulation without spirulina. Findings of this study are in agreement with study of Silva Neto et al. (2012)

Adel et al. (2016) observed that sturgeon juveniles fed with 10% Spirulina showed a growth increase of 57% and an improvement in the FCR of 21%. Another important study by Kohal et al. (2018) reported that the red cherry shrimp showed a dramatic improvement in growth from 70.8 mg to 114.6 mg following the addition of 10% Spirulina to the diet, which represents a gain of 63%, an improvement in the FCR of 15%, and a survival increase from 25.7% on the control diet to 81.3% on the 10% Spirulina diet. Partial substitute of fish meal with S. platensis has showed promising growth in juvenile L. vannamei (Hanel et al., 2007). The admissible level of spirulina meal as the dietary inclusion to replace the fishmeal was about 25% with no harmful effect on the growth of shrimp L. vannamei, and up to 50% of replacement could not affects the feed intake (Sá and Nunes, 2011).

Supplementing the shrimp with spirulina has a significant impact on their health in addition to their growth performance. When shrimp fed diets enriched with spirulina were compared to the control group, they showed lower mortality rates and incidences of shell disease, suggesting improved disease resistance and general robustness. Shrimp may absorb and use nutrients more effectively if their digestive systems are improved by spirulina. However, after 95 days, the shrimp's intestines may appear whiter in the control pond because of less digestion or undigested food, sometimes known as white feces. Thus, it was demonstrated that harmful bacteria such as vibrio were actively present in the control pond and had an impact on the shrimp's digestive tract, whereas in the sample pond, no such effect was seen.

The findings suggest that adding spirulina to shrimp farms could be more beneficial than previous studies. Since spirulina is rich in protein, essential amino acids, vitamins, minerals, and antioxidants, its nutritional makeup has likely been linked to improved health outcomes and increased growth performance. Spirulina is an easy way to get high-quality protein and essential minerals that meet the nutritional demands of shrimp and encourage healthy growth. By reducing oxidative stress, spirulina's antioxidant properties may have also helped to improve the utilization of energy for growth and decrease metabolic losses. According to James et al. (2006), S. platensis also enhanced the intestinal flora in fish, breaking down indigestible feed components to extract more nutrients from the feed and promoting the synthesis of enzymes that transport lipids for metabolism rather than storage. The higher feed utilization pattern in the present study is also justified by the statement. Prior research suggests that the high vitamin, mineral, essential amino acid, linoleic acid, and linolenic acid content of S. platensis in the diet improve growth performance and feed utilization (Roohani et al., 2018).

Conclusion

Finally, spirulina shows promise as a shrimp culture growth booster, including dietary benefits, immunostimulatory effects, and environmental advantages. Further research is needed to determine the economic sustainability of Spirulina inclusion for commercial aquaculture operations, optimize its levels, and evaluate its long-term impacts on shrimp health and performance. All things considered, spirulina is a useful tool for improving shrimp culture's sustainability and growth, advancing ecologically friendly aquaculture methods.

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The Role of Cryptography in Securing the Internet

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Abstract

As the internet becomes an integral part of daily life, ensuring the security and privacy of online activities has never been more crucial. Cryptography provides the foundation for protecting sensitive data, verifying identities, and maintaining the integrity of communications across digital networks. This chapter explores the vital role cryptographic methods play in securing the internet, including encryption techniques that protect information in transit, digital signatures that verify authenticity, and hash functions that ensure data integrity. It also examines the application of secure protocols such as HTTPS and SSL/TLS, which secure online transactions and communication channels. Additionally, the chapter discusses the significance of public key infrastructure (PKI) in establishing trust between users and services. With the advent of new technologies like quantum computing, the future of cryptography faces new challenges, prompting the need for more advanced and secure cryptographic systems. Ultimately, this chapter emphasizes the indispensable role of cryptography in maintaining trust and security within the vast landscape of the internet.

***Keywords:** Cryptography, Internet Security, Data Protection, Privacy, Encryption, Digital Signatures, Hash Functions, HTTPS, SSL/TLS, Public Key Infrastructure (PKI), Identity Verification, Data Integrity, Secure Protocols, Online Transactions, Quantum Computing, Cryptographic Systems, Trust, Authentication, Digital Communications, Cybersecurity*

Introduction

The internet has evolved from a tool for academic communication into a global platform that underpins nearly every aspect of modern life. From online shopping and banking to social media and government services, the internet has become an indispensable part of our daily activities. However, this widespread use has also led to an increase in cyber threats, such as data breaches, identity theft, and cyberattacks. As more personal and sensitive information is exchanged online, the need for robust security mechanisms has never been more urgent.

Cryptography stands as the cornerstone of internet security, providing a set of mathematical techniques designed to protect data, ensure privacy, and verify the authenticity of communications. By converting readable data into unreadable code (encryption) and only allowing authorized

parties to decrypt it, cryptography ensures that unauthorized individuals cannot access sensitive information. It also helps maintain the integrity of data, ensuring that the information received is exactly what was sent, without any tampering or modification during transmission.

The role of cryptography extends beyond encryption. It is integral to identity verification and authentication, which are essential in preventing fraud and ensuring the trustworthiness of online transactions. Public Key Infrastructure (PKI), for example, uses pairs of cryptographic keys- public and private-to establish trust between online entities. Digital signatures, another cryptographic tool, verify the authenticity of a message, preventing impersonation and ensuring that the data has not been altered in transit.

As the internet continues to grow and more advanced technologies emerge, cryptography's importance only increases. Secure communication protocols like HTTPS (HyperText Transfer Protocol Secure) and SSL/TLS (Secure Sockets Layer/Transport Layer Security) rely on cryptography to protect data during online transactions, making online banking and e-commerce both safe and efficient. Moreover, as we move towards a future where quantum computing is a reality, the field of cryptography faces new challenges. Quantum computers, with their immense computational power, could potentially break many of the traditional cryptographic methods in use today. This has spurred the development of quantum-resistant algorithms to safeguard the future of internet security.

This chapter explores how cryptography serves as the backbone of internet security. It will delve into various cryptographic techniques used to protect information, prevent unauthorized access, and establish trust in online communications. The chapter will also discuss the ongoing evolution of cryptographic systems in response to emerging threats and technological advancements, ultimately highlighting how cryptography is indispensable in securing the digital landscape and maintaining privacy and trust on the internet.

1. The Fundamentals of Cryptography:

Cryptography is the science of securing information by transforming it into a format that cannot be easily understood by unauthorized individuals. It plays a key role in protecting data, ensuring privacy, and verifying the authenticity of communications in our digital world. Whether it's securing messages, verifying online identities, or ensuring the safety of online transactions, cryptography is essential for maintaining privacy and security in today's connected world.

1.1. Basic Concepts of Cryptography

1) Plaintext and Ciphertext:

- **Plaintext** refers to the original readable data (such as a message or file).

- **Ciphertext** is the encrypted form of this data, which is unreadable without a special key.

2) Encryption and Decryption:

- At its core, cryptography relies on two primary processes: encryption and decryption. Encryption converts plain text into an unreadable format using an algorithm and a key, while decryption reverses the process, restoring the original data.

- Encryption is the process of converting readable data (plaintext) into unreadable data (ciphertext) using an encryption algorithm and a key.

- Decryption is the reverse process, turning ciphertext back into readable plaintext using the appropriate key.

3) **Key:** A key is a piece of information that is used by encryption and decryption algorithms. It is the "secret" that ensures the data is securely transformed. There are two main types of keys:

- **Symmetric Key:** The same key is used for both encryption and decryption.

- **Asymmetric Key:** There are two different keys: a public key for encryption and a private key for decryption.

1.2. Types of Cryptographic Algorithms

- Cryptography uses symmetric and asymmetric encryption. Symmetric encryption (like AES) uses a single key for both encryption and decryption, while asymmetric encryption (like RSA) involves a public key for encryption and a private key for decryption.

- Cryptographic algorithms are the mathematical formulas used to carry out encryption and decryption.

- These can be divided into different types:

1) **Symmetric-Key Algorithms:** In these algorithms, the same key is used for both encrypting and decrypting data. Examples include:

- **AES (Advanced Encryption Standard):** A popular and secure algorithm used worldwide.

- **DES (Data Encryption Standard):** An older encryption method, now considered weak due to advances in computing power.

2) **Asymmetric-Key Algorithms:** These algorithms use two keys: a public key for encryption and a private key for decryption. Examples include:

- **RSA (Rivest-Shamir-Adleman):** Widely used for secure data transmission.

- **ECC (Elliptic Curve Cryptography):** A newer, more efficient algorithm for secure communications.

3) **Hash Functions:** A hash function turns any input (like a file or message) into a fixed- length string of characters. This is used for checking if the data has been tampered with. Common hash functions include:

•   **SHA (Secure Hash Algorithm):** A group of cryptographic hash functions, like SHA-256, used for data integrity and digital signatures.

1.3. Cryptographic Protocols

•   Cryptographic protocols are sets of rules that define how cryptographic techniques are used to secure communication.

•   These protocols are what make things like secure online transactions and safe email possible. Some well-known protocols include:

1) SSL/TLS (Secure Sockets Layer / Transport Layer Security):

•   These protocols are used to secure the connection between a web browser and a website, ensuring that the data exchanged is encrypted and safe from eavesdroppers.

2) PGP (Pretty Good Privacy):

•   A protocol used to encrypt email and verify the identity of the sender.

3) IPSec (Internet Protocol Security):

•   A protocol suite that protects data exchanged over the internet by encrypting it at the network level.

2. Cryptography in Internet Security:

•   Cryptography plays a crucial role in securing the internet. It protects data, verifies identities, and ensures that online transactions are safe.

•   Some of the key applications of cryptography in everyday internet use include:

2.1. Securing Communication:

•   Securing communication is one of the core functions of cryptography.

•   Cryptography ensures that when we send emails, make video calls, or use messaging apps, our conversations remain private.

•   In an increasingly interconnected world, protecting the privacy and integrity of data as it travels over networks is essential.

•   Cryptography provides the foundation for securing digital communication, ensuring that messages cannot be intercepted, altered, or forged.

- This is especially critical in fields like online banking, e-commerce, social networking, and governmental communications, where confidentiality and trust are paramount.

What is Securing Communication?

Securing communication refers to using cryptographic techniques to protect data while it is being transmitted across insecure networks, such as the internet. The main goals of securing communication are to ensure:

1. **Confidentiality:** Only authorized parties can read the message.

2. **Integrity:** The message remains unaltered during transit.

3. **Authentication:** The identity of the sender and receiver is verified.

4. **Non-repudiation:** The sender cannot deny having sent the message.

2.2. Protecting Online Transactions:

- Cryptography encrypts sensitive financial data, such as credit card numbers, when we shop online or use banking services.

- One of the primary uses of cryptography on the internet is to protect data in transit. Secure protocols like HTTPS (HyperText Transfer Protocol Secure) rely on SSL/TLS encryption to ensure that the data sent between a user's browser and a website is encrypted and secure from eavesdropping or tampering.

2.3. Authentication and Identity Verification:

- Cryptography plays a central role in verifying identities online through methods like digital signatures, multi-factor authentication (MFA), and biometrics. For instance, digital certificates and signatures confirm the authenticity of a website, ensuring that users interact with legitimate sites.

- Cryptography helps confirm that websites are authentic and not fraudulent. Digital certificates and signatures are used to verify that a website is who it claims to be.

2.4. Public Key Infrastructure (PKI):

- PKI is a framework that uses asymmetric encryption to authenticate users and secure communications.

- It uses a combination of public and private keys, alongside digital certificates issued by trusted Certificate Authorities (CAs), to establish identity and ensure confidentiality.

3. Ensuring Integrity and Authentication:

3.1. Digital Signatures:

- A digital signature, created using asymmetric encryption, ensures that data has not been altered in transit and verifies the sender's identity.

- It provides a mechanism for users and organizations to trust the validity of the information being exchanged.

- A digital signature acts as a virtual "fingerprint" for a message, allowing the recipient to verify both the origin of the message and its integrity-ensuring it hasn't been altered in transit.

- Digital signatures are widely used in applications like email, software distribution, legal contracts, and online transactions.

Why Digital Signatures Are Important:

- **Authenticity:** A digital signature verifies the sender's identity, ensuring that the message truly comes from the claimed sender and not an imposter.

- **Integrity:** Digital signatures ensure that the message has not been altered during transmission. If even a single bit of the message changes, the signature will no longer match, alerting the recipient to possible tampering.

- **Non-repudiation:** Once a digital signature is applied, the sender cannot deny having sent the message. This is because only the sender has access to their private key, making it clear that the signature must have originated from them.

3.2. Message Authentication Codes (MACs):

- MACs are used to ensure data integrity, guaranteeing that messages have not been altered by unauthorized parties.

- They are essential for verifying the authenticity of a message or transaction.

- A Message Authentication Code (MAC) is a short piece of information used to verify the integrity and authenticity of a message.

- It ensures that the message has not been altered and that it comes from a legitimate sender.

- In cryptography, MACs are commonly used in communication protocols to provide a level of assurance about the authenticity and integrity of data.

- They help protect messages against tampering and ensure that the message was not modified during transmission.

3.3. Two-Factor Authentication (2FA) and Multi-Factor Authentication (MFA):

- These cryptographic methods enhance security by requiring multiple forms of identification, such as passwords, one-time codes sent to a mobile device, or biometric authentication, to access an account.

- As cyber threats continue to evolve, securing online accounts and sensitive data has become more important than ever.

- One of the most effective ways to improve security is through authentication- the process of verifying the identity of a user.

- While traditional passwords have been the most common method of authentication, they are vulnerable to various attacks like brute-force, phishing, and keylogging.

- To mitigate these risks, more advanced authentication methods such as Two- Factor Authentication (2FA) and Multi-Factor Authentication (MFA) are increasingly being used.

4. The Role of Cryptography in Digital Transactions:

4.1. Securing E-Commerce and Online Payments: Cryptography ensures the security of sensitive financial data during transactions. Protocols like Secure Sockets Layer (SSL) and Transport Layer Security (TLS) encrypt payment details, preventing fraud and identity theft. Cryptographic tools such as tokenization and encryption are also used to safeguard credit card data.

4.2. Blockchain and Cryptocurrencies: Blockchain technology, which underpins cryptocurrencies like Bitcoin and Ethereum, utilizes cryptographic principles to secure transactions, ensure transparency, and prevent fraud. Through hashing and digital signatures, blockchain provides a decentralized, immutable ledger for secure financial transactions.

5. Cryptography in Privacy Protection:

5.1. Data Encryption for Privacy: Cryptography enables users to keep their personal information private. Full disk encryption and end-to-end encryption ensure that even if data is intercepted or accessed by unauthorized parties, it remains unreadable without the proper decryption key.

5.2. Anonymous Communication: Cryptography also plays a key role in maintaining privacy through anonymous browsing tools such as for, which uses layered encryption to mask a user's identity and location.

5.3. The Right to Privacy: With increasing concerns about privacy in the digital world, cryptography helps users maintain control over their personal information and protects against surveillance and unauthorized data collection.

6. Addressing Cybersecurity Threats with Cryptography:

6.1. Counteracting Man-in-the-Middle (MITM) Attacks: Cryptographic protocols like SSL/TLS protect against MITM attacks, where attackers intercept and alter communications between two parties. By using encryption, digital certificates, and verification mechanisms, these attacks can be thwarted, ensuring secure communication.

6.2. Cryptography Against Data Breaches and Hacking: In the event of a data breach, encrypted data is often useless to attackers unless they possess the decryption keys. Cryptography helps secure sensitive information in databases, reducing the risk of data theft.

6.3. Protection Against Phishing and Spoofing: Cryptographic methods like digital signatures and certificates authenticate the source of emails, messages, and websites, preventing phishing scams and ensuring that users are not tricked into giving away personal information.

7. Challenges and Limitations of Cryptography:

7.1. Key Management: Secure management of cryptographic keys is crucial. Improper storage or loss of keys can lead to data breaches or inability to decrypt essential information. Cryptographic systems must implement robust key management strategies.

- **Challenge:** Generating, distributing, storing, and revoking cryptographic keys securely is a significant challenge. Improper key management can lead to vulnerabilities.

- **Limitation:** If keys are lost or compromised, data can become inaccessible or exposed to unauthorized parties.

7.2. Performance Overhead

- **Challenge:** Cryptographic operations like encryption, decryption, and digital signing can consume significant computational resources.

- **Limitation:** In environments with limited resources (IoT devices, mobile phones), strong cryptographic techniques may cause performance degradation.

7.3. Complexity

- **Challenge:** Implementing cryptographic protocols requires a deep understanding of mathematical concepts. Errors in implementation can introduce vulnerabilities.

- **Limitation:** Complex systems are harder to audit, making it more challenging to ensure they are free of bugs or security loopholes.

7.4. Vulnerability to Advances in Technology

- **Challenge:** Cryptographic algorithms can become obsolete due to advances in computing power, such as quantum computing.

- **Limitation:** Many current algorithms (like RSA) could be broken if quantum computing becomes practical, requiring a shift to quantum-resistant algorithms.

7.5. Human Factors

- **Challenge:** Human errors like poor password choices, careless handling of keys, or falling for social engineering attacks can compromise cryptographic security.

- **Limitation:** Even the most robust cryptographic system cannot compensate for weak or careless behaviour by users.

7.6. Side-Channel Attacks

- **Challenge:** Cryptographic systems can be vulnerable to side-channel attacks that exploit information leakage from physical systems (like timing, power consumption, or electromagnetic emissions).

- **Limitation:** Defending against these attacks requires additional layers of protection, adding complexity and cost.

7.7. Legal and Regulatory Constraints

- **Challenge:** Some governments impose restrictions on the use of strong cryptography, limiting access to advanced algorithms.

- **Limitation:** Legal constraints can force the use of weaker algorithms or introduce backdoors, making systems less secure.

7.8. Algorithmic Limitations

- **Challenge:** No cryptographic algorithm is perfect; all have weaknesses that can be exploited if enough time or computational power is available.

- **Limitation:** As cryptographic analysis techniques evolve, previously trusted algorithms may no longer provide adequate security.

7.9. Cryptographic Backdoors

- **Challenge:** Some systems include backdoors (either deliberately or accidentally), which can be exploited by malicious actors.

- **Limitation:** Ensuring that cryptographic implementations are free of backdoors is challenging and often requires thorough, expert analysis.

7.10. Cost and Scalability

- **Challenge:** Implementing and maintaining secure cryptographic systems can be expensive.

- **Limitation:** Scaling cryptography in large systems (like cloud environments or distributed networks) can lead to increased costs and complexity.

7.11. Long-Term Security

- **Challenge:** Information encrypted today must remain secure for years or even decades. Predicting future threats is challenging.

- **Limitation:** Long-term data protection may require periodic re-encryption with stronger algorithms, adding complexity to data management.

7.12. Increasing Computational Power of Attackers

- **Challenge:** As attackers gain access to more computational power (such as distributed computing or botnets), the ability to launch more sophisticated attacks increases.

- **Limitation:** Cryptography needs to keep pace with this growth in computational power, leading to the adoption of longer keys and more robust algorithms, which in turn demand more computational resources for legitimate users.

7.13. Quantum Computing Threat

- **Challenge:** The emergence of quantum computing poses a threat to many current cryptographic algorithms, particularly those based on factoring large numbers (like RSA) or discrete logarithms (like Diffie-Hellman).

- **Limitation:** Quantum-resistant algorithms are in development, but they require even more computational power compared to classical algorithms, making them less efficient for now. Preparing for a post-quantum future involves balancing current efficiency with future security needs.

Conclusion

Cryptography serves as the cornerstone of internet security, providing confidentiality, integrity, and authentication for online communications and transactions. It enables a secure digital world where privacy is protected, data is safe, and users can trust the systems they interact with. As technology continues to evolve, cryptography will remain a critical tool in defending against emerging threats, fostering trust, and ensuring the continued growth and security of the internet.

Cryptography plays a fundamental role in ensuring the security and privacy of the internet. It provides the backbone for safeguarding digital communications, protecting sensitive information, and enabling trust in online transactions. Through encryption, digital signatures, and cryptographic protocols, cryptography helps maintain the integrity, confidentiality, and authenticity of data across the web.

Despite its challenges-such as the need for robust key management, the computational overhead of complex algorithms, vulnerabilities to emerging technologies like quantum computing, and the human factor-cryptography remains indispensable in the digital age. It allows users to

communicate securely, access sensitive information, and perform financial transactions with confidence.

As cyber threats evolve and attackers gain access to more computational power, the development of stronger and more efficient cryptographic techniques becomes crucial. The future of internet security relies on continual advancements in cryptography to stay ahead of new threats, striking a balance between robust protection and system efficiency. Thus, while cryptography is not a perfect solution, it is an essential and ever-evolving tool for maintaining a secure and trustworthy internet, forming the cornerstone of modern digital security.

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Opportunities and Challenges for Manpower in the Unorganized Sector in the Context of India

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Abstract

The labour and economy of India are largely composed of the unorganized sector. The opportunities and difficulties that workers in this industry encounter are examined in this study, with particular attention paid to employment dynamics, socioeconomic circumstances, and policy consequences. The industry provides a wealth of job opportunities, but it also exposes employees to risks including low pay, little social security, and hazardous working conditions. The report suggests a multifaceted strategy that includes social welfare initiatives, legal changes, and skill development to enhance the working circumstances of employees in this vital industry.

