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SANKALPA : Journal of Management & Research

aims at bringing out the intricacies of Management perspectives, concepts, and applications. The focus is on Indian Management and its interplay with Global Management knowledge, best-practices and research.



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SANKALPA

From the Heart of Editor-in-Chief...

Dear Esteemed Researchers and Contributors,

Welcome to the latest edition of **Sankalpa: Journal of Management & Research, Volume 16, Issue 1**, covering January to June 2026. As we step into another year of academic exploration, we are proud to present a carefully curated selection of research papers that address the rapidly shifting paradigms in modern business, technology, and society. This issue serves as a testament to the collaborative efforts of scholars who are pushing the boundaries of traditional management theory to tackle highly complex, real-world challenges.



The ten papers featured in this volume offer diverse perspectives, combining empirical rigor with actionable managerial insights. The key thematic areas explored in this issue include:

- **Technology & Workplace Dynamics:** Researchers examine the modern workplace through studies on the impact of AI-based mental health tools on employee performance and how digital transformation in supply chain management builds organizational resilience.
- **Financial Strategies & Performance:** This issue highlights critical financial insights, ranging from individual financial planning and investment strategies to a comprehensive trend and strategic evaluation of Gujarat State Fertilizers & Chemicals Ltd.
- **Market Forces & Consumer Behaviour:** Contributors analyse modern marketing mechanisms by looking at the influence of social media platforms on brand performance, the mediating role of marketing effectiveness between HRM practices and financial performance, and regional consumer ethnocentrism towards "Made in India" products.
- **Sustainable Growth & Future Sectors:** Authors explore the role of innovation and entrepreneurship in driving sustainable development, construct a global framework to evaluate adoption constraints in the electric vehicle (EV) sector, and offer a unique bibliometric study mapping the impact of women in heritage and pilgrimage tourism.

I would like to express my sincere appreciation to the authors for choosing Sankalpa to publish their valuable findings. I am also deeply grateful to our editorial board and peer reviewers, whose rigorous evaluations ensure the academic integrity of our publication. We trust that this volume will provoke thoughtful discussion, inspire future inquiries, and serve as an invaluable resource for academicians, students, and industry professionals alike.

Thank you to our readers and subscribers for your continued partnership and support.

Warm Regards,
Dr. Kerav Pandya
Professor & Director



Celebrations & Activities @ CKSVIM



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Words That Inspire

“Research is not merely about finding answers; it is about asking questions that matter.”

- » "The important thing is not to stop questioning. Curiosity has its own reason for existing." - Albert Einstein
 - » "Research is creating new knowledge." - Neil Armstrong
 - » "Success is not final, failure is not fatal: it is the courage to continue that counts." - Winston Churchill
 - » "Innovation distinguishes between a leader and a follower." - Steve Jobs
 - » "Knowledge grows when it is shared, challenged, and applied."
 - » "Every published paper begins with a single idea and the determination to pursue it."
 - » "Great institutions are built not only by teaching but by creating knowledge that transforms society."
 - » "Excellence in research is achieved through discipline, integrity, and continuous learning."
 - » "The future belongs to those who question today, discover tomorrow, and inspire generations thereafter."
 - » "Academic research is the bridge between imagination and innovation."
-

Thought for the Issue

"In a rapidly evolving world, research is not an option—it is the foundation of innovation, informed decision-making, and sustainable progress. Every meaningful discovery begins with curiosity, is strengthened through critical inquiry, and creates lasting value when shared with society."

Sankalpa's Research Philosophy

“Think Critically Research Ethically Publish Responsibly Create Impact”





STUDY ON FINANCIAL PLANNING FOR INDIVIDUALS' INVESTORS

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Abstract

Financial planning plays a crucial role in ensuring financial stability and achieving long-term goals for individuals. This study aims to examine the financial planning behavior of individual investors, focusing on factors influencing investment decisions, sources of information, and the relationship between demographic variables and investment behavior. The study is based on primary data collected through a structured questionnaire from 250 respondents in Vapi locality. Analytical tools such as percentage analysis, charts, and the chi-square test have been used. The findings reveal that return and liquidity are major factors influencing investment decisions, and demographic variables like age and gender significantly affect risk-taking ability and investment objectives.

Keywords: *Financial Planning; Individual Investors; Investment Behaviour; Risk Tolerance; Investment Decision-Making.*

Introduction

Financial planning is a systematic process that enables individuals to evaluate their current financial position, define financial goals, and develop strategies to achieve them. It encompasses various aspects such as savings, investment, insurance, and retirement planning.