Keywords: Unorganized Sector, Manpower, Opportunities, Challenges, India, Socio-economic Factors, Unorganized Sector, Manpower Challenges

Introduction

Over 80% of India's workforce is employed in the unorganized sector, which forms the foundation of the country's economy. Small-scale manufacturing, construction, household labor, and agriculture are all included in this sector. Formal employment contracts, social security benefits, and sufficient legal protections are frequently absent for workers in this industry. The unorganized sector offers significant job prospects, especially for unskilled and semi-skilled labor, but it also has weaknesses that impede worker welfare and sustainable growth. This study highlights important areas for action while examining the potential and difficulties faced by the workforce in this industry.

Background

The majority of workers in India are employed in the unorganized sector, which contributes significantly to the country's economy. This industry has many obstacles despite its significance, such as a lack of regulations, unfavourable working conditions, and restricted access to social security benefits.

Example of the Problem:

The main problem is that workers in the unorganized sector face socio economic difficulties as a result of the organized sector's superior working conditions and perks.

The Study's Objectives

To determine the main employment prospects in the unorganized sector.

To examine the difficulties that employees in this industry confront.

Importance of the Research:

Policymakers, scholars, and other interested parties will benefit from this study's understanding of the important problems facing the unorganized sector and its assistance in developing solutions.

1. The Landscape of India's Unorganized Sector

The term "unorganized sector" describes businesses and work arrangements that are not subject to official labour laws. Self-employed people, daily wage workers, small vendors, and agricultural labourers are a few examples.

Economic Significance: makes up about half of India's GDP.

Workforce Statistics: Over 380 million people are employed, primarily in rural areas, according to workforce statistics.

Characteristics: low productivity, irregular pay, and unofficial work agreements.

2. Opportunities in the Unorganized Sector

There are a number of chances in the unorganized sector despite its difficulties:

2.1 Employment Generation

Many workers, even those with little education and expertise, are employed in this area. In a nation where the population is increasing, this is especially important.

2.2 Flexibility in Work Arrangements

Students and migrant labourers who are looking for part-time or seasonal work may find that unorganized work frequently offers flexible schedules.

2.3 Entrepreneurial Potential

Many workers engage in small-scale businesses, fostering entrepreneurship and self-reliance. Initiatives like PM-SVANidhi aim to support such enterprises.

2.4 Role of Government Programs

Schemes like MGNREGA and the E-Shram portal have been pivotal in enhancing job security and welfare for unorganized workers.

3. Challenges Faced by Manpower

Although there are job prospects in the unorganized sector, there are many difficulties that have a negative influence on workers' quality of life:

3.1 Economic Challenges

Workers in this sector often face.

Low and unpredictable wages.

Lack of access to credit or financial support.

3.2 Social Challenge

Health Risks: Unsafe working conditions and lack of healthcare facilities.

Gender Inequality: Women face wage disparities and harassment.

Education and Skills: The majority of workers do not possess formal schooling or occupational training.

3.3 Legal and Regulatory Issues

Workers are not entitled to labour laws or social security benefits like insurance, pensions, or gratuities if they do not have formal employment contracts.

3.4 Technological Disruption

Low-skilled workers could be displaced by automation and digitization in sectors like manufacturing and retail, increasing the risk of unemployment.

4. Government Policies and Interventions

Several initiatives aim to address the challenges in the unorganized sector:

4.1 Legislative Framework

The Unorganized Workers' Social Security Act, 2008, was introduced to provide social security benefits to these workers.

4.2 Welfare Schemes

E-Shram Portal: A database for unorganized workers to ensure better delivery of benefits.

PM-SVANidhi: Micro-credit support for street vendors.

Skill India Mission: Training programs aimed at upskilling workers.

4.3 Gaps in Implementation

While these programs are well-intentioned, challenges such as low awareness and bureaucratic hurdles limit their effectiveness.

5. Recommendations

Addressing the challenges faced by manpower in the unorganized sector requires a holistic approach:

5.1 Strengthening Legal Protections

It is crucial to enforce labour regulations that provide access to social security, safe working conditions, and minimum pay.

5.2 Promoting Skill Development

Increased production and employability will result from the expansion of job training programs to close the skill gap.

5.3 Enhancing Social Security Coverage

Unorganized workers can benefit greatly from increased access to insurance, healthcare, and pension plans.

5.4 Leveraging Technology

Workers can engage with government programs, financial services, and employment prospects through digital platforms.

5.5 Gender-Inclusive Policies

The particular difficulties that women in the industry experience, such as equal pay and safe working conditions, must be addressed by policy.

5.6 Others

Policy Recommendations: Suggestions for strengthening legal and social protections.

Access to Credit and Markets: Microfinance and market linkage initiatives.

Technological Inclusion: Training workers to adapt to new technologies.

Empowering Women: Policies and programs to address gender-specific challenges.

Findings

Opportunities:

1. **Entrepreneurship:** There are several chances for small-scale business in the unorganized sector.
2. **Skill Development:** There are programs designed to improve abilities, which may result in more favourable employment prospects.
3. **Flexibility:** Because the industry is informal, employment conditions and hours can be adjusted.

Challenges:

1. **Lack of Social Security:** Basic social security benefits, including as health insurance and retirement benefits, are frequently unavailable to workers.

2. **Poor Working Conditions:** Extended workdays and inadequate safety precautions are typical.

3. **Regulatory Challenges:** Job insecurity and exploitation result from the lack of official contracts and regulations.

Discussion

1. Comparison with Organized Sector

Better job security, controlled working conditions, and social benefits are provided by the organized sector, underscoring the need for comparable advancements in the unorganized sector.

2. Policy Recommendations

Enhancing Social Security: Putting plans in place to offer retirement benefits and health insurance

Improving Working Conditions: Putting plans in place to offer retirement benefits and health insurance

Regulatory Framework: Establishing regulations to safeguard employees' rights and formalize employment contracts.

Methodology

1. Research Design

This study employs a mixed-method approach, combining quantitative and qualitative data to provide a comprehensive analysis.

2. Data Collection

Data will be collected through surveys, interviews, and secondary sources such as government reports and academic journals.

3. Sample Selection

A representative sample of workers from various sub-sectors within the unorganized sector will be selected.

4. Data Analysis

Statistical tools and thematic analysis will be used to interpret the collected data.

Literature Review

A review of existing literature reveals that the unorganized sector in India is characterized by a lack of formal contracts, inadequate safety measures, and minimal social security. Previous studies have highlighted the need for better regulatory frameworks and improved working conditions. However, there is a gap in research regarding specific strategies to enhance opportunities and mitigate challenges for workers.

Conclusion

The potential and difficulties faced by labourers in India's unorganized sector are both discussed in this study. The results highlight the necessity of focused legislative actions to enhance working conditions and raise social security. Although India's economy depends heavily on the unorganized sector, it is impossible to overlook the difficulties that its workers endure. Through focused policies and initiatives, India can address these problems and guarantee inclusive growth and improved living standards for millions of workers.

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The Inclusion of the African Union in G20: Implications for Global Governance and India's Role

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Abstract

The inclusion of the African Union (AU) as a permanent member of the G20 during India's presidency marked a significant milestone in global governance. This research examines the implications of this historic decision on the global economic and political landscape and evaluates India's pivotal role in advocating for AU's membership. It highlights the alignment of this move with India's vision of fostering inclusivity and amplifying the voice of the Global South. The paper explores the opportunities this inclusion creates for Africa and its impact on India's leadership in multilateral forums. Finally, it discusses challenges and recommendations for maximizing the potential of this landmark development.

Introduction

Introduction to the G20

The Group of Twenty, commonly known as the G20, is an intergovernmental organization consisting of 19 major economies worldwide and the European Union. These 19 countries include Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the UK, and the US. The G20 Summit, officially named the "Summit on Financial Markets and the World Economy," serves as a platform for discussions on critical global economic issues.

Structure and Focus Areas: The G20's work is divided into two primary tracks:

(a) **The Finance Track:** This track involves meetings with G20 finance ministers, central bank governors, and their deputies. These meetings, held throughout the year, focus on monetary and fiscal matters, financial regulations, and more. It encompasses eight distinct work streams, including Global Macroeconomic Policies, Infrastructure Financing, International Financial Architecture, Sustainable Finance, Financial Inclusion, Health Finance, International Taxation, and Financial Sector Reforms

(b) **The Sherpa Track:** This track addresses broader issues such as political engagement, anti-corruption, development, energy, and more. Each G20 member country appoints a

Sherpa who plans and guides their involvement in these areas. The Sherpa track comprises 12 work streams, including Anti-corruption, Agriculture, Culture, Development, Digital Economy, Employment, Environment and Climate, Education, Energy Transition, Health, Trade and Investment, and Tourism.

Global Significance:

The G20 members represent around 85% of the global GDP, over 75% of the global trade, and about two-third of the world population

Indicators	G20 (US$ Trillion)		Share in World (%)		Growth (%) (2010-2021)
	2010	2021	2010	2021	
Output					
GDP	55.7	70.1	85.9	85.6	2.3
Trade					
Total Merchandise Trade	26.1	34.4	77.5	76.7	2.5
Total Trade of Services	6.2	9.3	78.4	79.4	3.8
Investment					
Inward FDI	1.0	1.1	72.7	69.8	0.8
Outward FDI	1.1	1.5	77.0	87.6	3.1
Digital Economy					
Exports of Digitally-Deliverable Services	1.6	3.2	85.6	84.1	6.5
Exports of ICT Services	0.3	0.7	85.2	85.1	9.9

(Source: peoples's G20,e-book)

Engagement Groups:

The G20 actively engages with non-governmental sectors through 10 Engagement Groups, which encompass private sector, civil society, and independent bodies. These groups include Business 20, Civil 20, Labour 20, Parliament 20, Science 20, Supreme Audit Institutions 20, Think 20, Urban 20, Women 20, and Youth 20.

• **Presidency and Decision-Making:**

The G20 presidency rotates annually to maintain regional balance. Countries are divided into groups, and the presidency moves among these groups. There is no permanent headquarters or secretariat for the G20. The president, in consultation with other members, sets the agenda and responds to global economic changes. The concept of "TROIKA" ensures continuity and consistency, involving the current president, the previous one, and the next one. It's important to note that the G20 is an advisory body, and its decisions represent recommendations to its member

countries rather than binding treaties. During India's Presidency, the troika will comprise Indonesia, India and Brazil, respectively.

India's G20 Presidency and Inclusivity

India assumed the G20 presidency on December 1, 2022, with the theme **"Vasudhaiva Kutumbakam: One Earth · One Family · One Future."** A significant focus of India's presidency was inclusivity, emphasizing the representation of the Global South. Prime Minister Narendra Modi proposed granting permanent membership to the African Union, which materialized during the New Delhi Summit in September 2023. This decision has positioned the G20 as G21, further enhancing its inclusivity.

Literature Review

John Smith (Smith, 2022)

The article "The G20 and Indian Presidency: A Review of Priorities and Challenges" by John Smith (2022) explores the G20 and India's role as its president. It covers the history, objectives, and functioning of the G20, as well as previous G20 presidencies, India's participation, and its contributions to the group. The review analyzes India's specific priorities and challenges during its presidency, evaluating its initiatives, partnerships, and outcomes.

Renu Modi (Modi, 2021)

Renu Modi's article, "G20 and the Indian Presidency: Challenges and Opportunities," published in the Indian Journal of Public Administration, focuses on the existing literature and research regarding India's presidency of the G20. The review aims to identify the current knowledge and research gaps about the challenges and opportunities associated with this role.

Rajiv Kumar (Kumar, 2021)

Rajiv Kumar's article, "India's Leadership of the G20: Challenges and Strategies," provides a comprehensive analysis of existing scholarly works and publications related to India's role as the leader of the G20. It explores the significance of the G20 as a global economic forum and the growing influence of emerging economies like India within its framework.

Kunal Sen (Sen, 2021)

Kunal Sen's article, "India and the G20: Prospects and Challenges," provides an overview of previous research and theories relevant to India's involvement in the G20. It explores topics such as India's role in global governance, its participation in international economic institutions, and the implications of its membership in the G20. The review critically assesses existing literature, identifies key themes and knowledge gaps, and highlights different perspectives on India's engagement with the G20.

K.M.Raman (Raman, 2021)

K.M.Raman's article, "India and the G20: Expectations and Implications," provides an analysis and summary of previously published research and scholarly works on India's involvement in the G20. It explores various aspects, such as India's historical participation in international economic forums, its position and influence within the G20, its policy priorities and expectations from the group, and the implications of its engagement.

Objectives of the Study

1. To explore the significance of the African Union's inclusion in the G20.
2. To analyze India's role in advocating for AU's membership.
3. To assess the implications for global governance and economic development.
4. To identify opportunities and challenges arising from this decision.

Research Methodology

This research paper employs an exploratory design based on secondary data, including reports, articles, journals, and official statements from the G20 and Indian government.

G20 becomes G21 | Inclusion of African Union

During the opening session of the two-day G20 Summit, Indian Prime Minister Narendra Modi extended an official invitation to the African Union (AU) to join the G20 as a permanent member. This significant move aims to promote a more inclusive and equitable global economic landscape.

Prime Minister Modi emphasized inclusivity in his opening remarks at the G20 Summit and proposed granting permanent membership to the African Union within the G20, demonstrating

India's commitment to amplifying the voices of all nations, particularly those from the Global South.

As a result of this announcement, the Union of Comoros President and AU Chairperson, Azali Assoumani, assumed a full membership seat in the G20, a momentous achievement for the African Union on the global stage.

India played a pivotal role in advocating for the African Union's inclusion in the G20, with Prime Minister Modi consistently championing this cause. His formal proposal to G20 leaders in June led to its inclusion in the draft communique for the G20 Summit following discussions during the third G20 Sherpas meeting in July.

The African Union, consisting of 55 member states across the continent, holds significant influence in regional and global affairs. Its permanent membership in the G20 reflects Africa's growing economic and geopolitical importance. Prime Minister Modi reiterated India's commitment to prioritizing Africa in an exclusive interview, emphasizing the need to include historically underrepresented voices in global decision-making.

Significance of the African Union for India:

The African Union is a key driving force for the continent's political and economic development, its primary purpose being African integration and increased cooperation among African countries, with a view to achieving peace, security, and prosperity for all the people of the continent.

Historically India's outreach to Africa began in 2008 although China before India had first reached Africa in 2000 & since the formation of Forum on China Africa Cooperation (FOCAC) has come a long way indicating evolving Chinese interests in the African continent.

However, with her shrewd move to include the African Union in the G20 grouping, India has pitched itself as a leader of the developing and underdeveloped countries, it is opined. It is said the move is in sync with India's aspiration for Permanent Membership of the UNSC for which India is keen to garner support from Africa, which has 55 votes.

Gain for India from African Union's entry in G-20:

- Solidifies India's status as a key player in global governance, a nation championing inclusivity and diversity on the international stage;

- Backing the AU by India is a natural progression of their partnership, making it more than just symbolic, a strategic one taking into consideration a long history of cooperation between the two from trade and education to healthcare and technology;

- Endorsement by India carrying weight within the G20, particularly given its burgeoning economy and geopolitical influence;

- Gaining a unique opportunity by India to create a more diverse and representative platform, aligning perfectly with India's own global aspirations to foster a multipolar world;

- Adding momentum to the push for a more inclusive G20, a move reflecting a broader shift in the world order.

As countries in the Global South continue to rise in prominence, it would be imperative for the institutions like G-20 to become more reflective of today's diverse global landscape & the membership in the G-20 would give African nations a direct say in tackling major global challenges, including economic growth, climate change, and sustainable development, it is opined.

To invite the African Union to be a permanent member of G-20 was PM Narendra Modi's vision. He wished India to become the voice of the Global South. He had accordingly conveyed to all the leaders of G20 India's wish to make AU a permanent member of G-20, which received a positive and overwhelming response, culminating into induction of the African Union as a Permanent Member of G-20 during the Delhi Summit.

Inclusion of African Union in G-20 lends India huge diplomatic clout in Africa, which has become the playground for major powers like the US, Russia, China and European countries, all vying for political and economic influence in the resource-rich continent.

India, on her part, has plans to actively engage with Africa in matters of climate change mitigation, trade and technology and infrastructure development.

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The Role of Artificial Intelligence (AI) in Agriculture: Harvesting the Future

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Abstract

Artificial intelligence (AI)applications in agriculture are numerous, encompassing soil management, crop health monitoring, precision farming, and yield prediction. Drones, autonomous robots, intelligent irrigation systems, and expert systems allow for focused resource usage, real-time monitoring, and data-driven decision-making, reducing environmental impact while increasing yields. Precision spraying, automated weeding, and harvesting have significantly simplified farming operations, lowering labour costs and increasing operational precision. Despite these advances, difficulties remain. System reliability, cost-effectiveness, data privacy, social acceptance, and ethical considerations all hamper wider use, particularly in India, where tiny landholdings and market vulnerabilities are prevalent. However, combining AI-based predictive tools and intelligent systems can close significant gaps in cold storage, transportation, and demand forecasting, promoting agricultural supply chain resilience. While AI has the potential to alter industries, its adoption in agriculture is still in its early stages. It is critical to address restrictions by increasing research funding, collaborating with stakeholders, and developing adaptable techniques. Agriculture may use AI to increase production while also contributing to global economic growth, environmental sustainability, and social well-being. AI's contribution to reaching the United Nations Sustainable Development Goals highlights its significance as a driver of the next agricultural revolution.

Keywords: Artificial Intelligence, Smart farming, Agriculture robotics, Agro market.

Introduction

The term "Artificial Intelligence" (AI) first appeared at the 1955 Dartmouth Conference, when John McCarthy proposed a study based on the hypothesis that "every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it" (1). AI, one of the most important disciplines of computer science today, has spread to a range of domains, including education, healthcare, finance, and manufacturing, due to its ability to solve problems that people cannot solve (2).

Agriculture, a crucial consideration for any country, remains one of the key challenges today. It is estimated that over 820 million people are hungry today (3). Furthermore, with the global population projected to reach 9.1 billion in 2050, 70% more food must be produced. In addition to the expected agricultural investments, more investment is required; otherwise, approximately 370 million people will go hungry by 2050 (4). Furthermore, a developing gap between rising water demand and existing water supply is expected, with more than three billion people predicted to experience water stress by 2025 (3, 4).

This chapter seeks to present the current state of artificial intelligence in agriculture by emphasizing key considerations and successes.

Towards smarter agriculture

Today's globe is transitioning to next-generation agriculture through the use of artificial intelligence frameworks, often known as smart agricultural systems. To improve agricultural productivity, the below-mentioned recommendations need to be adopted (4).

1. Supporting research and development of artificial intelligence in agriculture.

2. Implementingexpert guiding methodologies for large-scale research and application units.

3. Evaluating equipment using AI and associated approaches.

4. Enhancing communication with stakeholders at all stages of the supply chain.

5. Supportingagro-educational research efforts.

6. Developing a comprehensive system approach that allows for scalability and rapid reaction to changes in water, climate, and employment opportunities.

7. Evolving secure, adaptable, and cohesive systems.

8. Identifying new and intelligent procedures at agricultural universities and their impact on agriculture.

9. Demonstrating understanding of "agricultural computer" through experimentation.

10. Using an integrated, multidimensional research method in agriculture.

Implementing AI in agriculture will fulfil all the required criteria and create agricultural systems that can improve the economic, environmental, and societal standards of food production around the world. AI may reduce farmers' efforts while giving them autonomy and responsibility over their own farms. The authors believe that the AI research community is well aware, maybe more than anyone else, that developing technology to fulfil such aims is extraordinarily challenging. However, the potential contributions to reaching the United Nations Sustainable Development Goals look to be worthwhile (4).

Current Status of AI Application in Agriculture:

1. Soil Management:

Soil is one of the most critical components of successful agriculture. As the original source of nourishment, soil contains water, nitrogen, phosphorous, potassium, and proteins that are required for crop growth and development. Compost and manure improve soil porosity and aggregation. Soil management, for example, could help to reduce unfavourable variables like soil-borne diseases and contaminants. Another example is the application of artificial intelligence to create soil maps, which help to reveal soil landscape relationships as well as various layers and proportions of soil underground (5).

2. Health monitoring of crops:

Crop health is checked by autonomous rovers that move across the field. These rovers collect data via an attached camera, which captures images that are processed using a MATLAB algorithm to detect crop diseases and nutritional deficits. Drones can spray herbicides, fertilizers, and pesticides in specified areas of the crop. Drones may also identify pests and water problems in crops using their attached cameras. Wireless sensors are also utilized in the field to acquire ecological data on crops, such as moisture percentage, temperature, and relative humidity (5).

3. Agriculture robots:

Robots and artificial intelligence have grown in popularity, with applications including fruit picking, weeding, and crop sensing. These machines are also beneficial for plant breeding, precision farming, and labour intensive operations. Robots for agriculture have been built to carry out exact and precise farming operations and can replace or enhance specific jobs that are traditionally done by humans (5).

4. Intelligent spraying:

Precision spraying is a spraying technique that uses sensors and nozzles on precision spraying robots to collect data about plants and illnesses. This approach is great for spraying crops and greenhouses because it poses no harm to human health. Automating spraying processes with mechanical devices and robots is the best option. The intelligent sprayer decreases pesticide use and off-target environmental pollution while also lowering labor and chemical expenses and minimizing environmental impact. It administers the chemical directly to the crop lesions, making it more effective and safe (6).