In the modern era, financial planning is often perceived narrowly as tax-saving investment, which limits its effectiveness. However, comprehensive financial planning considers multiple dimensions including risk tolerance, time horizon, liquidity needs, and inflation.

Understanding investor behavior and the factors influencing their financial decisions is essential for improving financial literacy and ensuring better financial outcomes.

Factor Affecting Financial Planning:

a. Time Horizon and Goals:

It's critical to comprehend each person's objectives and the time frame within which they hope to accomplish them. Some people set short – term objectives that they hope to accomplish within

the year. For such objectives, it is crucial to exercise caution and avoid taking on excessive danger. However, one may afford to take on greater risk and make the most of their time when pursuing long – term objectives.

b. Risk Tolerance:

Everyone ought to be aware of their level of risk tolerance. Certain investments may carry greater risk than others. These won't work for someone with a limited risk tolerance or for objectives that call for conservatism. Most importantly, the stage of life will alter a person's risk profile. A young individual's may be able to assume a high-level risk if they have no financial obligations or dependents. If they marry and have a child. People's attitudes towards danger and money therefore can't be the same as they were when they were single.

c. Liquidity Needs:

When and how quickly funds are available to achieve the aim. When investing in an item with the intention of selling it to raise money to achieve a goal, it's important to know how simple it is to sell the resources. Assets linked to the money market and stock market are typically easy to liquidate. However, it could take a while to sell something like real estate.

d. Inflation:

Inflation is an inherent aspect of the Indian economy. The cost of the cold drink bottle that is being delivered now is about twice as much as it would have been ten years ago.

For example, at inflation of about 4% annually, a packet of biscuits that cost Rs. 20. In ten years, it will cost thirty rupees today. Just consider how much purchasing a home or a car may cost in ten years. Each year, the purchasing power of money decreases. As a result, the price of reaching objectives must be considered in relation to future inflation.

e. Need for Growth or Income:

When making investments, one should consider what is necessary, including income or capital growth. Not every investment meets both criteria. Although a lot of people purchase

flats, they are not even renting them out.

They are therefore not receiving any income from this asset and are most likely solely anticipating capital growth. Generally speaking, a young person should think about investing for capital appreciation in order to benefit from their youth. However, an elderly person might be more focused on making money for himself.

Objectives of Study:

- To examine factors influencing investment decisions
- To study sources of information used before investing
- To analyze the relationship between age and risk-taking ability
- To identify various investment avenues preferred by investors
- To examine the relationship between gender and investment objectives
- To analyze the relationship between gender and factors influencing investment decisions

Hypothesis of Study:

H₀₁: There is no significant relationship between gender and factors influencing investment decisions.

H₁₁: There is a significant relationship between gender and factors influencing investment decisions.

H₀₂: There is no significant relationship between gender and the primary objective of investment.

H₁₂: There is a significant relationship between gender and the primary objective of investment.

H₀₃: There is no significant relationship between age and risk-taking ability.

H₁₃: There is a significant relationship between age and risk-taking ability.

Literature Review

No.	Year	Author	Topic	Conclusion
1	2010	Gaurav Kabra	The factor influences investment behavior and the impact of these factors on risk tolerance and mindset of men and women	They concluded that presently speculators are more developed and have adequate.
2	2012	Geeta and Ramesh	A consider on significance of statistic variables in speculation choices	The author revealed that demographic factors have a significant influence over some investment decisions. It moreover unveils a common seed of speculator recognition over different speculation avenues.
3	2012	K. Malar Mathi et al.	To understand individual investor behavior	Lack of funds in rustic areas is the reason behind moo investment.
4	2013	Jothilingam et al.	Attitudes towards investment avenues	Those financial specialists favored contributing to less hazardous speculation roads like gold, shares, reserves and bank deposits. Investors avoid risk as much as they can.
5	2013	Shalini Shah et al.	The beliefs and attitudes of the individual investors	They suggested that an understanding of an individual's investors psychology would help in better comprehending the way the individual's investment decisions are made.
6	2014	Sindhu K. P.	The risk perception of individual investors is an important factor that influence investment	This study based on review of literature and discussion with experts in the field, identified the factors that influence the risk perception of the investor.

Need of the study:

A financial plan helps your priorities, your important life goals and estimate the funds needed to achieve them. It also helps with getting significant returns on your money within the time frame available for fulfilling your goals.