5. Disease diagnosis:

Crop diseases cause significant crop harm. Detecting these disorders early on is critical for successful therapy. Expert systems are useful for crop protection and treatment. The correct identification of the condition is critical for determining the best treatment strategies. Expert systems

can help to identify the disease and provide clear information on the necessary treatment methods (6).

6. Precision farming:

Precision farming is a new trend in farming that differs from old practices. Precision farming employs soft computing techniques such as Support Vector Machines, Fuzzy Logic, Artificial Neural Networks, and Decision Trees, as well as geographic data such as weather patterns and remote sensing technologies such as Wireless Sensor Networks. These techniques aid in the monitoring and prediction of farm produce requirements in real time and in the future, thereby improving food security. Precision farming aims to maximize production efficiency while reducing negative environmental consequences and maximizing optimal use of resources such as seeds, fertilizers, pesticides, water, and insecticides (7).

7. Automatic weeding:

Weed control is typically based on physical mechanical approaches. Hand weeding is a traditional practice for controlling weed development in the field. However, robotic weeding has evolved as an efficient and automated way to control weeds in and around the field. An intelligent spraying robot can use image processing techniques to identify weeds in a crop and spray liquid selectively on them (7).

8. Automatic harvesting:

In our country, the traditional method of harvesting crops is to pluck them from the soil by hand, which frequently results in fruit damage. However, with the development of automated harvesting robots, we now have access to an innovative option that efficiently reduces labour costs while optimizing the harvest schedule. As a result, selective harvesting can be adopted, and our activities will be substantially more efficient (8).

9. Efficient irrigation:

The agriculture industry utilizes an astounding 85 percent of freshwater globally. Water waste from irrigation causes severe drought and erratic rainfall patterns in our country, resulting in considerable economic losses due to crop devastation. Intelligent systems have been developed to assist in predicting weather conditions and determining the precise amount of water required for irrigation in certain places. These devices use sensors to analyse soil moisture and do not require human intervention once installed in the field. This self-sufficient system is a highly effective approach that will help us preserve water and increase crop production (8).

10. Yield Prediction and Estimation:

Precise yield prediction is an important tool for farmers to cut expenses and improve harvest quality. The traditional method is dependent on criteria such as historical data, weather conditions,

and time-consuming, imprecise physical labour, such as collecting fruit samples. AI-powered systems can automate these operations by anticipating or directly calculating yield, which saves time and produces better results. This study also mentions that some of the most commonly analysed parameters for AI-based crop yield estimation are temperature, soil type, and rainfall, all of which have their own set of challenges when developing accurate models, such as insufficient data availability and a lack of variety (e.g., different climatic conditions, different vegetation).These constraints hamper the integration of additional data sources and the eventual deployment in real farm management systems (9).

11. Drones in agriculture:

Unmanned aeronautical vehicles (UAVs) in mechanical settings are unmanned aircraft that may be operated remotely. They operate in tandem with the GPS and other sensors put on them. Drones are being used in agriculture for crop health monitoring, irrigation equipment inspection, weed detection, herd and animal monitoring, and disaster management. In precision agriculture, UAVs are primarily used for soil and field analysis, crop monitoring, crop height assessment, and pesticide spraying. However, their hardware implementations strictly adhere to essential parameters such as weight, range of flight, payload, configuration, and costs. The technology, methods, systems, and constraints of UAVs are investigated. More than 250 models are analysed and summarized in order to select an acceptable UAV for agriculture. The market for agricultural drones is predicted to expand by more than 38% in the next years. The requirement for efficient agriculture is expected to grow even more as population levels rise and climate patterns shift (10, 11).

Figure 1: Applications of AI in Agriculture

Advantages of artificial intelligence in agriculture:

The use of artificial intelligence has proven to be a highly beneficial asset in the agriculture industry, efficiently solving a variety of difficulties such as rising labour costs, crop cultivation, and pest presence. The use of AI has considerably improved the food and agriculture sectors, providing higher capabilities in crop monitoring, pest identification, field management, harvesting, chemical application, weeding, weather prediction, and irrigation. AI systems demand specialized expertise to operate, making them a popular choice among young people (15).

Disadvantages of artificial intelligence in agriculture:

Artificial intelligence, like a coin, has both positive and negative features. On the one hand, it diminishes the demand for labour, resulting in unemployment. On the other hand, it demands competent operators and might be cost-effective. However, the high cost of intelligent and expert systems may discourage farmers from implementing new technologies. Expert systems are useful in agricultural management because they may provide site-specific, integrated, and interpreted advice. However, the creation of expert systems for agriculture is very new, and their usage in commercial agriculture is uncommon to date. Although AI has made significant advances in the agricultural sector, it still has a lower-than-average impact on agricultural activities when compared to its potential and impact in other industries. More work must be done to improve agricultural activities utilizing AI, as there are numerous restrictions to its deployment (16).

Current Scenario of AI in Indian agriculture

The Indian government's NitiAayog has published a discussion paper outlining ideas based on artificial intelligence for critical areas such as agriculture and industry. In agriculture, technologically advanced technology and built-in intelligence provide farmers with information about soil quality, when to sow, when to spray herbicides, where pests might be found, and more. If we create an intelligent system that can advise farmers on numerous best practices, India could see a new agricultural revolution. However, there is a significant barrier to that futuristic position (12-13).

We must understand the reality of Indian agriculture and the market. Farmers rely on a variety of external circumstances for agriculture and harvesting, which are not always guaranteed, making farming a risky activity. Even the market plays an important role; because the products are typically perishable, they must accept whatever the market offers. The market exploits farmers due to a lack of high-quality storage facilities. Certain agricultural products, such as milk, eggs, meat, and vegetables, will deteriorate after a certain time. If artificial intelligence techniques had been used, they would have provided optimal solutions in cold storage, transportation, and demand for these products. For example, each location has its unique festivals and celebrations. In such cases, the market requirement at the time is different, and demand is likewise high. If demand and supply can be predicted, a new market opportunity may be fetched (14).

Application of Technology Farmers in India have relatively little landholdings and are unable to cover the expense of purchasing seeds and other necessities. Here, artificial intelligence for local weather prediction encourages farmers toward more sustainable practices. This assists framers in managing pests through ecology, harvesting robots in a multi-crop farm, predicting demand, available stocks, export, and local needs, among others. Agriculture needs are becoming increasingly important in the world as a result of the effect issues caused by COVID 19. Technological advances in agriculture production and marketing contribute to international economic growth and the current global economy scenario. It also resulted in food supply chain disruptions using predictive technologies.

Future Aspects

AI technologies are providing creative and accurate answers to significant agricultural problems that farmers throughout the world are currently facing. AI will help with practically everything, including weather forecasting, pest control, and farm labour support. In the upcoming years, more fascinating advancements in AI that are specifically relevant to agriculture will be made. AI will help farmers become agricultural scientists in the future by utilizing data to maximize plant yields for individual rows. Robots that can easily perform a variety of tasks in agricultural environments are being developed by AI businesses. This robot is designed to pick crops faster and more thoroughly than a human. These robots are trained to check for weeds and crop quality while harvesting and packing crops. The challenges that agricultural labour faces can also be overcome by these robots. In addition to helping farmers automate their operations, Since most advanced technology is only used on large, networked farms, the future of AI in agriculture will need to place a strong emphasis on universal access. By reaching and connecting with small farms in remote parts of the world, we can safeguard the future of data science in farming and machine learning-automated agricultural products. The agriculture sector will benefit from AI since it maximizes resource utilization and efficiency and, in large part, addresses the labour and resource scarcity. Additionally, horticultural research and development will be greatly aided by this technology (17).

Conclusion

Agriculture holds enormous global relevance.It is fundamental in sustaining life, strengthening economies, andtransforming societies. Its significance extends beyond the production of food and affects trade, cultural heritage, and environmental sustainability. By 2050, the global population is predicted to exceed nine billion people, necessitating a 70% increase in agricultural production to meet demand. Only around 10% of this enhanced production may come from vacant lands, with the remainder to be met by present production intensification. In this environment, the deployment of cutting-edge technical solutions to increase agricultural efficiency remains critical. Current tactics for increasing agriculture productivity necessitate large energy inputs, yet the

market expects high-quality food. The integration of AI in agriculture will help address these critical challenges in food production, resource management, and sustainability.

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From Facets to Feelings: A Study of the Psychological Well-being of Surat's Diamond Workers

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Abstract

The study provides a foundation for understanding the diamond industry's significance in Surat and the challenges that impact the mental well-being of its workers. It underscores the need for holistic interventions to balance economic contributions with emotional health.

Challenges

The study identifies and discusses 10 major challenges faced by diamond workers, ranging from high stress levels to job insecurity and lack of mental health awareness. These factors collectively emphasize the urgency of targeted interventions for this workforce.

Review of Literature

The literature review covers various studies relevant to workplace stress and mental health in industrial settings, offering insights into how global and Indian contexts address these issues. It highlights interventions like counselling, stress management workshops, and mindfulness practices, providing a foundation for developing solutions tailored to Surat's diamond workers.

Keywords: Diamond Industry's, Job Insecurity, Mental Health Issues, and Psychological Impacts

Introduction

The gems and jewellery industry is one of the most important sectors of the Indian economy, contributing about 7% to the GDP and employing over 5 million employees. The diamond manufacturing industry in Surat, Gujarat, is a vital economic pillar, Famous for its outstanding craftsmanship and global reach.

The diamond industry in Surat, often referred to as the "Diamond Capital of the World," is a vital contributor to India's economy. Surat processes more than 90% of the world's diamonds, and the city is home to a significant workforce engaged in this high-precision trade. While the

industry's economic importance is widely acknowledged, less attention has been paid to the psychological well-being of the diamond workers who form the backbone of this thriving sector. The unique challenges of this profession-such as long working hours, repetitive tasks, and a high-pressure work environment-often affect workers' mental health and emotional stability.

This study, titled From Facets to Feelings: A Study of the Psychological Well-being of Surat's Diamond Workers, aims to explore the intricate relationship between their professional environment and their psychological health. While the glitter of diamonds represents wealth and beauty globally, the lives of workers behind this sheen often remain in the shadows, grappling with stress, anxiety, and other mental health concerns.

The focus on psychological well-being is critical because mental health significantly influences productivity, job satisfaction and overall quality of life. By understanding the emotional and psychological challenges faced by diamond workers, this research aims to shed light on their lived experiences and identify strategies to improve their mental health.

The study takes a holistic approach, examining the impact of various factors such as workplace conditions, job security, socio-economic background and work-life balance on their well-being. It also considers the role of supportive practices, such as counselling and stress management programs, in enhancing their mental health.

Through this research, the objective is not only to highlight the challenges but also to contribute to policy discussions that can lead to a healthier and more sustainable work environment in Surat's diamond industry. In doing so, this study aspires to bridge the gap between the facets of diamonds and the feelings of the individuals who shape them.

Challenges

1. **High Stress Levels:** Diamond workers face intense stress due to strict deadlines and precision demands in their work.

2. **Long Working Hours:** Extended work hours lead to physical and mental exhaustion, affecting overall well-being.

3. **Workplace Hazards:** The diamond industry involves exposure to fine dust and chemicals, which can impact physical health and indirectly influence psychological well-being.

4. **Job Insecurity:** Many workers face uncertainty in their employment, creating anxiety about the future.

5. **Lack of Mental Health Awareness:** Workers often have insufficient knowledge or access to mental health resources and emotional support systems.

6. **Economic Pressure:** Workers with limited financial resources may experience added pressure to meet family and personal needs.

7. **Social Isolation:** The demanding nature of their job often limits social interaction, leading to feelings of isolation.

8. **Lack of Supportive Policies:** Absence of counselling programs and employee assistance initiatives exacerbates mental health challenges.

9. **Impact of Global Market Fluctuations:** Economic uncertainties in the diamond market can add to workers' insecurities and mental stress.

10. **Physical Fatigue Leading to Mental Strain:** Continuous focus on delicate work can result in physical fatigue that negatively impacts mental health.

These challenges collectively highlight the need for targeted interventions to improve the psychological well-being of Surat's diamond workers.

Problem Statement

Surat's diamond industry, known for its global prominence, thrives on the precision and dedication of its vast workforce. However, beneath the glittering success lies a growing concern for the psychological well-being of the diamond workers. These individuals often face high stress, long working hours, repetitive tasks and economic pressures, which adversely impact their mental health. Despite the significant contribution of this workforce to the industry, their emotional and psychological challenges remain under-researched and unaddressed. The lack of mental health awareness, stigma around seeking help, and insufficient support systems exacerbate these issues, potentially leading to burnout, decreased productivity, and a diminished quality of life. Understanding and addressing these challenges is crucial to ensuring a healthier and more sustainable workforce.

Need of the Study

This study is essential to bridge the knowledge gap regarding the psychological well-being of diamond workers in Surat. While much research has focused on the economic and technical aspects of the diamond industry, limited attention has been paid to the human element- particularly the mental health of its workforce.

Key reasons for the study's necessity include:

1. **Highlighting Mental Health Issues:** The study aims to bring attention to the often-overlooked emotional and psychological challenges faced by diamond workers.

2. **Improving Workplace Conditions:** By understanding the stressors and their impact, this research can inform interventions to create healthier work environments.

3. **Policy Development:** Insights from the study can guide policymakers and industry leaders to implement mental health initiatives, such as counselling programs and stress management workshops.

4. **Enhancing Productivity:** Addressing psychological well-being can lead to a more motivated and efficient workforce, benefiting the industry as a whole.

5. **For Social Responsibility:** The findings can encourage the diamond industry to adopt practices that prioritize the holistic well-being of its workers.

6. **Fostering Sustainable Growth:** A mentally healthy workforce is critical for the long-term sustainability of Surat's diamond industry.

This study thus seeks to balance the industry's economic success with the emotional health and satisfaction of its workers, ensuring their well-being is as polished as the diamonds they produce.

Review of Literature

Chadha, N., & Verma, S. (2017) The study investigates workplace stress and its effects on the mental health of IT sector employees in India. The authors identify high work pressure, tight deadlines, and lack of work-life balance as significant contributors to stress. They emphasize that chronic stress leads to mental health issues like anxiety, depression, and burnout. The research highlights the importance of organizational intervention programs, such as stress management workshops and employee assistance initiatives, to address mental health challenges. It also underscores the necessity for a supportive work environment to enhance employee well-being.

The findings suggest that fostering open communication and reducing work pressure can significantly alleviate stress levels.

Gupta, S., & Bansal, S. (2019) Study focuses on mental health challenges faced by workers in India's manufacturing industry. The research identifies monotonous work, hazardous environments, and extended work hours as key stress factors. The authors find a direct correlation between poor mental health and decreased productivity. Recommendations include implementing workplace safety measures, conducting regular health check-ups, and providing counselling services. The study calls for increased awareness about mental health in industrial settings and advocates for employer-driven initiatives to create a healthier work environment. The findings stress the need for policies that prioritize workers' mental well-being.

Rai, R., & Patel, P. (2020) This study examines occupational stress and its psychological effects on employees in Indian small-scale industries. The authors highlight how limited resources, financial instability, and job insecurity amplify stress levels. Psychological consequences such as insomnia, irritability, and emotional exhaustion are reported. The research recommends training managers to recognize stress signs and to support employees. It also suggests creating employee-friendly policies to reduce workplace stress. The study emphasizes the importance of fostering a positive organizational culture, which could significantly improve workers' mental health and job satisfaction.

Mehta, V., & Sharma, A. (2018) Mehta and Sharma explore emotional well-being among Indian industrial workers, focusing on the role of work-life balance. They identify long working hours and lack of time for personal life as key factors affecting emotional health. The research highlights that maintaining a balance between professional and personal responsibilities enhances job performance and reduces stress. Strategies like flexible work hours, family-oriented policies, and stress management programs are recommended. The authors argue that organizations should focus on employee-centric approaches to improve emotional well-being, which ultimately benefits both employees and employers through better productivity and reduced turnover rates.

Kumar, P., & Yadav, R. (2021) This study investigates the psychological well-being and job satisfaction of Indian diamond workers. The authors reveal that physically demanding tasks and repetitive work lead to mental fatigue and dissatisfaction. They find that workers with higher psychological well-being exhibit better performance and workplace engagement. The study recommends providing skill enhancement programs and ergonomic improvements in the workplace. Additionally, fostering a culture of appreciation and offering mental health support services are suggested to improve satisfaction levels. The findings emphasize the need for sustainable practices in the diamond industry to ensure workers' overall well-being.

Johnson, J., & Cooper, C. (2018) This study examines the effects of stress on employee health and productivity in high-pressure industries. The authors identify time constraints, excessive workloads, and lack of autonomy as major stressors. The findings reveal that prolonged stress negatively impacts physical health, leading to issues such as hypertension and fatigue, and reduces productivity levels. Recommendations include providing stress management training, flexible work schedules, and clear communication about job expectations. The authors argue for a holistic approach that considers both physical and psychological well-being to mitigate stress and improve workplace outcomes.

Kabat-Zinn, J. (2016) explores the application of mindfulness practices in enhancing workplace mental health. The study highlights how mindfulness techniques, such as meditation and focused breathing, can reduce stress and promote emotional resilience. The findings show significant improvements in employees' mental clarity, concentration, and interpersonal relationships. The author advocates for integrating mindfulness programs into organizational frameworks to foster a supportive and stress-free work culture. The study also emphasizes that mindfulness not only benefits individuals but enhances overall workplace harmony and efficiency.

Leka, S., & Jain, A. (2017) This research focuses on workplace stress in low-wage labor markets and its psychological and social impacts. The authors identify economic instability, job insecurity, and poor working conditions as key stressors. The study reports increased rates of depression, anxiety, and social withdrawal among workers. Recommendations include introducing fair wage policies, improving workplace conditions, and providing access to mental health resources. The authors argue that addressing these stressors is essential for improving workers'

mental health and fostering social well-being. The study emphasizes the role of employers and policymakers in creating healthier work environments.

Sharma, S., & Goldsmith, T. (2019) investigate the relationship between job security, stress, and mental health among workers in developing economies. The research finds that job insecurity is a significant source of stress, leading to chronic anxiety and diminished mental well-being. The authors recommend implementing labour policies that provide job stability and worker protection. They also suggest employer-driven initiatives like counselling and mental health awareness programs. The study concludes that job security is critical for reducing workplace stress and improving mental health, particularly in economically vulnerable regions.

Harten, N., & McAuley, M. (2020) Study burnout and psychological distress among employees in high-pressure industries. The findings highlight that prolonged exposure to intense work environments leads to emotional exhaustion, reduced job satisfaction, and lower performance levels. The authors recommend addressing burnout through workplace wellness programs, regular mental health check-ups, and reducing excessive workloads. They also emphasize the importance of fostering a culture of recognition and support to alleviate psychological distress. The study suggests that addressing burnout is vital for improving employee retention and overall workplace efficiency.

Objectives of the Study:

1. To analyse the psychological effects of working pressures, financial instability, job insecurity and long working hours experienced by diamond workers.

2. To examine the relationship between working conditions, unstable diamond supply, global market trends and their impact on the mental health of diamond workers.

3. To highlight the social and psychological challenges faced by diamond workers as a result of the unique nature of their occupation.

This research study into the unique struggles faced by Surats'diamond workers, exploring the multifaceted challenges they encounter and the resilience they demonstrate.

Methodology

This study employs a qualitative research design that combines character studies and thematic analysis. This approach allows for an in-depth exploration of the personal observation-experiences and challenges faced by diamond workers in Surat, providing a detailed understanding of their psychological well-being.

Research Design

The study employs a descriptive research design to capture the psychological, social and economic factors impacting the well-being of diamond workers. A mixed-methods approach will

be adopted, combining both qualitative and quantitative methods to provide a holistic understanding of the issues.

Data Collection Methods

Primary Data Collection

- In-depth interviews and focus group discussions were conducted with selected diamond workers to gather detailed insights into their experiences.

Secondary Data Collection

- Literature from previous studies, newspaper coverage, reports from labour organizations and government publications related to the diamond industry were reviewed.

Scope of the Study

The study will focus on diamond workers in Surat, considering various aspects of their work environment, psychological well-being, and social challenges. It aims to provide actionable insights for policymakers, employers, and labour organizations to improve workplace conditions and mental health support systems.

Research Study:

1. The Illiterate Workforce

This low literacy rates is normal among diamond workers and due to monetary constraints or a lack of other educational opportunities they have only option to choose to work with diamond cutting and polishing work. These workers' years of experience have made them skilled at cutting and polishing diamonds. When it comes to modern business settings, their informal education is a challenge and learning new systems and technology is particularly challenging.

2. Long Working Hours and Working condition

Diamond workers in Surat frequently face long working hours, often exceeding the legal limit of working hours. many factories have lack of basic facilities clean drinking water facility, lighting and ventilation facilities. canteen facilities -quality of food, canteen's hygiene and cleanliness and safety and work environment This can increase stress, physical-mental health, making it difficult for workers to maintain a healthy work-life balance.

3. Shortage of Rough Diamonds

The shortage of diamond can reduce working hours or recession, terminate the worker / temporary or permanent, increasing financial uncertainty and stress. most diamond workers' salaries are calculated on a piece-rate basis rather than fixed wages, a shortage of rough diamonds can lead to increases workers stress and depression. The industry's fluctuating cycle, driven by global market fluctuations and the un-availability of rough diamonds, overloaded schedules

4. Global Factors Affecting Diamond Sales

The diamond industry is subject to the volatile of the global market, which can be influenced by factors such as economic downturns, Russia-Ukraine war and changes/demand of consumer preferences. These fluctuations can impact demand for diamonds, leading to fluctuations in wages and job security for workers.

5. Rising Cost of Living

The irregular nature of income can increases worsen financial challenges for workers. This can lead to increased stress-anxiety and depression.

6. Impact of Global Recession-Unemployment -Financial Constraints - Increase Suicide Rates

The recent global recession has had a significant impact on the diamond industry in Surat, as 95% of polished diamonds are exported. Reduced demand for diamonds has decreased production and job losses. This can increase stress and depression. According to Bhavesh Tank, president of the Diamond Workers Union Gujarat, around 65 diamond polishers attempted suicide in the past 16 months (April 2023 to July 2024). The study shows mental health challenges faced by diamond workers in the industry.

Strategies for developing Mental Well-being

Here are some potential interventions Improving Mental Well-being:

1. **Enhance Workplace Conditions:** The situation in the workplace can be improved by providing sufficient lightings, ventilation and supply of clean and readily available drinking water facilities, proper seating facilities and fire safety precaution and timely safety training

2. **Ethical HR Practices -Security and Stability:** Implement ethical HR practice and provide fair compensation, social security of provident fund, employee state insurance, statutory bonus, gratuity, workers and their families group health and group term insurance, etc. also can arrange proper guidance of financial literacy programs for post-retirement life can also provide social security and implement policy that in case of absence from work due to unemployment or disease, the individual should be able to have access to social security.

3. **Create a Positive Work Environment:** Foster an open line of communication with management and workers who feel belongingness. acknowledge workers contributions and reward and motivate with monitory benefits. Team HR can organize team bonding and social events to boost morale and relieve stress.

4. **Crisis Management and Mental Health Initiatives:** Company management can conduct mental health and stress management workshops for their workers. Implement employee assistance programs - to help employees with personal and work-related problems.

a) **Emotional-connect program:** organise emotional connect program on suicide prevention, recognizing mental health crises. Counselling/guidance can help workers to deal with stress, anxiety - depression and personal or work-related challenges.

b) **Financial crisis:** Develop strategies to manage mental health during crises like economic downturns or natural disasters.

c) **Counselling services:** Offer counselling/guidance and 24/7 crisis support via phone lines.

Limitations of the Study:

Small sample size: The sample size for qualitative research is often smaller compared to quantitative studies.

Researcher bias: The researcher's own biases and perception may influence the data.

Despite these limitations, the qualitative research design employed in this study provides a valuable understanding of the psychological well-being of diamond workers.

Findings

1. **High degrees of stress and tension:** The disturbing nature of the work, coupled with lengthy hours and production target can lead to widespread ranges of stress and tension among diamond workers.

2. **Long working hours:** can increase physical health problems, eye strain, mental blockage, memory loss etc. - worsen mental health issues.

3. **Social isolation and loneliness:** long working hours, night shift work and the annoying nature of the process can cause social isolation and emotions of loneliness. Long working hours can strain family relationships and lead to stress at home.

4. Financial insecurity and job uncertainty due to market fluctuations can lead to stress and anxiety among diamond workers.

5. **Lack of mental health support:** Many diamond workers don't have access to mental health support, which can worsen their mental health issues.

Suggestions

1. Improve workplace conditions and support for positive work environment.

2. Ethical HR practices -security and stability.

3. Create a Positive Work Environment.

4. Crisis management and mental health initiatives.

Discussion

The findings of this study emphasize the importance of financial stability, social support and work- life balance in promoting the mental health of diamond workers. Implementing strategies such as financial literacy programs, employee assistance programs and workplace wellness initiatives can significantly improve their well-being.

Conclusion

Diamond workers in Surat face a complex interplay of challenges, including financial instability, social support issues and demanding work conditions. Need for targeted interventions to promote their mental health. By addressing financial stability, social support and work-life balance, the diamond industry can create a more supportive and sustainable environment for their diamond workers.

By addressing these challenges and implementing targeted interventions, the diamond industry can create a more supportive and sustainable work environment for diamond workers.

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A Study on the Interpersonal Skills Used by Teachers with the Students

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Abstract

The theoretical of relational abilities utilized by educators with understudies investigates the significant job that relational abilities play in cultivating positive educator understudy connections and establishing a compelling learning climate. This study inspects different relational abilities that instructors use to draw in, impart, and associate with their understudies. These abilities incorporate undivided attention, sympathy, compelling correspondence, nonverbal signals, building affinity, and giving useful criticism. The theoretical further features the effect of these abilities on understudy mastering results, including scholarly execution, conduct, and generally speaking prosperity. Furthermore, this theoretical underscores the requirement for proficient improvement chances to upgrade instructors' relational abilities, as it is essential for making a steady and cooperative homeroom culture that advances understudy achievement.

INTRODUCTION

Compelling instructing includes something other than the dispersal of information; it requires the improvement of positive connections among educators and understudies. Relational abilities assume a pivotal part in cultivating these connections and establishing a helpful learning climate. As of late, there has been a developing acknowledgment of the meaning of relational abilities in instructive settings, with an emphasis on how educators draw in, convey, and interface with their understudies. This review plans to explore the relational abilities utilized by educators while communicating with their understudies and to comprehend their effect on understudy learning results, inspiration, and in general study hall elements. By analyzing the different components of relational abilities and their suggestions for educating and realizing, this exploration looks to add to the current group of information in the field of schooling and give functional experiences to educators and instructive policymakers. This review plans to explore the relational abilities utilized by educators while communicating with their understudies and to comprehend their effect on understudy learning results, inspiration, and in general study hall elements. By analyzing the different components of relational abilities and their suggestions for educating and realizing, this exploration looks to add to the current group of information in the field of schooling and give functional experiences to educators and instructive policymakers.

Relational abilities include a scope of capacities that empower educators to lay out compatibility, fabricate trust, and successfully speak with their understudies. These abilities include undivided attention, compassion, compelling verbal and nonverbal correspondence, compromise, and the capacity to establish a steady and comprehensive homeroom climate. At the point when educators have solid relational abilities, they can more readily comprehend their understudies' requirements, tailor guidance to meet individual learning styles, and make a feeling of having a place and commitment inside the study hall. Research has shown that positive instructor understudy connections altogether affect different parts of understudy advancement, including scholastic accomplishment, social-close to home prosperity, and long haul instructive results. Understudies who see their educators as steady and caring are bound to be spurred, effectively partake in class, and display positive ways of behaving. Then again, negative instructor understudy connections can prompt separation, low confidence, and diminished scholastic execution.

LITERATURE REVIEW

Velentzas and Borni (2014): This act spreads the word about normal and is finished by imparting insights, thoughts, or something like that. One can have the trades of considerations and thoughts by signals, signs, composing, and so on. Individuals are supposed to be in correspondence while examining some subject, while chatting on their phone, and so forth.

Burleson and Samter (1990), were analyzed in the teacher-student relationship. Three inquiries directed this examination: (a) concerning powerful instructing, what are understudies' impression of the significance of relational abilities and promptness ways of behaving? (b) what is the connection between understudies' impression of instructors' utilization of relational abilities, promptness ways of behaving, inspiration and learning? what's more (c) do male and female understudies vary in their view of correspondence ability and quickness ways of behaving as to significance, inspiration, and learning? Two investigations were directed.

RESEARCH METHODOLOGY

STATEMENT OF THE PROBLEM

The issue explanation in regards to relational abilities utilized by educators with understudies centers around the difficulties looked by educators in creating and really utilizing these abilities in their connections with understudies. It tends to the need to comprehend the hindrances that might ruin the turn of events and execution of successful relational abilities in the study hall. These boundaries could remember restricted preparing and support for educators for creating relational abilities, overpowering responsibility and time requirements, absence of mindfulness about the significance of relational abilities in instructing, and potential social or language obstructions inside assorted understudy populaces.

SCOPE OF STUDY

The scope of the study on interpersonal skills used by teachers with students encompasses examining the various interpersonal skills employed by teachers and their impact on teacher-student relationships and student outcomes. The study aims to explore a range of interpersonal skills such as active listening, empathy, effective communication, nonverbal cues, building rapport, and providing constructive feedback. It includes investigating how these skills are utilized in different educational settings, grade levels, and subject areas. The study may also examine the cultural and linguistic factors that influence the use of interpersonal skills across diverse student populations. It may explore how teachers adapt their interpersonal skills to accommodate students from different backgrounds and promote inclusive classroom environments.

OBJECTIVES OF THE STUDY

1) **Distinguish key relational abilities:** The review can intend to recognize and characterize the particular relational abilities that educators use to lay out sure associations with understudies.

2) **Investigate the effect on understudy prosperity:** The review can research what educators' relational abilities mean for understudy prosperity, including their confidence, certainty, and social-close to home turn of events.

3) **Give suggestions to instructive practice:** In view of the discoveries, the review can give commonsense proposals and procedures to instructors, schools, and policymakers to improve educators' relational abilities and advance positive instructor understudy connections.

RESEARCH DESIGN

Research Design	This study is a combination of Descriptive and Exploratory research
Data Collection	Primary data through a questionnaire will be collected
Sample Size	100
Sampling Method	Convenient Sampling

LIMITATIONS OF THE STUDY

• Test Size and Generalizability

• Subjectivity in Translation

• Restricted Extent of Relational Abilities

• Time Requirements and Long term Impacts

Data Analysis and Interpretation

Chart 4.1 Gender

54% 46%
- Male
- Female

Chart 4.2 Age

21% 11% 45%
23%
- 18-26
- 27-34
- 35-43
- 44-52
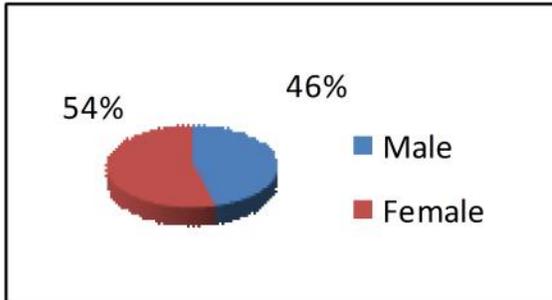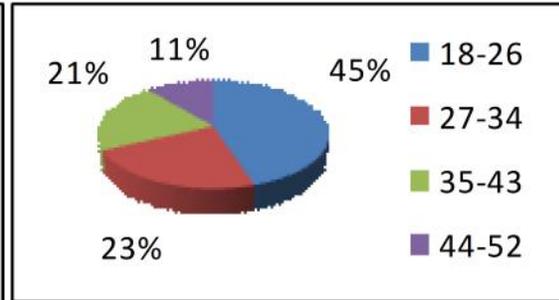
Chart 4.3 Qualifications

22% 30%
15% 19% 14%
- Student
- Under graduate
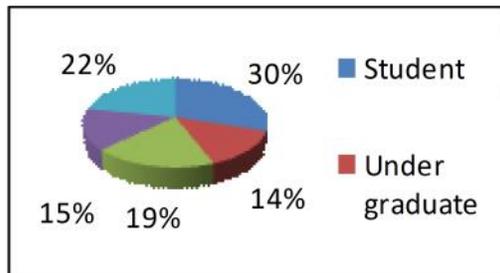
Chart 4.4 Friendly with students

23% 46%
31%
- Always
- Sometimes
- Never
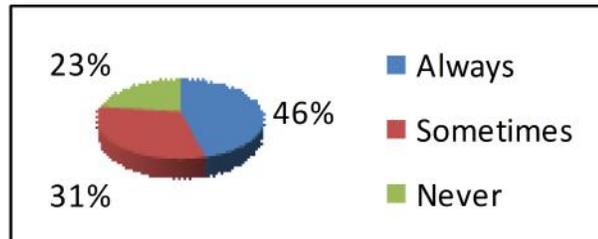
Chart 4.5 Insult students

19%
50% 31%
- Always
- Sometimes
- Never
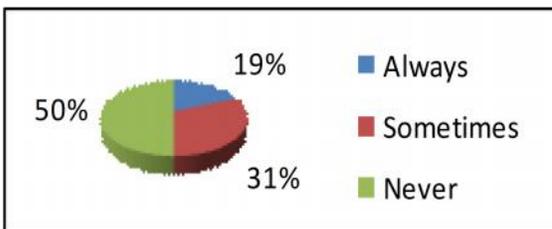
Chart 4.6 Solve students problems and and difficulties

15% 48%
37%
- Always
- Sometimes
- Never
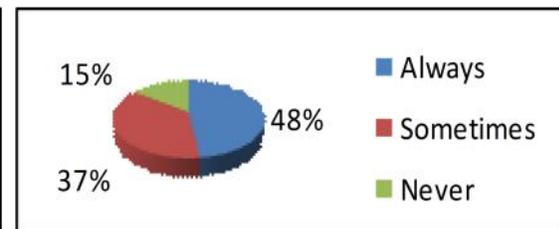
Chart 4.7 Teacher appreciate students in activity

17% 47%
36%
- Always
- Sometimes
- Never
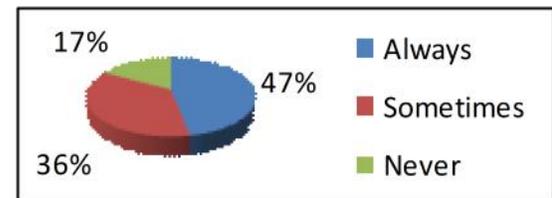
Chart 4.8 Inspire students to become achievers

14% 46%
40%
- Always
- Sometimes
- Never
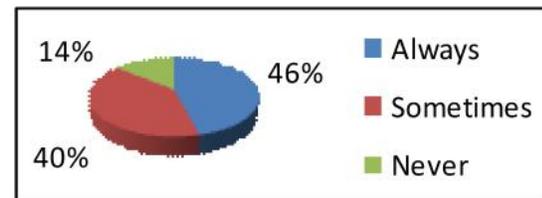
Chart 4.9 To know strength and weakness of the students

Always 49%, Sometimes 17%, Never 34%
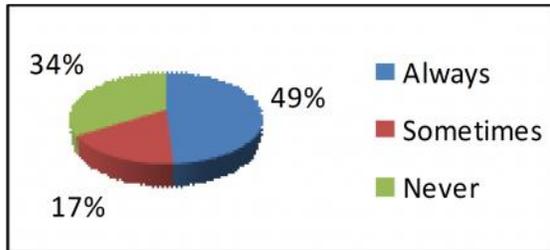
Chart 4.10 Interfere in students internal conflict

Always 23%, Sometimes 37%, Never 40%
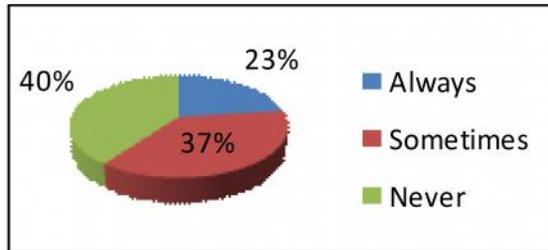
Chart 4.11 Career development of students

Always 60%, Sometimes 30%, Never 10%
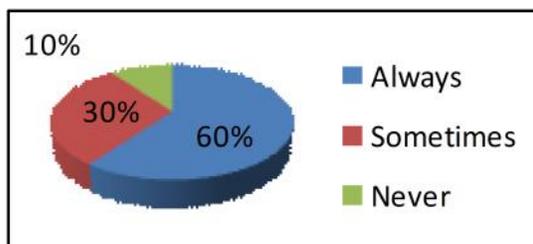
Chart 4.12 Benefits of Interpersonal skills

Always 60%, Sometimes 30%, Never 10%
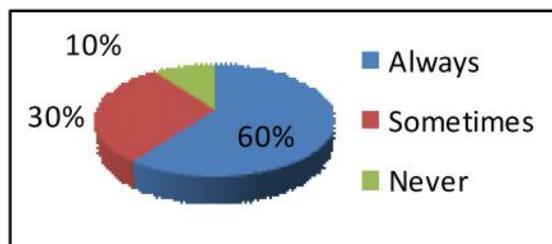
FINDINGS OF THE STUDY

1) **Positive educator understudy connections:** Exploration reliably shows that positive instructor understudy connections portrayed by trust, support, and common regard essentially affect understudy commitment, inspiration, and scholarly accomplishment. Understudies who feel associated with their educators are bound to be effectively engaged with learning and show good ways of behaving in the study hall.

2) **Sympathy and understanding:** Compassion, the capacity to comprehend and discuss the thoughts of others, is a basic relational expertise for educators. At the point when educators show compassion towards their understudies, they can all the more likely location their requirements, make a strong air, and advance social-profound prosperity.

3) **Nonverbal correspondence and non-verbal communication:** Nonverbal signals, like looks, non-verbal communication, and motions, can fundamentally affect instructor understudy collaborations. Educators who utilize positive and open non-verbal communication, keep in touch, and show warmth and agreeability will quite often cultivate better associations with their understudies.

CONCLUSION

The review underscores the significance of nonverbal correspondence and non-verbal communication, as these components can essentially impact educator understudy collaborations. Educators who display positive nonverbal signals, like receptiveness and open non-verbal communication, add to building trust and compatibility with understudies. Compromise and critical

thinking abilities were distinguished as fundamental for overseeing clashes and difficulties inside the homeroom. Educators who utilize cooperative and deferential ways to deal with compromise establish a positive and strong learning climate. While this study reveals insight into the significance of relational abilities, it is fundamental to perceive the limits and logical elements that can impact the discoveries. Test size, self-report inclinations, and the onlooker impact are potential limits that ought to be thought about when deciphering the outcomes.

All in all, the review builds up the meaning of relational abilities in the educator understudy relationship. It features the positive effect of compelling correspondence, undivided attention, sympathy, flexibility, and compromise on understudy results. By getting it and developing these relational abilities, educators can establish a comprehensive and drawing in learning climate that advances understudy achievement and prosperity. The discoveries of this study give important bits of knowledge to educator preparing programs, proficient advancement drives, and instructive arrangements pointed toward upgrading instructor understudy associations and working on instructive results.

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Advanced Tracking and Fingerprint Detection Technologies

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Abstract

The rapid evolution of technology has propelled advanced tracking and fingerprint detection systems into the forefront of security, surveillance, healthcare, and consumer applications. These technologies, driven by innovations in artificial intelligence, sensor networks, and biometric systems, have redefined how we monitor, authenticate, and secure both physical and digital environments. This chapter delves into cutting-edge advancements, including hybrid positioning systems, AI-driven object tracking, blockchain-based secure tracking, and next-generation fingerprint detection techniques such as ultrasound imaging and multimodal biometrics. It also explores the integration of these technologies into critical domains like law enforcement, healthcare, and smart devices, highlighting their transformative potential.

While the benefits of these systems are immense, they also pose significant challenges, including privacy concerns, system vulnerabilities, and ethical considerations. This chapter addresses these complexities and emphasizes the importance of balancing technological innovation with robust data protection and ethical practices. Finally, it presents a forward-looking perspective on emerging trends such as quantum security and AI-powered systems, offering a roadmap for harnessing these technologies responsibly to enhance global security and convenience.

1. Introduction

In an increasingly digital world, the need for advanced tracking and fingerprint detection systems has never been more critical. From law enforcement and security to e-commerce and healthcare, these technologies are playing a pivotal role in various sectors, enhancing safety, privacy, and operational efficiency. This chapter explores cutting-edge techniques in tracking technologies and fingerprint detection, focusing on their applications, advancements, and challenges.

2. Advanced Tracking Technologies

Tracking technology refers to the use of specialized systems to locate or follow objects, people, or data in real-time. The evolution of tracking technologies has been fueled by advancements in wireless communication, sensor networks, and artificial intelligence (AI). This section explores some of the most significant advancements in tracking systems.

2.1. Global Positioning System (GPS) and Beyond

GPS is the most widely used tracking technology, offering precise location data via satellites. However, GPS has limitations, such as poor indoor signal penetration and dependency on satellite availability. Recent advancements have introduced the following improvements:

- **Hybrid Positioning Systems:** Combining GPS with other technologies like Wi-Fi, Bluetooth Low Energy (BLE), and cellular networks to improve accuracy in urban environments and indoor spaces.

- **Real-Time Kinematic (RTK) GPS:** A high-precision positioning technology that offers centimeter-level accuracy, ideal for applications requiring highly accurate positioning, such as autonomous vehicles and drones.

- **Indoor Positioning Systems (IPS):** Utilizing Bluetooth, Ultra-Wideband (UWB), or magnetic field sensing to track objects indoors where GPS signals are weak or non-existent.

2.2. AI-Driven Object Tracking

Artificial intelligence has revolutionized tracking systems by enhancing their ability to track dynamic objects (e.g., moving vehicles or people) through the use of computer vision and machine learning. Key developments include:

- **Object Detection and Tracking with Deep Learning:** AI models such as Convolutional Neural Networks (CNNs) are used to identify and track objects in video feeds, allowing for real-time surveillance and analysis.

- **Multi-Object Tracking (MOT):** Advanced algorithms that can track multiple objects simultaneously across video frames, improving accuracy in crowded environments or complex scenarios.

- **Fusing Data Streams:** AI algorithms can now merge data from multiple sensors (e.g., GPS, cameras, LiDAR) to improve the robustness and precision of tracking systems.