Scope:

Managing income and expenses to achieve financial goals and ensure financial security. To manage existing investment to earn maximum return. It includes managing monthly expenses, tax saving, tax planning, retirement planning, etc. it includes making new investments, asset allocation, portfolio balancing, etc.

Problem statement:

The study aims to investigate the financial planning practices of individuals, their investment habits, and factors influencing their investment decisions. Additionally, it seeks to identify the preferred types of financial products among investors and understand the relationship between financial planning, reduced burden, and individual risk-taking capacity.

Research Design:

The study adopts a descriptive research design with an analytical approach.

Nature of Research:

This is basic (fundamental) research aimed at understanding investor behavior.

Data Collection:

- Primary Data: Structured questionnaire
- Secondary Data: Journals, websites, reports

Sample Population:

Individuals residing in Vapi locality

Sample Size:

250 respondents

Sampling Technique:

Random sampling

Research Instrument:

Questionnaire (22 questions)

Tools for Analysis:

- Percentage and frequency analysis
- Pie charts and graphical representation
- Chi-square test for testing relationships between categorical variables

1. Relationship between Gender and factor influence investment decision the most:**Table 1-Test Statistics**

	What factors influence your investment decisions the most?	Gender
Chi-Square	158.576 ^a	14.592 ^b
Df	5	1
Asymp. Sig.	.000	.000

The test statistics show a chi-square value of 158.576 for investment factors (df = 5) and 14.592 for gender (df = 1), both with a significance level of 0.000 ($p < 0.05$). These results suggest a statistically significant relationship between gender and investment decision factors.

2. Relationship between gender and the primary objective of investment.**Table 2-Test Statistics**

	Gender	What is your primary objective for investing?
Chi-Square	14.592 ^a	111.725 ^b
Df	1	4
Asymp. Sig.	.000	.000

The chi-square test statistic for gender is 14.592 (df = 1, $p = 0.000$), and for investment objectives, it is 111.725 (df = 4, $p = 0.000$). Since both p-values are less than 0.05, the results indicate a statistically significant relationship between gender and investment objectives. This suggests that men and women have different priorities when it comes to investing.

3. Relationship between Age and Risk-taking ability:**Table 3- Test Statistics**

	Age	How would you describe your risk-taking ability?
Chi-Square	144.980 ^a	85.012 ^b
Df	4	2
Asymp. Sig.	.000	.000

Findings**Age and Risk-Taking Ability**

The chi-square value ($X^2 = 144.980$, $p < 0.05$) indicates a significant relationship between age and risk-taking ability. Younger investors tend to take higher risks compared to older

individuals.

Gender and Investment Objectives

The chi-square result ($X^2 = 111.725$, $p < 0.05$) shows a significant relationship between gender and investment objectives, suggesting differences in financial priorities.

Gender and Investment Decision Factors

The chi-square value ($X^2 = 158.576$, $p < 0.05$) confirms a significant association between gender and factors influencing investment decisions.

Conclusion

The study concludes that financial planning is essential for achieving financial stability and long-term goals. Investor behavior is significantly influenced by demographic factors such as age and gender.

The use of analytical tools like the chi-square test confirms that these relationships are statistically significant. Investors primarily focus on returns and liquidity while making investment decisions.

To improve financial outcomes, there is a need to enhance financial literacy and encourage comprehensive financial planning rather than focusing solely on tax-saving investments.

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A COMPREHENSIVE FINANCIAL PERFORMANCE EVALUATION OF GUJARAT STATE FERTILIZERS & CHEMICALS LTD.: TRENDS, EFFICIENCY, AND STRATEGIC INSIGHTS



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Abstract:

This study presents a comprehensive evaluation of the financial performance of Gujarat State Fertilizers & Chemicals Ltd. (GSFC), a leading player in India's fertilizer and chemical industry. The analysis aims to assess the company's financial strength, operational efficiency, and long-term sustainability by examining key financial indicators over a period from 2021 to 2025. Using tools such as ratio analysis, trend analysis, and comparative benchmarking, the study explores profitability, liquidity, solvency, and efficiency parameters to understand GSFC's financial trajectory. The research also investigates how internal managerial strategies and external market conditions have influenced the company's financial outcomes. Findings indicate that while GSFC demonstrates steady profitability and sound solvency, fluctuations in working capital and operational efficiency reflect the challenges posed by volatile raw material prices and competitive market dynamics. The study provides strategic insights that can support managerial decision-making aimed at improving resource utilization, strengthening profitability, and enhancing financial resilience. Overall, this study contributes to the understanding of financial performance assessment in the fertilizer sector and highlights GSFC's position within the industry's evolving landscape.