2.3. Blockchain for Secure Tracking

Blockchain technology is increasingly being explored for secure tracking, particularly in supply chains and logistics. By leveraging blockchain's decentralized and tamper-resistant features, companies can track the movement of goods, assets, and even individuals while ensuring data integrity and security.

3. Fingerprint Detection Technologies

Fingerprint detection is one of the oldest and most reliable methods of biometric identification. Over the years, fingerprint detection systems have evolved from simple manual methods to highly sophisticated automated systems that are used in various sectors such as law enforcement, border control, and personal security. The following are recent advancements in fingerprint detection:

3.1. Optical Fingerprint Scanners

Optical fingerprint scanners have been around for many years, using light to capture the ridges and valleys of a fingerprint. However, newer models have become more advanced in:

• **Higher Resolution Imaging:** Modern optical scanners offer higher resolutions, capturing more detailed information for greater accuracy in fingerprint matching.

• **3D Fingerprint Imaging:** Some systems now create three-dimensional images of fingerprints, allowing for more detailed analysis, especially for partial or damaged prints.

3.2. Capacitive Fingerprint Scanners

Capacitive sensors use electrical currents to detect fingerprints by measuring the differences in electrical charge between the ridges and valleys of a fingerprint. These systems are more secure than optical scanners because they are less susceptible to spoofing (e.g., using fake fingerprints). Advancements include:

• **Improved Fingerprint Matching Algorithms:** Enhanced algorithms increase the speed and accuracy of matching fingerprints, even in large databases.

• **Integration with Mobile Devices:** Capacitive scanners are now commonly used in smartphones and other portable devices for secure authentication.

3.3. Thermal and Ultrasound Fingerprint Scanning

Thermal and ultrasound fingerprint sensors are newer technologies that detect fingerprints based on heat patterns and sound waves, respectively. These methods offer increased security because they are harder to spoof with artificial prints. Specific advancements include:

• **Thermal Fingerprinting:** This technique captures the temperature variations in the ridges and valleys of a fingerprint, making it less susceptible to environmental factors.

• **Ultrasound Imaging:** Ultrasound technology uses sound waves to capture detailed fingerprints, providing high resolution and the ability to scan through dirt or skin conditions.

3.4. Multimodal Biometric Systems

Multimodal biometrics involve the use of more than one biometric trait (e.g., fingerprints combined with facial recognition or iris scanning) to enhance security. These systems are more resistant to spoofing and offer higher accuracy rates. Recent innovations include:

• **Fingerprint + Facial Recognition:** Combining fingerprint scanners with facial recognition technology, offering a more robust authentication method for personal devices.

• **Finger Vein Scanning:** Some systems now use vein patterns in the fingers, along with fingerprint recognition, to ensure that the person is indeed who they claim to be.

4. Applications of Advanced Tracking and Fingerprint Detection

4.1. Security and Law Enforcement

The most critical use of both advanced tracking and fingerprint detection technologies lies in security and law enforcement. Tracking systems help monitor suspects, while fingerprint detection plays a vital role in criminal investigations, ensuring that perpetrators can be identified and brought to justice. Additionally:

- **Smart Surveillance Systems:** Integrating advanced tracking with AI-based surveillance cameras can automate criminal detection in public spaces.

- **Forensic Identification:** Fingerprint detection is crucial in identifying criminals, even from partial or damaged fingerprints found at crime scenes.

4.2. Healthcare and Access Control

Both fingerprint recognition and tracking technologies are increasingly used in healthcare and access control. Fingerprint detection ensures secure access to medical records and pharmaceuticals, while tracking systems monitor the movement of patients and staff within healthcare facilities.

- **Biometric Authentication:** Hospitals and clinics use fingerprint detection for secure patient identification and access to sensitive health data.

- **Patient Tracking:** Tracking technologies help monitor patients with chronic conditions, ensuring they remain within safe boundaries or receive immediate assistance if needed.

4.3. Consumer Applications

With the rise of smart devices, advanced tracking and fingerprint detection systems are also used in consumer technology.

- **Smartphones and Laptops:** Biometric fingerprint authentication is widely used for device security and payment systems (e.g., Apple Pay, Google Pay).

- **E-commerce Logistics:** Advanced tracking systems are used to monitor the real-time location of packages, improving delivery efficiency and customer experience.

5. Challenges and Ethical Considerations

5.1. Privacy Concerns

One of the most significant challenges with both tracking and fingerprint detection technologies is the potential invasion of privacy. The collection and storage of biometric data and tracking information pose significant risks if compromised.

- **Data Protection Laws:** Many countries have enacted stringent regulations (e.g., GDPR) to govern the use of biometric data and ensure that personal information is protected.

5.2. Accuracy and Reliability

Although modern systems offer high accuracy, they are not infallible. Issues such as sensor quality, environmental factors (e.g., lighting, skin conditions), and interference can affect the reliability of both tracking and fingerprint detection systems.

- **Spoofing and False Positives:** Advanced spoofing techniques, such as using fake fingerprints or tampering with tracking devices, pose security risks.

- **System Vulnerabilities:** Both tracking and fingerprint systems must be designed to withstand attempts to deceive or bypass security measures.

6. Future Trends

The future of advanced tracking and fingerprint detection will likely see a fusion of multiple technologies, including:

- **AI-Powered Systems:** AI and machine learning will continue to enhance the accuracy and efficiency of both tracking and biometric systems.

- **Wearable Tracking Devices:** The proliferation of wearable devices will lead to more real-time, personalized tracking systems for health monitoring, asset tracking, and security.

- **Quantum Security:** The development of quantum computing may redefine encryption techniques, ensuring more secure storage and transmission of biometric data.

7. Conclusion

Advanced tracking and fingerprint detection systems are at the forefront of technological innovation, offering vast potential across numerous industries. As these technologies evolve, they will continue to enhance security, convenience, and accuracy, though ethical, privacy, and technological challenges must be carefully managed. By embracing these advancements while balancing the need for security and privacy, we can ensure that these systems provide value to society without compromising individual rights.

Advances in Biometric Security: Integrating Multimodal Systems for Safe Authentication

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Abstract

Biometric authentication systems have revolutionized identity verification by leveraging unique physical and behavioural traits such as fingerprints, facial features, iris patterns, and voice. Despite their widespread use, unimodal biometric systems often face challenges such as susceptibility to spoofing, environmental dependencies, and limited reliability in edge cases. To address these limitations, multimodal biometric systems have emerged as a robust solution by integrating two or more biometric modalities. This chapter explores the advances in biometric security with a focus on multimodal systems, highlighting their ability to enhance accuracy, reduce error rates, and resist fraudulent attacks.

The chapter delves into the key technologies enabling multimodal systems, including feature extraction techniques, matching algorithms, and fusion strategies at sensor, feature, and decision levels. It examines the benefits of multimodal authentication, such as improved security, flexibility, and adaptability to user and environmental variations. Furthermore, challenges related to implementation complexity, cost, data privacy, and user acceptance are discussed.

Finally, the chapter outlines future trends in multimodal biometric security, emphasizing the role of artificial intelligence, wearable devices, behavioural biometrics, and privacy-enhancing technologies. As the demand for secure and user-friendly authentication continues to grow, multimodal systems are poised to play a critical role in safeguarding digital and physical assets across diverse domains.

Introduction

Biometric security systems have become increasingly popular in ensuring safe and seamless authentication in a wide range of applications-from mobile devices to banking systems, government services, and beyond. To confirm identity, biometrics use distinctive human characteristics including voice patterns, facial features, fingerprints, and even iris scans. While individual biometric modalities have proven effective in many cases, they are often vulnerable to certain attacks and can be affected by factors like environmental conditions or changes in the user's physical state.

In response to these challenges, multimodal biometric systems have emerged as a solution. These systems combine two or more biometric modalities to improve the reliability, security, and

accuracy of user authentication. By leveraging multiple sources of biometric data, multimodal systems aim to overcome the limitations of individual modalities, providing a more robust and fraud-resistant alternative for identity verification.

This chapter explores the advances in biometric security, focusing on the integration of multimodal biometric systems to enhance authentication processes. We will delve into the key technologies, benefits, challenges, and future trends in multimodal biometric security.

Overview of Biometric Authentication

Biometric authentication refers to the process of identifying or verifying individuals based on unique physical or behavioral characteristics. Common biometric modalities include:

- **Fingerprint Recognition:** One of the oldest and most widely used biometric modalities, fingerprint recognition scans the ridges and valleys on a finger's surface to create a unique identifier.

- **Facial Recognition:** This modality analyzes facial features such as the distance between the eyes, nose, and mouth to identify or verify a person.

- **Iris Scanning:** Iris recognition uses unique patterns in the colored part of the eye to create an individual biometric template.

- **Voice Recognition:** Voiceprints are unique to individuals and can be used to verify identity by analyzing features such as pitch, tone, and cadence.

- **Hand Geometry**: Measures the shape, size, and dimensions of the hand to provide a distinct biometric signature.

- **Signature Dynamics**: Analyzes the way a person writes or signs their name, including speed, pressure, and stroke patterns.

Each modality has its advantages and challenges. For instance, fingerprints and facial recognition are highly convenient but can be susceptible to spoofing, while iris and voice recognition offer a higher level of security but may be influenced by environmental factors like lighting or background noise.

The Need for Multimodal Biometric Systems

While individual biometric modalities have their advantages, relying on a single biometric source can lead to errors, such as:

- **False Acceptances (FAR):** Incorrectly accepting an unauthorized user.

- **False Rejections (FRR):** Incorrectly rejecting a legitimate user.

- **Spoofing:** Attacks where fake biometric traits are presented to the system (e.g., fake fingerprints or facial images).

These issues arise because individual biometric systems can be vulnerable to environmental conditions, sensor quality, and user-specific factors like injury or aging. For example, poor lighting may hinder facial recognition accuracy, and cuts or dirt on fingers can affect fingerprint scanners.

To mitigate these issues, multimodal biometric systems integrate multiple biometric modalities, which improves:

- **Accuracy and Reliability:** By combining multiple sources of data, the system can compare and cross-verify features, reducing the likelihood of errors.

- **Resistance to Spoofing and Fraud:** An attacker would need to spoof multiple biometric traits, making it exponentially harder to bypass the system.

- **User Convenience and Flexibility:** Multimodal systems can offer alternative authentication options depending on the situation or user's condition.

Key Technologies for Multimodal Biometric Systems

Several core technologies are involved in the development and functioning of multimodal biom**etric systems:**

- **Feature Extraction:** Each biometric modality requires a unique feature extraction process to capture relevant data. For example, in fingerprint recognition, minutiae points (ridge endings and bifurcations) are extracted, while facial recognition focuses on unique geometric features of the face.

- **Matching Algorithms:** After extracting features, the system uses matching algorithms to compare the input biometric data against the stored templates. Common algorithms include machine learning techniques like support vector machines (SVM), deep learning-based methods, and classical algorithms like K-nearest neighbors (K-NN).

- **Fusion Techniques:** The real power of multimodal systems lies in the fusion of data from different modalities. Fusion can be performed at different levels:

    - **Sensor Level:** Raw data from multiple biometric sensors is combined before feature extraction.

    - **Feature Level:** Features extracted from different modalities are combined into a single feature vector.

    - **Decision Level:** Independent decisions are made for each modality, and a final decision is made based on a voting or rule-based system.

- **Data Storage and Management:** Multimodal biometric systems require robust storage solutions for multiple templates and efficient retrieval mechanisms. Techniques like cloud-based storage, encryption, and secure data management protocols are essential to protect sensitive biometric data.

Benefits of Multimodal Biometric Systems

- **Enhanced Accuracy and Reduced Error Rates:** By combining data from multiple modalities, multimodal systems can significantly improve both the False Acceptance Rate (FAR) and False Rejection Rate (FRR), ensuring more accurate and reliable authentication.

- **Improved Security:** With the integration of multiple biometric traits, the system becomes more resistant to spoofing and other types of attacks. Even if an attacker successfully mimics one modality, it is unlikely that they can spoof all the required traits.

- **User Flexibility:** Multimodal systems allow users to authenticate using different modalities depending on the situation. For example, facial recognition might be used in a public setting, while fingerprint scanning could be used for more secure access.

- **Adaptability to Changing Conditions:** Multimodal systems can adapt to changes in the user's condition or environment. For instance, if a user has a cut on their finger, the system could fall back on facial recognition or voice authentication.

Challenges in Implementing Multimodal Biometric Systems

- **Complexity and Cost:** Integrating multiple biometric sensors, algorithms, and storage solutions increases the complexity and cost of implementation. Organizations need to balance security with financial feasibility.

- **Data Privacy Concerns:** Collecting multiple biometric traits raises concerns about user privacy and data security. It is critical that data is encrypted and stored securely to prevent breaches.

- **User Acceptance:** Some users may be hesitant to provide multiple types of biometric data due to concerns over privacy and the potential for misuse.

- **Interoperability:** Different modalities may require different hardware and software solutions, leading to compatibility and integration challenges.

Future Trends in Multimodal Biometric Authentication

The future of multimodal biometric authentication is poised for significant growth with the advent of new technologies. Some of the key trends include:

- **Integration with AI and Machine Learning:** AI can enhance the accuracy of multimodal biometric systems by improving feature extraction, matching algorithms, and decision fusion. Machine learning models can adapt to changing user characteristics over time.

- **Wearables and IoT Devices:** The rise of wearable devices and IoT technology offers new opportunities for integrating biometrics, such as continuous authentication through motion sensors, heart rate monitors, and other wearable sensors.

- **Privacy-Enhancing Techniques:** New privacy-preserving biometric systems, such as homomorphic encryption or secure multi-party computation, are being developed to protect user data while ensuring security.

- **Behavioral Biometrics:** In addition to physical traits, behavioral biometrics such as keystroke dynamics, gait recognition, and mouse movement patterns are being explored to provide continuous authentication.

Conclusion

Multimodal biometric authentication represents a significant advancement in security technology. By integrating multiple biometric modalities, systems can provide more reliable, accurate, and secure solutions for identity verification. While there are challenges to address, such as cost, complexity, and privacy concerns, the continuous evolution of biometric technologies, combined with advancements in AI and machine learning, will pave the way for highly secure and user-friendly authentication systems in the future.

As multimodal biometric systems become more prevalent, their role in safeguarding critical infrastructure and personal data will be indispensable in the ongoing battle against fraud, identity theft, and cybercrime.

AI Trust, Risk, and Security Management (AI TRiSM): A Detailed Framework for Building Trust, Managing Risks, and Ensuring Compliance Across Critical Sectors

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Abstract

Artificial Intelligence (AI) is revolutionizing sectors such as finance, healthcare, and retail, offering new capabilities for decision-making, personalization, and automation. However, as AI becomes increasingly integrated into high-stakes industries, the need for frameworks to ensure trust, risk management, and regulatory compliance has never been more critical. AI Trust, Risk, and Security Management (AI TRiSM) provides a structured approach to address these needs. This paper delves into the importance of AI TRiSM, emphasizing how it can guide organizations in building transparent, secure, and ethically sound AI systems. By focusing on case studies and real-world applications, we explore the role of AI TRiSM in managing risks, ensuring compliance with regulations like GDPR and HIPAA, and maintaining fairness across AI systems.

1. Introduction

AI's integration into industries such as finance, healthcare, and retail is changing how businesses operate and interact with customers. The immense power of AI also comes with significant risks, ranging from ethical issues like biased decision-making to security vulnerabilities and regulatory challenges. As a result, developing robust frameworks like AI TRiSM is essential to ensure AI systems meet regulatory standards and societal expectations.

1.1 The Urgent Need for AI TRiSM

The adoption of AI technologies in critical sectors has led to increased regulatory scrutiny, ethical debates, and concerns over the security of AI systems. These risks highlight the urgent need for a framework like AI TRiSM that balances the potential benefits of AI with the imperative to protect privacy, ensure fairness, and manage operational risks.

2. AI Trust: Ensuring Transparency, Accountability, and Ethical Standards

Trust is the bedrock of AI adoption. In order to create systems that users, stakeholders,

and consumers trust, AI systems must be transparent, accountable, and adhere to strong ethical principles.

2.1 Building Blocks of Trust in AI

2.1.1 Transparency: Unlocking the Black Box of AI

AI systems, particularly machine learning (ML) models, are often referred to as "black boxes" because their decision-making processes are not always visible to users. In sectors like healthcare or finance, this lack of transparency can result in significant ethical and legal concerns, especially when the outcomes directly affect individuals' health or financial well-being.

Transparency Strategies:

- **Model Explainability:** Using explainable AI (XAI) techniques like LIME (Local Interpretable Model-Agnostic Explanations) and SHAP (Shapley Additive Explanations), which help deconstruct AI predictions and make them interpretable to users.

- **Documentation and Audit Trails:** Ensuring that data, models, and decisions are well-documented. This includes tracking how models were trained, which data was used, and why certain decisions were made, making it easier to trace errors and correct them.

- **Open-Source Models:** Increasingly, organizations are opting to open-source their models or at least the methodologies they use, ensuring transparency in how algorithms are constructed and refined.

2.1.2 Accountability: Who Owns the Decision?

Clear accountability ensures that when an AI system makes an error, there is an identifiable party who is responsible for addressing the issue.

Accountability Measures:

- **AI Governance Structures:** Organizations should establish a dedicated AI governance board or oversight body that is responsible for monitoring AI system performance, ensuring compliance with ethical standards, and managing risk. This could involve roles like Chief AI Officer (CAIO), ethical review boards, or AI risk management teams.

- **Liability Frameworks:** Developing clear frameworks for liability, ensuring that companies are held accountable for decisions made by their AI systems, particularly when these decisions impact consumers' lives, such as in credit scoring or healthcare diagnostics.

- **Traceable AI Models:** By creating traceable models with built-in logs, organizations can ensure that AI systems can be audited for accountability. This approach also allows for tracing any faults to specific parts of the decision-making process, whether in data preprocessing, feature engineering, or model tuning.

2.1.3 Fairness: Addressing Bias and Discrimination

AI systems, if not carefully designed, can perpetuate or even exacerbate biases present in the data they are trained on. For example, biased loan approval algorithms can unfairly discriminate against certain demographics. Ensuring fairness is critical to maintaining trust, especially in sectors like finance and healthcare.

Fairness Measures:

- **Bias Detection:** Implementing bias detection algorithms and fairness tools (such as IBM's AI Fairness 360) to identify and mitigate biases in training data and model outputs.

- **Diverse and Representative Data:** Ensuring that AI models are trained on diverse datasets that represent a wide array of demographic, cultural, and socioeconomic groups. This is particularly important in sectors like finance (e.g., ensuring credit scoring models don't unfairly disadvantage minority groups).

- **Fairness Audits:** Regularly auditing AI models for fairness across multiple dimensions (gender, race, socioeconomic status) to ensure that they operate equitably in decision-making.

2.1.4 Ethical AI: Aligning AI with Societal Values

Ethics in AI extends beyond avoiding biases and ensuring fairness-it's about aligning AI decision-making processes with fundamental societal values such as autonomy, privacy, and well-being.

Ethical Principles for AI:

- **Autonomy:** AI systems should be designed to respect user autonomy. For instance, in healthcare, AI tools should support doctors without replacing their judgment, allowing patients to remain the ultimate decision-makers regarding their treatment.

- **Non-Maleficence:** AI systems should not cause harm. This includes ensuring that healthcare AI doesn't result in misdiagnoses, financial AI doesn't lead to credit discrimination, and retail AI doesn't infringe on consumer privacy.

- **Beneficence:** AI should aim to improve people's lives. This involves using AI to increase access to services (e.g., affordable healthcare, fair lending) while maintaining a high standard of care.

3. Risk Management in AI Systems: Proactively Identifying and Mitigating Potential Hazards

AI systems present several risks, including operational risks, security vulnerabilities, and ethical concerns. A robust AI TRiSM framework helps manage these risks by providing clear strategies and tools for mitigation.

3.1 Types of Risks Associated with AI

3.1.1 Operational Risks

Operational risks arise when AI systems fail to perform as expected. These risks include inaccuracies due to poor data quality, model drift, or underperformance of the AI model.

Mitigating Operational Risks:

- **Continuous Monitoring:** Implementing real-time monitoring systems to track the performance of AI models. This allows for early detection of model drift or performance degradation, which is especially critical in high-risk sectors like finance and healthcare.

- **Version Control for AI Models:** Keeping track of all AI model versions, ensuring that changes made to models are logged, and can be rolled back if necessary.

- **Stress Testing:** AI models should undergo rigorous testing to ensure that they perform well under different scenarios, including edge cases and atypical inputs.

3.1.2 Security Risks

Security risks are a major concern as AI systems become targets for adversarial attacks, data breaches, and exploitation.

Security Mitigation Strategies:

- **Adversarial Robustness:** Protecting models from adversarial attacks using techniques like adversarial training, where models are trained with adversarial examples to increase their resilience.

- **Data Encryption and Access Control:** Ensuring that sensitive data used by AI models is encrypted both in transit and at rest, and that strict access control mechanisms are in place to protect against unauthorized use or tampering.

- **AI Threat Modeling:** Identifying potential security threats to AI systems and designing defenses against them. This includes defending against model inversion, data poisoning, and adversarial manipulation of inputs.

3.1.3 Reputational Risks

Reputational risks stem from the consequences of biased, unethical, or harmful AI behavior. A financial institution whose AI system discriminates against certain demographics can suffer long-lasting reputational damage.