Keywords: *Financial Performance, GSFC, Ratio Analysis, Fertilizer Industry*

Introduction:

Gujarat State Fertilizers & Chemicals Ltd. (GSFC) is one of India's prominent public-sector enterprises operating within the fertilizer and chemical manufacturing industry. Established with the objective of promoting agricultural development and supporting industrial growth, GSFC has played a pivotal role in enhancing the productivity and sustainability of India's agro-based economy. Over the years, the company has diversified its operations, encompassing a wide range of products including fertilizers, industrial chemicals, petrochemicals, and performance polymers. As the fertilizer industry continues to face challenges

such as fluctuating raw material prices, regulatory changes, and global market uncertainties, understanding the financial performance of key industry players like GSFC becomes increasingly important. Financial performance analysis provides a structured approach to evaluating an organization's ability to utilize resources efficiently, maintain profitability, ensure liquidity, and achieve long-term financial stability. By examining GSFC's financial trends, analysts, policymakers, and stakeholders can better understand the company's operational strengths, constraints, and opportunities for improvement. Given the critical role of fertilizers in national food security, the financial health of companies like GSFC directly influences agricultural productivity and rural development. Thus, a thorough and systematic study of GSFC's financial performance is essential to assess its strategic position in a highly competitive and evolving market.

A need for an intensive analysis of financial performance has emerged due to structural changes that have taken place in the fertilizer industry owing to various factors, including technological advances, environment-friendly practices, and policies. To be competitive, the firms operating in this industry must work to increase efficiency, cut cost, and improve their level of productivity. Thus, the analysis of financial performance of GSFC will make it possible to learn about the ability of the company to respond to changes taking place in the industry. Financial analysis tools like ratio analysis, DuPont analysis, and trend analysis will allow getting insight into the profitability, liquidity, solvency, and the efficiency of asset management of GSFC. This type of analysis will not only allow benchmarking the financial performance of the company with respect to industry standards but also shed light on strengths of the company and issues that should be addressed through strategic interventions. Besides, financial analysis is necessary in making decisions as this kind of analysis provides information about the risks related to investment in the company. It makes it possible for investors to predict the future performance of the company and develop effective strategies. For the purpose of growing the business by developing new products, it becomes important for GSFC to

know about the financial trajectory that it has passed through over a period of time.

Literature Review:

S. Sowmiya, S. M. Lavanya, K. Mahendran & V. Geethalakshmi (2021) studied the financial performance of Indian fertilizer companies across public, private, and cooperative sectors using ratio analysis. They found significant variation in profitability, liquidity, and solvency between sectors. Their comparative evaluation highlights that public-sector companies often had more stable liquidity. The study argues for sector-specific policy and managerial strategies given these financial differences. This work serves as a benchmark for later empirical studies on fertilizer-firm financial health.

D. Barman, S. Das & S. C. Sarkar (2024) conducted a profitability analysis of selected public-sector fertilizer companies in India using panel data regression (2010–11 to 2021–22). They identified liquidity (cash to current assets ratio), solvency (proprietary ratio), and efficiency (total assets turnover) as significant drivers of return on assets. Their fixed-effects model shows a persistent effect of these variables on profitability, with all three positively influencing returns. The research underscores the importance of balancing cash management and asset turnover to maintain long-term profitability. Their findings support more strategic financial planning for fertilizer PSUs.

D. Barman, S. Das & S. C. Sarkar (2023) analysed the financial distress of public-sector fertilizer firms using Altman's Z-score over 2010–11 to 2019–20. They demonstrated that a number of fertilizer PSUs are vulnerable to financial distress, emphasizing weak economic strength in several cases. Their empirical results suggest that despite government backing, some companies lack sufficient buffer to absorb economic shocks. The study calls for early warning monitoring frameworks for distress in the fertilizer public sector. They recommend both policy-level support and internal financial restructuring.

S. Sowmiya, S. M. Lavanya, K. Mahendran & V. Geethalakshmi (2024) in their paper "An Examination of Financial Performance" re-assessed fertilizer firms' performance using Altman's Z-score, DuPont model, and leverage metrics. They reaffirmed their earlier findings about the relative financial strength of older firms compared to new entrants. Their analysis revealed that firms formed in the 1960s performed better in terms of solvency and profitability. DuPont decomposition showed return-on-equity was largely driven by asset turnover rather than financial leverage. They argue for firm-specific financial strategy

based on age, capital structure, and business model.