Mitigating Reputational Risks:

- **Transparent Communication:** Companies should openly communicate how AI systems are used, how they are monitored, and how risks are managed.

- **Crisis Management Plans:** Having an action plan for quickly addressing any negative consequences from AI system failures, whether from a legal, ethical, or reputational standpoint.

3.2 Risk Management Frameworks

To manage AI-related risks effectively, organizations must employ structured frameworks:

- **AI Audits:** Regular audits of AI models to evaluate compliance with ethical guidelines and regulatory standards, ensuring that AI systems are performing as intended.

- **Human-in-the-Loop (HITL):** In critical areas like healthcare and finance, AI systems should involve human oversight to make final decisions, ensuring that AI complements rather than replaces human judgment.

- **Failure Mode Analysis:** Analyzing potential failure modes of AI systems to predict and mitigate catastrophic failures before they occur.

4. Ensuring Security and Compliance in AI Systems

Security and compliance with regulatory frameworks like GDPR (General Data Protection Regulation) and HIPAA (Health Insurance Portability and Accountability Act) are vital to maintaining trust in AI technologies, especially in sectors handling sensitive data.

4.1 Security Compliance and Ethical Data Usage

AI TRiSM ensures that AI systems adhere to strict data privacy and security standards, ensuring that sensitive data-especially in sectors like healthcare and finance-is protected.

Security Compliance Measures:

- Data Anonymization: Ensuring that personal information is anonymized or pseudonymized in AI systems to prevent the identification of individuals from datasets.

- Regulatory Audits: Regular audits to ensure that AI systems are compliant with relevant data protection laws such as GDPR in Europe or HIPAA in the U.S. These audits track data flows, consent management, and security protocols.

4.2 Regulatory Challenges in Different Sectors

4.2.1 Finance Sector

AI in finance must comply with stringent regulations like GDPR (for EU data privacy), Basel III (for financial stability), and MiFID II (for trading transparency). Compliance ensures not only legal adherence but also the maintenance of customer trust.

4.2.2 Healthcare Sector

In healthcare, AI applications must comply with HIPAA (in the U.S.) or GDPR (for EU-based organizations). AI systems must protect patient data and respect medical ethics, ensuring that AI systems align with medical privacy laws and patient confidentiality.

4.2.3 Retail Sector

AI systems in retail must comply with GDPR to protect consumer data, as well as other local and regional data protection regulations. AI systems used in consumer-facing applications must be transparent, respectful of privacy, and avoid manipulating customers through intrusive personalization tactics.

5. AI TRiSM in Practice: Case Studies and Sector-Specific Applications

5.1 Financial Sector: AI for Credit Scoring and Fraud Detection

AI systems are transforming the financial industry by streamlining credit scoring and improving fraud detection. However, managing the risks associated with biased models and ensuring compliance with regulations like GDPR and Basel III remains a challenge.

Case Study: AI in Credit Scoring

- **Challenge:** Ensuring fairness in AI-driven credit scoring systems to avoid discrimination based on race or gender.
- **AI TRiSM Application:** Implementing fairness audits and transparency tools to monitor the decision-making process.

5.2 Healthcare Sector: AI in Diagnostics and Patient Care

AI systems are being used to aid in diagnostics and personalize patient care. However, regulatory compliance, privacy, and ensuring no harm are significant challenges.

Case Study: AI in Radiology

- **Challenge:** Ensuring AI tools assist radiologists without replacing human oversight.
- **AI TRiSM Application:** Using human-in-the-loop (HITL) systems, where AI provides recommendations but human doctors make final diagnostic decisions.

5.3 Retail Sector: AI for Personalized Shopping Experiences

AI in retail improves personalized shopping experiences but raises concerns over customer data privacy.

Case Study: AI in Retail Personalization

- **Challenge:** Protecting customer privacy while personalizing experiences.

- **AI TRiSM Application:** Implementing transparent data usage policies and compliance with GDPR to ensure ethical AI use.

6. Conclusion

AI TRiSM provides a comprehensive approach to building trust, managing risks, and ensuring compliance with regulatory standards in AI systems. By addressing transparency, accountability, security, fairness, and ethical concerns, AI TRiSM helps ensure that AI technologies are deployed responsibly and in a manner that benefits both businesses and consumers. As AI continues to evolve, the frameworks and strategies of AI TRiSM will become even more critical in safeguarding the future of AI-driven innovations across sectors.

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A Study on Valuation of IT Sector Securities Using CAPM Model

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Abstract

While making any investment decisions especially in equity market, risk and return plays an important role perhaps the most relevant question is which stocks should be placed in the portfolio and are those stocks underpriced or overpriced. A good combination of equity stocks in the portfolio will give better return for a given level of risk.

The study consists of top 10 Indian IT sector securities. The primary objective of the study is valuation of IT sector securities using CAPM model. Secondary objectives are i) To Compare expected return with estimated return. ii) To know which securities are underpriced and overpriced. And iii) to provide portfolio techniques for getting higher return on investment. Descriptive research design and secondary data have been used for the study. Out of 10 IT companies tata consultacy servies gives the highest return. Mphasis has the highest beta. After calculation of expected and actual return it has been found that Mphasis have the highest actual return than any other selected companies. Further while considering undervalued and overvalued securities, it has been found that all the securities of top 10 IT sector securities are undervalued.

Key Words: Systematic risk, beta, estimated return, actual return, securities, IT sector, underpriced, over priced

Introduction

The Capital Asset Pricing Model (CAPM) remains a cornerstone of modern finance, offering crucial insights into the relationship between risk and expected returns in today's global markets. By quantifying the expected return of an asset based on its systematic risk (beta) relative to the market, CAPM helps investors and financial professionals make informed decisions about portfolio construction, asset pricing, and risk management. In an increasingly interconnected and volatile financial landscape, where market participants seek efficient ways to balance risk and return, CAPM provides a systematic framework for estimating required rates of return, evaluating investment opportunities, and assessing the performance of assets in diverse economic conditions. Its relevance extends beyond traditional asset pricing to applications in corporate finance, portfolio management, and strategic financial planning, making CAPM indispensable in navigating uncertainties and maximizing returns in today's complex investment environment.

Assumptions of CAPM

The Capital Asset Pricing Model (CAPM) relies on several key assumptions to establish its framework and validity. These assumptions simplify the model and allow it to derive the relationship between risk and expected return for assets. Here are the primary assumptions of the CAPM model:

1. Efficient Markets

- All investors have access to the same information and make decisions rationally.

- Securities are traded in perfectly competitive markets with no restrictions like taxes, transaction costs, or regulations.

2. Risk-Free Borrowing and Lending

- Investors can lend or borrow unlimited amounts at a single, risk-free rate of return.

3. Mean-Variance Optimization

- Investors evaluate portfolios based solely on expected returns (mean) and standard deviation (variance) of returns, following the Markowitz efficient frontier.

4. Homogeneous Expectations

- All investors have identical expectations regarding asset returns, variances, and correlations (same estimates for risk and return).

5. Single-Period Investment Horizon

- The model assumes a single-period framework where all investors have the same time horizon.

6. Risk-Aversion

- Investors are risk-averse, seeking to maximize expected return for a given level of risk or minimize risk for a given level of expected return.

7. Market Portfolio

- All investors hold a proportion of the same market portfolio of risky assets, which is fully diversified and includes all available assets in the market.

8. No Taxes or Transaction Costs

- There are no taxes on returns or costs associated with buying and selling securities.

9. Security Divisibility

- All securities are infinitely divisible, meaning investors can buy or sell fractional shares.

10. No Arbitrage Opportunities

- The model assumes there are no arbitrage opportunities in the market, ensuring equilibrium prices.

Literature Reviews

Krunal Patel, Joshi Devanshi, Vekariya Tanvi (Krunal Patel, 2022) A Study on CAPM Model on FMCG Sector of FMCG This study considered as 4th largest sector in the Indian frugality. This exploration has been done on the 15 stocks named from the FMCG indicator on NSE. The yearly data used in this study spans the period of January 1, 2019, to August 31, 2022. From the exploration, they have set up that some of the companies are furnishing decent returns by taking redundant threat again. One of the companies is furnishing lower return as compared to other stocks although the threat is high.

Namratawagle (wagle, 2023) The study investigates the relationship between firm-specific style attributes and the cross-section of equity returns on the National Stock Exchange in India over the period from March 2001 to March 2021. The linear expected returns forecasting model is constructed based on the cross-section of equity returns The model identifies the Cash Flow to Current Liabilities Ratio and the Current Ratio as significant style attributes that distinguish future share returns on the NSE. The results of the research provide potential alpha-generating stock selection techniques for active portfolio managers in the Indian stock markets using the linear approach

Jorge Armando Bedoya-Cadavid (Jorge Armando, 2023) Their article aims to contribute to existing knowledge on the relationship between risk and return for electric power infrastructure companies in Latin America. It compares CAPM with Electric-6, a multifactor model composed of six common risk factors. Our Electric-6 model presented a greater explanatory power of the portfolio returns developed with power companies in Colombia, Chile, Peru, Brazil, and Argentina in periods of varying political and economic stability. The results of this study provide input for decision making regarding investments in power infrastructure and aid regulatory commissions in upcoming rate reviews for establishing new methodologies to calculate cost of capital.

Baitali Paul (Abhishek Dutta, 2023) In this research paper, an attempt has been made to analyse the performance of select ESG for 24 months after the outbreak of Covid-19 based on return and risk evaluation. This secondary data-based analysis includes four ESG funds and uses tools like "Compound Annual Growth Rate (CAGR)", "Standard Deviation", "Sharpe Ratio", "Treynor Ratio", "Alpha", "Beta" and "coefficient of determination". The study expects to benefit the stakeholders in choosing appropriate ESG scheme. In terms of "CAGR", "Sharpe Ratio" and "Treynor Ratio" most of the funds have underperformed. Most of the funds are defensive during both time frames. For the entire time the degree of diversification is quite satisfactory for most of the funds

Research Methodology

Objectives:

To Compare expected return with estimated return.

To know which securities are underpriced and overpriced.

To of provide portfolio techniques for getting higher return on investment

Research design: descriptive research design has been used for the study

Data collection method: secondary data from NIFTY IT has been considered.

Sample size: top 10 companies of IT sector has been chosen.

Sampling period: historical data from 1st January to 31st December 2023 has been taken in consideration.

Data Analysis and Interpretation

Table1 standard deviation, beta, expected return and actual return

COMPANY	Standard Deviation	Beta	Expected Return	Actual Return
Tata consultancy services (TCS)	1.1493	0.6134	0.0533	0.0203
Infosys	1.4815	0.8957	0.0627	0.0296
Hcl technologies	1.2873	0.3361	0.0442	0.0111
Wipro limited	1.2360	0.4339	0.0474	0.0143
Larsen & tourbro infotech	1.5291	0.4248	0.0471	0.0140
Tech mahindra ltd	1.5620	0.6325	0.0540	0.0209
Mphasis	1.8409	1.0374	0.0673	0.0343
Persisten ltd	1.7800	1.0287	0.0671	0.0340
Oracle Financial Service Software	1.3397	0.1705	0.0387	0.0056
Coforge ltd	1.9169	0.5100	0.0499	0.0169

The above representation shows that coforge ltd. has the highest standard deviation of 1.9169, indicatingthat their performance is the most variable or dispersed among the companies. On the other hand, tataconsaltancy service has the lowest standard deviation of 1.1493.

The data shows that Mphasis, and presisten Ltd have betas greater than 1, indicating that they are more volatile than the other company. Mphasis has the highest beta of 1.0374, implying it has the highest level of volatility among the listed companies. On the other hand, TCS, HCL, infosys, wipro, LTI, tech mahindra,coforge, and Oracle Financial Services have betas less than 1, indicating that they are less volatile than the overall market.

From the table, it can be observed that Mphasis has the highest expected return of 0.0673, followed by persisten Ltd. with an expected return of 0.0670. Tech mahindra and coforge also have relatively high expected returns of 0.0539 and 0.0499respectively. On the contrary, oracle financial services has the lowest expected return of 0.0387 followed by HCL Technologies and LTI with expected returns of 0.0442 and 0.0471 respectively.

In above table, it has been found that the actual return of MPHASIS LTD. i.e., 0.0342 is more than another companies. While, the actual return of oracle financial services software i.e., 0.0056 is less than another companies.

Table 2 Underpriced and overpriced securities

COMPANY	Expected Return	Actual Return	Underpriced/ Over Priced
Tata consultancy services (TCS)	0.0533	0.0203	Undervalue
Infosys	0.0627	0.0296	Undervalue
Hcl technologies	0.0442	0.0111	Undervalue
Wipro limited	0.0474	0.0143	Undervalue
Larsen & tourbro infotech(lti)	0.0471	0.0140	Undervalue
Tech mahindra ltd	0.0540	0.0209	Undervalue
Mphasis	0.0673	0.0343	Undervalue
Persisten ltd	0.0671	0.0340	Undervalue
Oracle financial service software	0.0387	0.0056	Undervalue
Coforge ltd	0.0499	0.0169	Undervalue

In above table,it can be seen that the comparison between the expected return and actual return of the companies are Tata Consultancy Services (TCS), Infosys, Wipro, HCL Technologies, Tech Mahindra, Oracle Financial Service Software, and Coforge Ltd, LARSEN & TOURBRO INFOTECH(LTI) and MPHASIS LTD, presisten, are under value. Because, The expected return and actual return figures indicate the performance of these companies relative to their expected performance. The "UNDER VALUE" label suggests that the actual return is lower than the expected return, indicating that these companies may be considered undervalued/overvalued in terms of their stock prices

Findings

The coforge has the highest standard deviation of 1.9169, TATA CONSALTANCY SERVICE has the lowest standard deviation of 1.1493.

Mphasis has the highest beta of 1.0374, implying it has the highest level of volatility among the listed companies. Mphasis, and presisten Ltd have betas greater than 1, indicating that they

are more volatile than the other company. On the other hand, TCS, HCL Technologies, Oracle Financial Services, wipro, LTI, tech mahindra, coforge ,infoys have betas less than 1, indicating that they are less volatile than the overall market.

Mphasis has the highest expected return of 0.0673, followed by presisten Ltd. with an expected return of 0.0670. Tech mahindra and coforge also have relatively high expected returns of 0.0539 and 0.0499 respectively.

Oracle financial service has the lowest expected return of 0.0387, followed by HCL Technologies and LTI with expected returns of 0.0442 and 0.0471 respectively.

The actual return of MPHASIS LTD. i.e.,0.0342 is more than another companies. While, the actual return of oracle Financial SERVICE software i.e., 0.0056 is less than another companies.

The comparison between the expected return and actual return of the companies are Tata Consultancy Services (TCS), Infosys, Wipro, HCL Technologies, Tech Mahindra, Oracle Financial Service Software, and Coforge Ltd, LARSEN & TOURBRO INFOTECH(LTI) and MPHASIS LTD.are under value

Conclusion

In analyzing the performance of various companies, it is evident that, Tata Consultancy Services (TCS), Infosys, Wipro, HCL Technologies, Tech Mahindra, Oracle Financial Services, Coforge, Larsen & Toubro Infotech, Mphasis, and Persistent are considered undervalued based on this analysis. This suggests that these companies have reported actual returns that are lower than their expected returns, implying potential for future growth and higher returns. Investors can use these insights on variability, volatility, expected returns, actual returns, and valuation to make informed decisions about their investment portfolios. Companies with lower volatility (beta less than 1) and higher expected returns might be considered for stability and growth potential.

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The Impact of AI in Business Decision Making

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Abstract

In the corporate world, artificial intelligence (AI) is now an emerging trend that affects decision-making in a variety of sectors. Organisations may improve efficiency, accuracy, and competitiveness by using AI to analyse large datasets, spot trends, and provide actionable insights. The paper examines the many aspects of artificial intelligence's influence on business decision-making, including its uses, advantages, difficulties, and potential future developments. Specific case examples demonstrate how AI-powered technologies such as machine learning, natural language processing, and predictive analytics are influencing operational and strategic choices. The findings suggest that while AI offers significant advantages, its adoption requires careful consideration of ethical and technical challenges to maximize value.

Keywords: Artificial intelligence (AI), Business decision-making, Decision-making processes, Machine learning, Business strategy

1. Introduction

The emergence of Artificial Intelligence (AI) has signified a fundamental transformation in company operations and decision-making processes. AI technologies, utilising machine learning algorithms and real-time data processing, empower organisations to proactively address fluctuating market situations. This article seeks to examine the impact of AI on decision-making processes, encompassing operational efficiency and strategic planning.

The business environment is transforming swiftly, with decision-making progressively depending on sophisticated technologies. AI provides transformational capabilities, enabling firms to analyse extensive data, discern patterns, and make informed decisions. This paper analyses the influence of AI on business decision-making, emphasising its advantages, obstacles, and prospective consequences.

This paper delves into the transformative impact of Artificial Intelligence (AI) on strategic business decision making, offering a nuanced perspective on how AI is reshaping the corporate world. The primary purpose of this study is to explore the emergence and evolution of AI within the realm of business strategy, examining its role in disrupting traditional decision models and enhancing business agility.

2. The Role of AI in Business Decision-Making

AI is quickly becoming more important in digital life today, and the advertising and marketing fields are no different. Siri, Tessa's self-driving car, and Google AI that could really learn video games in just a few hours are all examples of how AI is changing different fields one by one. AI can be used for many things, like finding data trends to lower market risks, making customer service better with virtual assistants, or even looking through millions of documents saved on different servers within an organisation to find places where compliance isn't being met. But companies have only recently been able to see and plan for the chances that robots and artificial intelligence (AI) could bring to the future of business. Because AI is consistent and is programmed with rules, businesses can cut down on mistakes. Because it lasts a long time, keeps getting better, and can record procedures, it has good economic chances. Robotics, computer vision, voice recognition, machine learning, and natural language processing are all technologies that are used in artificial intelligence uses. These tools open up a lot of business opportunities.

2.1 Operational Decision-Making

AI automates routine jobs, allowing businesses to concentrate on high-value activities.

As an example:

- AI robots answer customer questions, which makes service more efficient.
- Robotic Process Automation, or RPA, makes it easier to do things over and over again, like entering data and processing invoices.

2.2 Predictive Decision-Making

Using AI to power predictive analytics can help you see what trends will happen in the future.

Some important uses are:

- Predicting customer demand in shopping.
- How to evaluate risk in business.

2.3 Strategic Decision-Making

AI helps businesses plan for the long term by looking at market trends, customer behaviour, and what competitors are doing.

As an example:

- AI tools help with mergers and deals by figuring out how the two companies can work together better.
- Dynamic price models help online stores make the most money.

3. Challenges in Implementing AI for Decision-Making

3.1 Security and Privacy of Data

Concerns regarding data protection and conformance with regulations such as GDPR are raised by the dependence on extensive datasets.

3.2 Ethical Issues

The implementation of comprehensive ethical frameworks is necessary due to the potential for bias in AI algorithms to result in unjust decisions.

3.3 Integration Challenges:

Significant modifications to existing systems and procedures are necessary to implement AI.

4. Case Studies

Case Study 1: Walmart Walmart enhances operational efficiency and sales forecasting by employing AI for inventory management and customer behaviour analysis.

Case Study 2: JP Morgan

Thousands of hours are saved and errors are reduced by JP Morgan's AI system "COiN" as it automates document review processes.

Case Study 3: Tesla

The potential of deep learning in high-stakes environments is demonstrated by Tesla's use of AI in autonomous vehicles for real-time decision-making.

To underscore the significance of AI in modern business, let's consider some key statistics:

- 77% of companies are either using or exploring the use of AI in their businesses
- 83% of companies claim that AI is a top priority in their business plan
- AI could increase labor productivity growth by 1.5 percentage points over the next ten years
- Globally, AI-driven growth could be nearly 25% higher than automation without AI
- 56% of businesses are using AI to improve and perfect business operations
- 51% are turning to AI to help with cybersecurity and fraud management
- 47% harness AI tools in the form of digital personal assistants
- 46% are using AI for customer relationship management
- 40% are turning to AI for inventory management

5. Conclusion

In conclusion, AI is identified as a pivotal element in the evolution of business strategies, offering unparalleled opportunities for innovation and efficiency. The journey of integrating AI into business practices is complex, necessitating a strategic alignment with core values and objectives. Recommendations from this study advocate for a balanced approach, where AI is embraced not only as a technological advancement but as a catalyst for holistic growth and sustainability. Looking ahead, AI's role in business decision-making is poised to continue shaping the dynamics of the corporate world in profound and enduring ways.

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The Role of Artificial Intelligence in Investment Decision-Making

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Abstract

Artificial Intelligence (AI) has transformed the financial landscape, reshaping how investment decisions are made. This paper explores the theoretical and practical implications of AI in investment decision-making, focusing on its applications, benefits, and challenges. It highlights AI's role in portfolio optimization, algorithmic trading, sentiment analysis, and risk management. The study examines the convergence of machine learning, natural language processing, and big data analytics in enhancing investment strategies. The findings suggest that while AI improves decision accuracy and efficiency, challenges such as data bias, ethical considerations, and regulatory frameworks persist. Recommendations are provided to leverage AI effectively in investment decision-making.

Keywords: Artificial Intelligence, Investment Decision-Making, Machine Learning, Portfolio Optimization, Algorithmic Trading

Introduction:

The rapid advancements in Artificial Intelligence (AI) have revolutionized numerous industries, including healthcare, education, and finance. Among these, the investment sector has emerged as one of the most transformative areas for AI applications. Investment decision-making, traditionally reliant on human judgment, intuition, and manual data analysis, has been significantly enhanced by the integration of AI technologies. This development is driven by the increasing complexity of financial markets, the availability of vast amounts of structured and unstructured data, and the need for real-time, data-driven decision making.

AI has transformed the way investors analyze markets, manage risks, and optimize portfolios. By leveraging machine learning (ML) algorithms, natural language processing (NLP), and deep learning, AI systems can analyze historical data, predict future market trends, and generate actionable investment insights. These capabilities have been particularly useful in identifying hidden patterns, processing non-linear relationships, and analyzing sentiment from unstructured data sources such as social media and news feeds. For instance, ML algorithms can forecast stock price movements with greater accuracy, while NLP tools can evaluate the market sentiment to inform investment strategies (Heaton et al., 2017; Feng et al., 2019).

The role of AI in investment decision-making extends beyond individual investors to institutional players such as hedge funds, asset management companies, and investment banks. AI-powered systems like robo-advisors have democratized access to investment services, enabling retail investors to receive tailored advice at a lower cost. Moreover, AI technologies are increasingly used for high-frequency trading (HFT), a domain where decisions are made in milliseconds, often beyond human capability (Cartea et al., 2015).

Despite these advancements, the integration of AI in investment decision-making raises critical challenges and questions. Ethical concerns, such as algorithmic bias, transparency, and accountability, are central to the discourse on AI adoption in finance (Zhang & Zhang, 2023). Furthermore, reliance on AI for critical financial decisions necessitates rigorous validation of models to ensure their reliability and mitigate risks associated with overfitting and data inaccuracies.

This paper aims to explore the multifaceted role of AI in investment decision-making, focusing on its benefits, limitations, and future potential. It will examine the mechanisms through which AI enhances decision-making, the challenges in implementing AI technologies, and the implications for various stakeholders in the financial ecosystem. By synthesizing existing literature and analyzing recent advancements, this research seeks to provide a comprehensive understanding of how AI is reshaping the investment landscape.

The subsequent sections of this paper are structured as follows: The literature review presents an overview of existing studies on AI applications in investment decision-making. The research methodology outlines the theoretical framework and analytical approach adopted for this study. Findings and discussion delve into the key themes identified through the analysis, followed by a conclusion that highlights the implications of the research and potential directions for future study.

Literature Review:

AI Applications in Investment Decision-Making

AI has introduced innovative methods for analyzing financial data, predicting market trends, and optimizing portfolios. Heaton, Polson, and Witte (2017) highlight the role of deep learning in developing "deep portfolios," which leverage historical data to generate optimal investment strategies. These models excel in capturing non-linear relationships in financial datasets, making them highly effective in dynamic market conditions.

Cartea, Jaimungal, and Penalva (2015) emphasize the role of AI in high-frequency trading (HFT). AI algorithms, capable of processing massive datasets within milliseconds, have redefined the trading landscape by executing trades with precision and speed beyond human capability. This has resulted in enhanced liquidity and reduced market inefficiencies.

Chen et al. (2021) discuss the use of natural language processing (NLP) for sentiment analysis, which allows AI systems to evaluate market sentiment from unstructured data sources

such as news articles and social media. For example, Bollen, Mao, and Zeng (2011) demonstrate how Twitter mood can predict stock market trends, showcasing the power of sentiment analysis in investment decision-making.

Benefits of AI in Investment Decision-Making

The adoption of AI in investment decision-making has led to numerous benefits, including improved accuracy, efficiency, and accessibility. Feng, Giglio, and Xiu (2019) argue that AI enables investors to navigate the "factor zoo" by identifying the most relevant factors influencing asset prices. This reduces the complexity of financial decision-making and enhances the predictive power of investment models.

Robo-advisors represent another significant benefit of AI integration. These automated platforms provide personalized investment advice to retail investors, democratizing access to financial services. McKinsey & Company (2022) report that robo-advisors have significantly reduced the cost of investment advisory services, making them accessible to a broader audience.

Moreover, AI's ability to process and analyze large volumes of data has enhanced risk management practices. AI-driven models can identify early warning signals of market downturns, enabling proactive risk mitigation strategies (Singh & Sharma, 2023).

Challenges in Implementing AI in Investment Decision-Making

Despite its advantages, the implementation of AI in investment decision-making is not without challenges. Zhang and Zhang (2023) highlight ethical concerns, including algorithmic bias, transparency, and accountability. AI systems, while powerful, are susceptible to biases inherent in the training data, which can lead to unfair or suboptimal outcomes.

The lack of explainability in AI models, often referred to as the "black box" problem, poses significant challenges for regulatory compliance and investor trust. Regulators and stakeholders require transparency to understand the rationale behind AI-driven decisions (Deloitte Insights, 2023).

Additionally, the reliance on historical data for model training can limit AI's effectiveness in unprecedented market conditions. This over-reliance increases the risk of overfitting, where models perform well on training data but fail to generalize in real-world scenarios (Feng et al., 2019).

Emerging Trends and Future Potential

Recent advancements in AI technology suggest promising directions for future research and application. The integration of AI with blockchain technology has the potential to enhance transparency and security in investment transactions. McKinsey & Company (2022) highlight the role of AI-powered predictive analytics in identifying emerging investment opportunities, such as green energy and sustainable finance.

The emergence of quantum computing is expected to further amplify AI capabilities in financial modeling and simulation. KPMG Insights (2023) predict that quantum-enhanced AI models will revolutionize portfolio optimization by solving complex optimization problems in real-time.

The existing body of literature underscores the transformative impact of AI on investment decision-making. From improving market analysis to democratizing financial services, AI has reshaped the investment landscape. However, challenges such as ethical concerns, model transparency, and data limitations necessitate careful consideration. Future research should focus on addressing these challenges while exploring innovative applications of AI to enhance its effectiveness and reliability in the investment domain.

Research Methodology

This study adopts a theoretical and qualitative approach to explore the role of Artificial Intelligence (AI) in investment decision-making. The research relies on secondary data sources, including academic journals, industry reports, and recent advancements in AI technologies within the financial sector. A systematic review of literature forms the backbone of the analysis, drawing insights from peer-reviewed publications, professional insights, and market case studies.

Data Collection: Data was collected from a range of scholarly databases such as ScienceDirect, JSTOR, and Google Scholar. Industry reports from McKinsey & Company, Deloitte, and KPMG were also incorporated to provide a practical perspective on the applications and challenges of AI in investment. The data spans the last two decades, with a focus on literature published between 2015 and 2023 to capture the latest trends.

Framework for Analysis: The study uses a thematic analysis framework to identify recurring themes and patterns in the literature. The key themes explored include:

- AI technologies in investment (e.g., machine learning, natural language processing, and predictive analytics).

- Benefits, such as improved accuracy, efficiency, and democratization of financial services.

- Challenges related to ethical concerns, model explainability, and overfitting.

- Emerging trends, including the integration of AI with blockchain and quantum computing.

- This structured approach ensures a comprehensive exploration of the topic, synthesizing theoretical and practical insights into the transformative role of AI in investment decision-making.

Findings

Transformational Impact on Investment Decision-Making: AI has revolutionized the investment landscape by improving speed, accuracy, and efficiency of decision-making processes. Technologies like machine learning and deep learning enable the identification of complex patterns

in large datasets, improving predictive capabilities. Robo-advisors have democratized access to personalized investment advice, expanding financial inclusion.

Risk Management and Market Sentiment Analysis: AI excels in risk management by detecting early warning signals and identifying market anomalies. Tools like natural language processing (NLP) enable sentiment analysis, offering investors insights into market moods derived from unstructured data sources such as social media and financial news.

Ethical Concerns and Challenges: While AI offers numerous advantages, challenges persist, including biases embedded in training data and the "black box" problem, which reduces the transparency of AI models. These issues raise ethical concerns and regulatory challenges, potentially affecting trust and adoption.

Emerging Trends and Innovations: AI is increasingly integrated with emerging technologies like blockchain to enhance transparency and reduce fraud. Quantum computing holds the potential to amplify AI's capabilities, enabling real-time optimization of complex portfolios and risk models.

Conclusion

The findings of this study reveal that Artificial Intelligence has become a cornerstone of modern investment decision-making. Its ability to process large volumes of data, identify patterns, and provide real-time insights has significantly enhanced the efficiency and accuracy of financial analysis. The democratization of investment services through tools like robo-advisors has made financial markets more accessible to retail investors, while institutional investors benefit from high-frequency trading and advanced risk management solutions.

However, the adoption of AI is not without challenges. Ethical concerns, lack of transparency, and model reliability in volatile market conditions are pressing issues that require attention. Addressing these challenges will require a collaborative effort between researchers, industry practitioners, and regulators.

Future research should focus on developing ethical frameworks and improving the interpretability of AI models. Additionally, exploring the intersection of AI with emerging technologies such as blockchain and quantum computing can unlock new opportunities for innovation. As AI continues to evolve, its role in shaping the future of investment decision-making will become increasingly pivotal.

This study contributes to the growing body of knowledge on AI applications in finance, providing a comprehensive understanding of its potential and limitations. It also serves as a foundation for future research aimed at addressing the challenges and maximizing the benefits of AI in investment decision-making.

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A Study on the Impact of Artificial Intelligence on Fast-Moving Consumer Goods (FMCG)

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Abstract

Artificial intelligence (AI) has emerged as a disruptive technology that is transforming a variety of industries, including marketing. This paper investigates the impact of artificial intelligence (AI) on marketing and its key applications. It also discusses the tools that can be used to implement AI in marketing strategies, as well as the benefits and drawbacks of doing so. According to the paper, AI has the potential to revolutionise the way marketers communicate with customers, leading to more personalised and targeted marketing campaigns. It does, however, highlight some of the challenges and ethical concerns associated with the use of AI in marketing, such as the possibility of bias and privacy violations. The paper recommends that marketers should carefully evaluate the benefits and risks of using AI and ensure that they implement it in a responsible and ethical manner. Furthermore, the research examines the impact of Artificial Intelligence (AI) on Fast-Moving Consumer Goods (FMCG) marketing. It provides an overview of FMCG marketing, analyses the impact of AI from different perspectives, and synthesizes the results of previous studies and industry reports. It also explores the challenges and ethical considerations associated with using AI in FMCG marketing, such as data privacy and algorithmic bias. Recommendations for FMCG companies are provided to leverage the potential of AI while ensuring ethical and responsible use of the technology.

INTRODUCTION

Artificial Intelligence (AI) is leading the way in almost every industry, with statistics showing that current AI technology can boost business productivity by up to 40%. Market leaders have been encouraged to step up in a more advanced and efficient area, where AI has solidified itself as the most powerful weapon. Businesses that have AI under their control will have more chances to stay ahead of the competition in many different ways, and more and more are investing in AI marketing. This article explains how AI can help businesses drive business value with successful and innovative AI-powered marketing strategies, and how it can help everyone involved in marketing perform their jobs exponentially better than it could be.

LITERATURE REVIEW

Sterne, (2017). AI technologies in the field of marketing can be broadly classified to customized AI systems for the customized usage and to vendor provided and software-as-a-

service (SaaS) solutions which include AI aspects. Customized and real AI technologies can be manufactured by the internal AI department of companies, outsource providers or it can either be a mix of both. The various vendor-provided solutions of AI also need customization for personal usage cases.

Bughin, McCarthy & Chui, (2017). AI has been implemented in most of the companies in today's world but there is still not a high-level of implementation in different companies. Different marketers have shown their interest in adopting AI soon and around 98% of them are now preparing for executing it completely. Whereas, only 20% of the marketers have implemented one or more AI solutions in 2017 in the business.

Russel and Norvig (2016) Unlike human intelligence, artificial intelligence (AI) is the intelligence demonstrated by the machines. A system of intelligent agent machines that perceives the environment to successfully achieve its goal represent the artificial intelligence.

Paul Roetzer(2017). who is the CEO of Marketing Artificial Intelligence Institute, came up with the structure for AI in marketing which is commonly known as 5Ps of Marketing AI. The structure was formed for simplifying and visualizing the ground and it is in line with the research carried out with different AI companies and engineers on how marketing can take benefit from AI.

Wierenga & Van Bruggen, (2000). The software which has been highly recognized in the marketing is marketing management support systems (MMSS) which allows the managers to make the decisions, analyze the data and information with the help of AI. More precisely, it is a knowledge-driven tool which helps in the decision making through examining the information with the improvement of AI.

RESEARCH METHODOLOGY

Statement of the Problem

The research work has used the primary and secondary data to accomplish the objectives. Primary data was collected with the help of questionnaire, the sample size is 120 and the secondary data was collected through journals, articles and the past research done on this topic also internet was the great support. The following tools have been used as methodology in this dissertation.

Objectives of the study

- To identify the current trends and practices of Artificial Intelligence (AI) adoption in Fast-Moving Consumer Goods (FMCG) marketing

- To examine Consumer awareness of Artificial Intelligence (AI) in Fast -moving Consumer Goods (FMCG) marketing

- To determine how consumers, perceive the advantages and risks of using Artificial Intelligence (AI) in Fast-Moving Consumer Goods (FMCG) marketing.

- To perceive how consumers will view the use of Artificial Intelligence (AI) in Fast - Moving Consumer Goods (FMCG) marketing in the future.

Research Design

Descriptive, as the research consists of survey & study on the impact of artificial intelligence on Fast-Moving Consumer Goods (FMCG) marketing operations done by some companies.

Data Collection Techniques

1. Primary Data - Responses from the questionnaire.

2. Secondary Data - Companies Profiles, Research Papers, articles and internet.

Sampling Method

In this paper, Convenience Sampling method is used (Part of Non-Probability Sampling Methods) with the help of structured questioner. Data interpreted on the basis of 120 responded.

LIMITATION OF STUDY

- Error of leniency might have also entered at some points. As the responses given by the respondents have been taken as genuine no further verification is made.

- The major limitation of the research is that is constrained to the boundaries of Surat. It lacks the larger perspective and fails to represent a wider group of female teachers across the countryor even world.

- The sample was collected using convenience sampling method. As a result, the respondents may not be the exact representation of the population.

DATA ANALYSIS AND INTERPRETATION

- The study included 120 participants, with a slightly higher proportion of male participants than female participants.

- With 63.3% of participants aged 18 to 25, the study had a significantly higher proportion of young participants.

- The majority of participants were aware that AI was being used in FMCG product marketing, but nearly one-third were not aware at all.

- A sizable proportion of participants have seen no impact of AI on FMCG marketing, while a smaller but still sizable proportion has seen an impact.

- A large number of participants are interested in using AI tools in FMCG marketing.

- The majority of participants believe artificial intelligence (AI) is at least somewhat important in FMCG marketing, with a sizable proportion believing it is extremely important.

- The primary obstacles to implementing AI in FMCG marketing are specific challenges and a lack of knowledge or skills, indicating a need for increased investment and training.

- AI in FMCG marketing campaigns can improve ROI, engagement, sales, and customer satisfaction, with the majority of participants reporting "high" levels of success.

- The majority of respondents agreed that AI applications are useful for FMCG marketing, with the most popular being chat bots and virtual assistants, natural language processing, predictive analytics, and image and video recognition.

- A significant number of respondents are concerned about the use of artificial intelligence (AI) in the collection and analysis of personal data for marketing reasons.

- The majority of respondents favor AI-generated product recommendations.

- The majority of respondents perceive advantages to utilizing AI in FMCG marketing, notably in terms of increasing sales and minimizing expenses.

Interpretation of Secondary data

1. Coca-Cola

In the consumer goods industry, Coca-Cola is a market leader for the adoption of AI. For product development and market analysis, AI is primarily used. For example, it developed self-service drink dispensers that allowed customers to mix their own beverages, then used that information to create the new Cherry Sprite flavor, which was the most well-liked.

2. Marico Ltd

Marico not only uses automation, but also analytics and AI (particularly machine learning) to grow its own and its distributors' businesses. The automation has not only helped the distributor reduce inventory days from 4-5 to one, but it has also helped cut costs by reducing the sales staff strength to 20 and eliminating the need for data entry operators.

3. Hindustan Unilever

HUL intends to use the AI software Jarvis to extract information such as who visited the grocery store in the last three months and what they are likely to buy the next time. HUL said in a presentation on its website on June 6 that outlined Project Maxima, which is focused on precision marketing at scale, that general trade will continue to be big in the ne xt 10 years, spread across 600,000 villages and 10 million outlets.

4. Nestle

Nestle expanded its AI efforts by introducing the 'Cookie Coach' tool. Nestle USA created this virtual bot to answer questions about their Toll House chocolate chip cookie recipe. Ruth,

the AI-powered coach, is a multimodal virtual assistant who employs autonomous animation. Nestle has successfully navigated its digital journey using various methods. Consider some of Nestlé's efforts to incorporate modern technology into its services.

CONCLUSION

In conclusion, Artificial Intelligence (AI) is transforming how Fast -Moving Consumer Goods (FMCG) companies market their goods. While using AI in marketing has both benefits and drawbacks, there is no denying the value of personalised messaging, better product recommendations, and more effective use of marketing budgets. Companies must take into account ethical issues and customer perceptions as AI adoption increases if they want to make sure that their use of the technology is ethical and effective. Overall, artificial intelligence has the potential to transform the Fast-Moving Consumer Goods (FMCG) industry and improve customer experience. However, it is crucial for businesses to use it responsibly and with caution, taking into account any potential negative effects on customers and society at large.

By doing this, they can use the potential of AI to promote innovation and growth while upholding moral principles and preserving consumer confidence.

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Understanding and Addressing Stress in the Modern Workplace

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Introduction:

In today's fast-paced and demanding work environment, stress has become an almost ubiquitous factor affecting employees across all industries. While a source of accomplishment and fulfillment, the workplace can also be a breeding ground for stress due to high expectations, tight deadlines, interpersonal conflicts, and job insecurity. This chapter aims to shed light on the various stressors encountered in the workplace and proposes effective strategies to manage and mitigate stress, fostering a healthier and more productive work atmosphere.

Identifying Workplace Stressors

Before addressing stress management, it is essential to recognize the diverse stressors that employees encounter daily:

a) **Workload and Time Pressure:** Heavy workloads, tight deadlines, and unrealistic expectations can lead to a constant sense of urgency and anxiety.

b) **Lack of Control:** Employees may experience stress when they lack autonomy in decision-making or feel that their opinions are not valued.

c) **Unclear Expectations:** Uncertainty about job roles, responsibilities, or performance standards can contribute to stress.

d) **Poor Work-Life Balance:** Inadequate separation between work and personal life can lead to burnout and diminished well-being.

e) **Interpersonal Conflicts:** Conflicts with colleagues, supervisors, or subordinates can be a significant source of stress.

f) **Job Insecurity:** Fear of job loss or uncertain career prospects can cause chronic stress.

Causes of Stress at Workplace

Stress in the workplace can stem from various factors, both internal and external, which create pressure and strain on employees. The causes of stress at work can be multifaceted and may vary from one individual to another. Some common causes of stress at the workplace include:

- **Workload:** Excessive workloads, tight deadlines, and unrealistic expectations can lead to stress, especially when employees feel overwhelmed by the volume of tasks they need to complete.

- **Lack of Control:** When employees feel they have little or no control over their work, decision-making processes, or the direction of their careers, it can result in heightened stress levels.

- **Role Ambiguity:** Unclear job roles and responsibilities can lead to stress, as employees may struggle to understand what is expected of them, leading to uncertainty and anxiety.

- **Job Insecurity:** Fear of job loss or uncertainty about future career prospects can significantly contribute to stress among employees.

- **Interpersonal Conflicts** with colleagues, supervisors, or subordinates can create a tense and stressful work environment.

- **Work-Life Imbalance:** Difficulty in balancing work and personal life can lead to stress, as employees may struggle to find time for relaxation, family, and personal interests.

- **Lack of Support:** Insufficient support from supervisors or coworkers during challenging times can exacerbate stress levels.

- **Organizational Culture:** A toxic or unsupportive organizational culture can contribute to stress, as employees may experience pressure to conform to unhealthy norms.

- **Performance Pressure:** Constant pressure to meet or exceed performance targets can lead to stress and burnout.

- **Technology Overload:** Constant connectivity through technology can blur the boundaries between work and personal life, leading to stress due to an inability to disconnect.

- **Physical Work Environment:** Uncomfortable or hazardous working conditions can negatively impact employees' well-being and contribute to stress.

- **Career Development and Advancement:** Limited opportunities for career growth and advancement can cause stress among ambitious employees seeking professional development.

- **Lack of Recognition:** Employees who feel undervalued or underappreciated for their efforts can experience stress and decreased motivation.

- **Changes and Uncertainty:** Significant changes in the workplace, such as restructuring, mergers, or reassignments, can create uncertainty and stress.

- **Unrealistic Expectations:** When employees are expected to continuously exceed their abilities or work in a culture that promotes perfectionism, stress can result.

It is important to note that individual responses to stressors can vary, and what causes stress for one person may not affect another in the same way. Recognizing and addressing these stressors

is essential for employers and employees to foster a healthier and more productive work environment. Implementing stress management strategies can help individuals cope with stress and minimize its negative impact on their well- being and job performance.