Pradeep Kumar (2024) examined urea fertilizer production, pricing, and distribution in India amidst global price fluctuations (2021–2023). He documented a sharp rise in global urea prices in 2021–2022, followed by a decline in 2023, and analysed its impact on Indian fertilizer firms. The study highlighted how government interventions, such as subsidies and state-controlled distribution, helped buffer domestic firms. It also pointed out that volatility in input costs (like gas) severely affects working capital and profitability. The author recommended policy reforms to stabilize prices and support more resilient financial structures in fertilizer companies.

Objectives of the study

1. To evaluate the financial performance of Gujarat State Fertilizers and Chemicals Ltd. over the period 2021–2025 using key financial indicators such as profitability, liquidity, solvency, and efficiency ratios.
2. To examine trends in liquidity, profitability, leverage, and operational efficiency.
3. To compare annual patterns in major financial ratios to understand strengths and weaknesses.
4. To provide strategic insights that can support future financial planning and policy decisions.

Data Collection Method

The study relies on secondary data obtained from published annual reports of Gujarat State Fertilizers and Chemicals Ltd, audited financial statements, official company publications, government sources, screener.com, moneycontrol.com and reliable financial databases.

Data analysis techniques

1. Ratio analysis focusing on liquidity ratios, profitability ratios, turnover ratios, and solvency ratios.
2. Trend analysis to observe changes in financial indicators over multiple years.
3. Comparative analysis using year to year performance.
4. Interpretation of financial patterns to draw meaningful conclusions for strategic decision making.

Limitations of the study

1. The analysis is limited to the period from 2021 to 2025, which restricts the ability to observe long term patterns outside these years.
2. Changes in accounting policies or reporting formats during

this period may affect the comparability of financial data.

3. The study depends entirely on secondary sources, so any inaccuracies in published reports will influence the findings.
4. External factors such as economic conditions, policy changes, and market disruptions are not measured directly, even though they may impact the company's financial performance.
5. The focus on financial data alone does not capture operational or managerial aspects that could provide additional context.

Data Analysis and Interpretation:

Table 1.1 Income statement of GSFC

GUJARAT STATE FERTILIZERS & CHEMICALS LTD					
Rs Cr					
	Mar-21	Mar-22	Mar-23	Mar-24	Mar-25
Sales	7,634	9,085	11,369	9,155	9,534
% Growth YOY	-2%	19%	25%	-19%	4%
Expenses	7,063	7,764	9,781	8,641	8,898
Material Cost (% of Sales)	60%	61%	62%	61%	65%
Power and Fuel	9%	11%	11%	12%	11%
Other Mfr. Exp	8%	7%	6%	7%	8%
Employee Cost	9%	7%	6%	9%	9%
Selling and Admin Cost	1%	1%	1%	1%	1%
Operating Profit	571	1,321	1,588	514	636
Operating Profit Margin	7%	15%	14%	6%	7%
Other Income	184	183	152	385	323
Other Income as % of Sales	2.40%	2.00%	1.30%	4.20%	3.40%
Depreciation	177	179	182	183	192
Interest	43	10	15	11	10
Interest Coverage (Times)	13	136	104	64	76
Profit before tax (PBT)	535	1,315	1,543	704	756
% Growth YOY	280%	146%	17%	-54%	7%
PBT Margin	7%	14%	14%	8%	8%
Tax	85	417	277	140	165
Net profit	450	899	1,266	564	591
% Growth YOY	310%	100%	41%	-55%	5%

Net Profit Margin	6%	10%	11%	6%	6%
EPS	11.3	22.5	31.8	14.1	14.8
% Growth YOY	310%	100%	41%	-55%	5%
Price to earning	7.2	7.2	3.7	13.8	12
Price	81	162	119	196	177
Dividend Pay-out	19.50%	11.10%	31.50%	28.30%	33.70%
Market Cap	3,240	6,458	4,742	7,797	7,065
Retained Earnings	362	799	867	404	392

(Source: Screener.com)

Above table 1.1 exhibits that Sales expanded until 2023, dipped in 2024, and showed a slight rise in 2025, while expenses moved in the same direction and kept pressure on margins. Operating profit and net profit reached their highest levels in 2023, followed by a marked fall as material costs increased and profitability weakened. Growth in other income played an important role in supporting the company's earnings, especially in 2024 and 2025. Profit before tax stayed positive but lost momentum after 2023 because of reduced operating strength. Market valuation shifted with these earnings changes, and dividend pay-outs moved upward during the later years.