The Impact of Workplace Stress

Recognizing the impact of workplace stress is crucial for both employers and employees. The consequences of unmanaged stress can manifest in various ways:

a) **Reduced Productivity:** High-stress levels can lead to decreased focus, impaired decision-making, and a decline in overall work performance.

b) **Increased Absenteeism:** Chronic stress can lead to physical and mental health issues, resulting in higher rates of absenteeism.

c) **Employee Turnover:** An overly stressful work environment can drive valuable employees to seek opportunities elsewhere.

d) **Decline in Mental and Physical Health:** Stress has been linked to a range of health issues, including anxiety, depression, cardiovascular problems, and compromised immune systems.

Strategies for Stress Management

a) **Promoting a Supportive Work Culture:** Employers should foster a culture of open communication, empathy, and respect, ensuring that employees feel comfortable expressing their concerns without fear of reprisal.

b) **Encouraging Work-Life Balance:** Employers can offer flexible work arrangements, promote regular breaks, and discourage after-hours work communication to help employees maintain a healthy work-life balance.

c) **Training and Development:** Providing training in stress management, time management, and emotional intelligence can empower employees with valuable skills to cope with stress effectively.

d) **Establishing Clear Expectations:** Clearly defining roles, responsibilities, and performance expectations can help alleviate uncertainties and reduce stress.

e) **Employee Assistance Programs (EAPs):** Offering EAPs that include counseling and mental health support can benefit employees dealing with high-stress levels.

f) **Encouraging Physical Wellness:** Initiatives promoting physical activities, such as yoga classes, gym memberships, or wellness programs, can contribute to stress reduction.

g) **Recognition and Appreciation:** Acknowledging employees' efforts and achievements can boost morale and reduce stress related to feelings of inadequacy.

Mindfulness and Meditation

Introducing mindfulness practices and meditation into the workplace can be highly effective in managing stress. Mindfulness involves being present at the moment, without judgment or attachment to thoughts and emotions. Regular practice can improve focus, emotional regulation, and overall well-being.

Stress management issue in Education Sector:

Stress is not limited to the workplace; it also affects the education sector, including students, teachers, and administrators. The education sector can be a high-pressure environment due to academic expectations, standardized testing, administrative demands, and the need to meet various stakeholders' expectations. Let's explore some stress management issues specific to the education sector:

•   Academic Pressure on Students:

Students in the education sector often face tremendous academic pressure to excel in exams, assignments, and extracurricular activities. The fear of not meeting expectations or falling behind can lead to stress, anxiety, and even burnout.

•   High Workload for Teachers:

Teachers carry a heavy workload, juggling lesson planning, grading, administrative tasks, and student management. The pressure to meet curriculum requirements and ensure student success can lead to stress and exhaustion.

•   Classroom Discipline and Behavior Management:

Teachers must manage diverse classrooms with students of varying needs and behaviors. Dealing with disruptive students and maintaining discipline can be challenging, contributing to stress for teachers.

•   Standardized Testing:

The emphasis on standardized testing can create stress for both students and teachers. Students may feel pressured to perform well, while teachers may feel the burden of their effectiveness being judged based on test scores.

•   Parental and Administrative Expectations:

Teachers often face expectations from parents and administrators to meet certain educational standards and achieve specific outcomes. The fear of disappointing these stakeholders can add to their stress levels.

•   Time Constraints:

Teachers often have limited time for planning, grading, and engaging in professional

development. The constant race against the clock can lead to stress and hinder the quality of teaching.

• Professional Development and Advancement:

Educators may experience stress related to career advancement and the pursuit of additional qualifications or certifications required to progress in their careers.

• Education Funding and Resources:

Educational institutions may face financial constraints, leading to limited resources and support for teachers and students. The lack of adequate resources can contribute to stress and impact the quality of education.

• Student Performance and Support:

Teachers may feel responsible for their student's academic success and well- being. The pressure to provide sufficient support to each student can create stress and feelings of inadequacy.

• Technological Challenges:

With the increasing integration of technology in education, educators may experience stress related to adapting to new tools and platforms and managing potential technical issues.

Addressing Stress Management Issues in the Education Sector:

• Teacher Training and Support:

Provide teachers with training on stress management techniques, time management, and effective classroom management strategies. Encourage a supportive work culture that allows teachers to seek help when needed.

• Emphasize Work-Life Balance:

Promote work-life balance for both students and teachers. Encourage students to engage in extracurricular activities and hobbies that help them unwind. For teachers, create policies that support work-life balance and reduce excessive workload.

• Implement Comprehensive Student Support:

Offer counseling services and support systems for students to help them cope with academic pressure and stress. Create a positive learning environment that fosters emotional well-being.

• Professional Development Opportunities:

Provide teachers with opportunities for professional development and ongoing training to enhance their skills and confidence, reducing stress related to performance expectations.

- Involve Parents and Administrators:

Establish open communication with parents and administrators to manage expectations and collaborate effectively in supporting student and teacher well- being.

- Integrate Mindfulness Practices:

Introduce mindfulness practices in schools to help students and teachers develop resilience, manage stress, and improve focus.

- Strengthen Education Funding:

Advocate for sufficient funding to ensure schools have access to necessary resources and support systems, reducing stress related to resource constraints.

By addressing stress management issues in the education sector, educators and students can create a more positive and conducive learning environment that fosters growth, well-being, and academic success.

Conclusion

Stress management is not only a responsibility for individual employees but also a crucial obligation for employers to create a conducive work environment. By recognizing and addressing workplace stressors and implementing appropriate strategies, organizations can cultivate a healthier, more resilient, and more productive workforce. In turn, employees can experience increased job satisfaction and a greater sense of well-being, leading to a win-win situation for both individuals and the organization as a whole.

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Consumer Preferences Towards Use of OTT Platforms in Surat

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Abstract

This study explores consumer preferences toward Over-The-Top (OTT) platforms through a structured questionnaire administered via Google Forms. The research aims to identify the factors influencing users' decisions and behaviors in selecting and utilizing OTT services. The survey was disseminated online, targeting a diverse respondent sample. Analysis of the collected data yielded several critical insights. Firstly, content quality was identified as a pivotal determinant in consumers' decision-making processes. Secondly, the availability of a diverse content library emerged as a significant factor influencing platform preferences, with users placing considerable value on variety. Additionally, subscription pricing was revealed to play a substantial role in shaping consumer choices. The study also investigated demographic variations, uncovering how factors such as age and gender affect usage patterns of OTT platforms. These findings offer meaningful implications for OTT service providers, enabling them to refine their offerings and better align with consumer expectations and needs.

1. Introduction:

The COVID-19 pandemic has triggered a profound transformation in India's content consumption patterns, driving the widespread adoption of Over-the-Top (OTT) platforms. Popular services such as Netflix, Amazon Prime, and Disney+ Hotstar have witnessed a significant increase in subscribers as audiences increasingly turn to digital streaming for entertainment. Unlike traditional cable or satellite providers, these platforms offer extensive film and television content accessible via high-speed internet, ensuring flexibility and convenience. Users can engage with content anytime, anywhere, and across multiple devices, addressing the growing demand for on-demand and personalized entertainment.

A key factor enhancing the appeal of OTT platforms is the diversity of content they provide, encompassing movies, TV shows, documentaries, and exclusive original programming. High production quality, celebrated actors, and compelling narratives in original content not only attract subscribers but also distinguish OTT platforms from conventional media outlets. Moreover, cost-effectiveness plays a critical role, as these platforms offer varied subscription plans tailored to user preferences and budgets, often without binding contracts.

OTT platforms also enhance user experiences through personalized recommendations powered by algorithms and minimal-ad or ad-free viewing, delivering uninterrupted content. Global accessibility further enriches the viewing experience, exposing users to diverse cultures and storytelling styles. As internet penetration in India continues to rise, OTT platforms are expected to solidify their position as a dominant force in the Indian media landscape, aligning seamlessly with evolving consumer preferences and digital advancements.

Importance of OTT:

- **Analyzing Market Dynamics:** Researching consumer preferences is essential for staying attuned to shifting trends in the media and entertainment industry. This knowledge enables OTT platforms to refine their offerings, ensuring alignment with evolving consumer demands.

- **Strategic Content Development:** Insights into audience preferences allow OTT platforms to craft targeted content strategies. By focusing on the production of original series and films that resonate with their audience, platforms can enhance engagement and bolster subscriber retention.

- **Enhanced Personalization:** Understanding consumer behavior facilitates the optimization of recommendation algorithms, delivering personalized content suggestions. This tailored approach improves user satisfaction and encourages prolonged viewing sessions.

- **Customer Acquisition and Retention:** Identifying the key drivers behind consumer attraction to OTT platforms, such as exclusive content, affordability, or user experience, aids in developing effective marketing strategies to acquire new subscribers. Moreover, catering to existing users' preferences strengthens retention rates and minimizes churn.

- **Competitive Differentiation:** In a highly competitive OTT landscape, consumer insights empower platforms to distinguish themselves through unique features or exclusive content, establishing a competitive edge.

- **Revenue Optimization:** Consumer preferences significantly influence revenue streams. Platforms can attract larger subscriber bases and optimize advertising revenue by focusing on popular genres and targeted ad placements.

- **Global Market Adaptation:** For OTT platforms pursuing global expansion, understanding regional consumer preferences and cultural nuances is critical. These insights inform content localization strategies and drive successful market penetration in diverse regions.

2. Literature Review:

1. **Menon (2022)** the public will use different OTT video streaming platforms according to the content. Therefore, the OTT video streaming platform can attract people's attention if it has nough 2023-1296 IJOI https://www.ijoi-online.org/index.php The International

Association of Organizational Innovation Volume 15 Number 4, April 2023 118 variety of content. After gaining pleasure from the act of following a drama, people may also share their joy with their friends and even discuss the content of the movie together.

2. **In a study by Waghmare et al. (2022)** on the growth of OTT video services, it is stated that when consumers switch from TV to OTT video streaming platforms, they can not only watch at the time of their choice but also choose the content they want to watch, making OTT video streaming platforms a new entertainment medium for consumers, and The main factor for the growth of OTT video streaming platform is the freedom and flexibility for consumers to watch video anywhere. The exclusive and original content of OTT video streaming platform has successfully driven consumer demand for video streaming platform, and if the content is not attractive and the platform is convenient, consumers are not interested in using it.

3. **Yeole et al. (2022)**, in their study of user perspectives on OTT platforms, point out that OTT platforms allow consumers to choose their own viewing time, location, and duration of viewing so that they can easily use OTT platforms. Among them, the convenience of using at anytime and anywhere and the content richness of providing various film and television works are important factors for the use and promotion of OTT platform. These two features enable consumers to enjoy the OTT video streaming platform in a comfortable and relaxed mood, meeting the entertainment needs of modern consumers.

4. **According to Patnaik et al. (2021),** the Covid-19 pandemic and the rise of OTT, the Covid19 pandemic has changed the way consumers consume entertainment. The pandemic has caused consumers to stay indoors for long periods of time, thus driving the rise of OTT platforms. Palomba's (2021) study on the impact of original series on OTT video streaming platforms, original content on OTT video platforms is the reason that influences consumers to choose OTT video streaming platforms, and given the choice between cable and OTT video streaming platforms, consumers prefer OTT video streaming platforms with a lot of original content.

5. **Haritha and Joseph (2021)** also aimed to find the factors that influenced subscription to OTT platforms and the potential changes to the cinema experience caused by OTT services. The authors found that the two major factors that influenced subscription to OTT services are quality of content and affordability (Haritha & Joseph, 2021, p. 1646).

6. **Pramit Gupta's (2021)** key goal was to "understand and analyze the reasons why Indians have a trend to shift towards web series from traditional TV series. According to Gupta's research, web series had more content, content variety, and quick accessibility among other reasons. In contrast to web series, some respondents preferred TV series because the content was more family friendly, and TV subscriptions are cheaper than OTT subscriptions. Gupta successfully highlights the factors that are influencing the shift to web series, and shows the high acceptance of OTT platforms in India.

7.   **Gupta and Singharia (2021)** aimed to find the factors that influence people who are subscribed to OTT services to continue their subscription, with a focus on quality of customer service. The authors found that the way that OTT services interact with their customers and the quality of their service impacts whether more people will subscribe or not. They further state the impacts of these two factors lessen as the customer forms a habit to automatically watch the subscribed OTT platform (Gupta and Singharia, 2021, p. 43). Customer service provided by entertainment services is an influencing factor until the customers habitually turn to the service when they wish to consume entertainment media.

8.   **Ghalawat et al. (2021),** in their study on factors influencing consumers' choice of OTT, pointed out that the popularity of smartphones, along with the increase in Internet access and advancement in network technology, has led to the emergence of OTT platforms. In the early days, consumers could only subscribe to cable TV to watch its programs, but now consumers can watch their desired programs through OTT audio and video streaming platforms through media such as cell phones, tablets, and computers. The OTT platform allows people to watch videos anytime and anywhere, which is one of the most important factors for consumers to use the OTT platform, while another important factor is the OTT content.

3. Research Methodology:

3.1 Objectives of the study:

•   To know the choice of consumers towards OTT platforms in Surat.

•   To find factors affecting customer preferences towards OTT platforms.

3.2 Problem Statement:

The rapid proliferation of Over-the-Top (OTT) platforms in India has revolutionized media consumption, making it imperative for businesses and policymakers to understand consumer preferences in this domain. This study seeks to address key aspects influencing consumer choices and behaviors related to OTT platforms. First, it examines the factors driving their adoption, focusing on attributes such as convenience, affordability, and content variety, to uncover the motivations behind users' preferences over traditional alternatives.

Second, the research explores consumer content preferences on OTT platforms, analyzing popular genres and trends across demographic groups. These insights will help OTT providers optimize their offerings to align with user demands.

Lastly, the study investigates the role of original content in driving user engagement and retention. With platforms like Netflix, Amazon Prime, and Disney+ Hotstar heavily investing in exclusive programming, understanding its perceived quality, impact on subscriber loyalty, and ability to attract new users is crucial for industry growth.

3.3 Sample Size:

In this study, I had taken the responses of one hundred (100) individual from the sample frame.

4. Data Analysis:

S.No.	Characteristics	Categories	Percentage
1	AGE WISE CLASSIFICATIO N	Age	Percentage (%)
		Under 18	6%
		18-24	57%
		25-34	24%
		35-44	8%
		45-54	3%
		55-64	2%
		65 or more	0%
2	GENDER WISE CLASSIFICATIO N	Gender	Percentage (%)
		Male	71%
		Female	29%
3	EDUCATION BACKGROUND	Education	Percentage (%)
		SSC(10th Pass)	11%
		HSC(12th Pass)	12%
		Bachelor's Degree	56%
		Master's Degree	14%
		Some college/ Associate Degree	3%
		Doctorate or professional degree	4%

S.No.	Characteristics	Categories	Percentage
4	EMPLOYEMEN T STATUS	Employment Status	Percentage (%)
		Employment Full-Time	36%
		Employment Part-Time	8%
		Unemployment	6%
		Student	47%
		Retired	2%
		Other	1%
5	HOW OFTEN DO YOU USE OTT PLATFORMS?	Use of OTT Platforms	Percentage (%)
		Daily	30%
		Several times a week	21%
		Once a week	8%
		A few times a month	16%
		Rarely	18%
		Never	7%
6	WHICH OTT PLATFORMS DO YOU CURRENTLY SUBSCRIBE TO?	OTT platforms	Percentage (%)
		Netflix	55%
		Amazon Prime Video	45%
		Sony LIV	31%
		Jio Cinema	46%
		Disney + Hotstar	47%
		Others	2%
7	HOW DID YOU FIRST HEAR ABOUT THE OTT PLATFORMS YOU CURRENTLY SUBSCRIBE TO?	Heard about OTT platform through	Percentage (%)
		Word of mouth	26%
		Online advertisement	20%
		Social media	34%
		Television commercials	17%
		Other	3%

S.No	Characteristics	Categories	Percentage			
8	WHAT GENRES OF CONTENT DO YOU PREFER TO WATCH ON OTT PLATFORMS?	Genres of Content	Percentage (%)			
		Action	68%			
		Comedy	69%			
		Drama	42%			
		Documentary	36%			
		Horror	34%			
		Science Fiction	31%			
		Romance	40%			
		Thriller	37%			
		Animation	24%			
		Reality TV	30%			
		Other	3%			
9	HOW IMPORTANT ARE THE FOLLOWING FACTORS WHEN CHOOSING WHAT TO WATCH ON OTT PLATFORMS?		Extremely important	Important	Not important	Not important at all
		Content Quality	72	18	0	3
		Variety of Content	47	34	4	2
		Recommendation based on viewing history	38	27	8	11
		User interface & ease of navigation	39	29	9	6
		Price of subscription	52	27	5	3
10	SATISFIED ARE YOU WITH THE CONTENT AVAILABLE ON THE OTT PLATFORMS YOU SUBSCRIBE TO?	Satisfaction	Percentage (%)			
		Very Satisfied	42%			
		Satisfied	44%			
		Neutral	13%			
		Dissatisfied	0%			
		Very Dissatisfied	1%			

S.No.	Characteristics	Categories	Percentage
11	WOULD YOU CONSIDER SUBSCRIBING TO A NEW OTT PLATFORM IF IT OFFERED EXCLUSIVE CONTENT NOT AVAILABLE ELSEWHERE?	Yes	47%
		No	19%
		Maybe	34%
12	HOW DO YOU PRIMARILY WATCH CONTENT ON OTT PLATFORMS?	Content watch on...	Percentage (%)
		SmartTV	27%
		Laptop/Desktop	23%
		Smartphone/Tablet	50%
13	HOW MANY HOURS PER WEEK DO YOU TYPICALLY SPEND WATCHING CONTENT ON OTT PLATFORMS?	Time spends watching content on OTT platform	Percentage (%)
		Less than 1 hour	29%
		1-5 hours	42%
		6-10 hours	23%
		11-15hours	1%
		More than 15 hours	5%
14	WHAT TYPES OF CONTENT DO YOU PREFER TO WATCH ON OTT PLATFORMS?	Preference to watch	Percentage
		Movies	73%
		hows/Web- Series	72%
		Documentaries	32%
		Live events (e.g.sports, concerts)	35%
		Other	1%

5. Findings, Suggestions and Conclusion:

- The majority of respondents (30%) use OTT platforms daily, followed by several times a week (21%), a few times a month (16%), rarely (18%), once a week (8%), and never (7%).

- The data shows that most respondents have subscribed to Netflix (55%), Amazon Prime Video (45%), Jio Cinema (46%), and Disney+ Hotstar (47%), indicating a preference for these platforms. Some also use Sony LIV (31%) and other OTT services.

- The data indicates that most respondents subscribe to Netflix (55%), Amazon Prime Video (45%), Jio Cinema (46%), and Disney+ Hotstar (47%), showing a preference for their content, with some also using Sony LIV (31%) and other platforms.

- Most respondents (34%) learned about their current OTT subscriptions through social media, followed by word of mouth (26%), online advertisements (20%), TV commercials (17%), and other sources (3%).

- Comedy (69%) and Action (68%) are the most popular genres among respondents, with other preferences including Drama (42%), Documentary (36%), Horror (34%), Science Fiction (31%), Romance (40%), Thriller (37%), Animation (24%), Reality TV (30%), and others.

- Content quality is extremely important to most respondents (72%), followed by content variety (47%) and subscription pricing. Additional factors include personalized recommendations, user interface, and ease of navigation. This highlights the importance of quality, variety, and affordability in platform preferences.

- Most respondents (47%) are willing to subscribe to a new OTT platform for exclusive content, while 19% are not, and 34% are unsure, highlighting the importance of exclusive content. Half of the respondents (50%) watch OTT content on smartphones and tablets, with others using laptops/desktops (23%) or smart TVs (27%).

- Most respondents (42%) spend 1-5 hours per week on OTT platforms, followed by less than 1 hour (29%), 6-10 hours (23%), 11-15 hours (1%), and over 15 hours (5%).

- Movies (73%) and TV shows/web series (72%) are the most popular content types, with some also watching documentaries (32%) and live events like sports or concerts (35%).

Suggestions:

- **Popular Genres and Categories:** Identify specific genres or content categories that attract greater audience attention.

- **User Satisfaction with Features:** Assess user satisfaction with platform features, including search functionality, content recommendation systems, and user interfaces.

- **Subscription Models and Payment Preferences:** Examine consumer attitudes toward various subscription models (e.g., monthly plans, pay-per-view, ad-supported options) and their willingness to pay for each.

- **Social and Cultural Influences:** Analyze how social and cultural factors, such as language preferences, regional content, and cultural representation, shape content consumption on OTT platforms.

- **Comparison with Traditional Media:** Compare consumer preferences for OTT platforms versus traditional media like cable TV, broadcast TV, and cinema.

- **Future Trends in OTT Consumption:** Explore potential trends, such as the adoption of interactive content, virtual reality experiences, and the impact of emerging technologies like 5G.

Conclusion:

The study on consumer preferences for OTT platforms highlights a clear shift toward greater adoption and reliance on these services. Consumers increasingly value the convenience, flexibility, and diverse content options that OTT platforms offer compared to traditional cable or satellite TV. Key factors influencing consumer choices include cost-effectiveness, personalized recommendations, and access to exclusive content. The findings also indicate a strong preference for OTT platforms among younger demographics, signaling a potential transformation in entertainment consumption trends. As the OTT market grows and evolves, aligning with these preferences will be essential for both established and emerging players in the industry.

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