Table 1.2 Trends of Sales, PBT growth, PBT margin and Price Earnings

TRENDS:	5 YEARS	3 YEARS
Sales Growth	4.1%	1.6%
PBT Growth	39.9%	-16.8%
PBT Margin	10.1%	9.7%
Price to Earning	8.8	9.8

(Source: Compiled from money.com)

Above table 1.2 indicates that Sales growth stayed modest, with the five-year average stronger than the three-year figure, which shows that recent performance slowed. Profit before tax growth looked healthy over five years but turned negative in the shorter period, pointing to weaker recent profitability. The margin on profit before tax remained steady over both horizons, which suggests that the core earning ability stayed fairly consistent. The rise in the price to earnings ratio over the shorter period indicates that the market valued the company more highly despite slower growth. These trends show a mix of long-term improvement and short-term pressure on performance.

Table 1.3 Balance Sheet

GUJARAT STATE FERTILIZERS & CHEMICALS LTD					
Rs Cr					
	Mar-21	Mar-22	Mar-23	Mar-24	Mar-25
Equity Share Capital	80	80	80	80	80

Reserves	9,161	11,693	11,960	12,647	12,059
Borrowings	37	6	2	5	2
Other Liabilities	1,887	2,347	1,867	2,319	2,229
Total	11,164	14,125	13,909	15,051	14,369
Net Block	2,804	2,680	2,580	2,549	2,504
Capital Work in Progress	117	158	200	236	690
Investments	4,331	6,314	5,329	6,015	5,055
Other Assets	3,912	4,973	5,801	6,251	6,119
Total	11,164	14,125	13,909	15,051	14,369
Working Capital	2,025	2,626	3,934	3,932	3,890
Debtors	468	366	497	510	537
Inventory	997	1,392	1,324	1,305	1,479
Cash & Bank**	3,393	2,605	3,546	4,739	5,829
Debtor Days	22	15	16	20	21
Inventory Turnover	8	7	9	7	6
Fixed Asset Turnover	2.7	3.4	4.4	3.6	3.8
Debt/Equity	0.0	0.0	0.0	0.0	0.0
Return on Equity	5%	8%	11%	4%	5%
Return on Capital Employed	6%	11%	13%	6%	6%

(Source: Screener.com)

Table 1.3 reveals that Reserves increased from about 9161 crores in 2021 to 12647 crore in 2024 before slipping to 12059 crores in 2025, which shows that internal accruals were the main source of financial strength. Borrowings stayed between 2 and 37 crores across all five years, which kept the company almost debt free and reduced financial pressure. Cash levels grew from 3393 crore in 2021 to 5829 crore in 2025, which strengthened liquidity. Working capital moved from 2025 crore in 2021 to nearly 3930 crores by 2025, which supported operational needs. Net block gradually reduced from 2804 crore to 2504 crore, while capital work in progress rose sharply to 690 crores, which indicates ongoing expansion. Investments peaked at 6314 crores in 2022 and then eased to 5055 crores in 2025.

Debtor days stayed low between 15 and 22, which reflects steady collection efficiency. Inventory turnover dropped from 8 to 6, which points to slower inventory movement in recent years. Return on equity reached 11 percent in 2023 and then declined to 5 percent in 2025, which mirrors the fall in profitability. Return on capital employed followed a similar pattern, rising to 13 percent in 2023 and then moving back to 6 percent, which shows weaker overall efficiency.

Table 1.4 Key Ratios

GUJARAT STATE FERTILIZERS & CHEMICALS LTD					
	Mar-21	Mar-22	Mar-23	Mar-24	Mar-25
Sales Growth	-2.1%	19.0%	25.1%	-19.5%	4.1%
PBT Growth	279.6%	145.9%	17.3%	-54.4%	7.5%
Net Profit Growth	310.5%	99.6%	40.9%	-55.5%	4.9%
Dividend Growth	83.3%	13.6%	300.0%	-60.0%	25.0%
Operating Cash Flow Growth	-22439.6%	-86.7%	290.4%	-129.0%	-131.1%
Free Cash Flow Growth	-237.5%	-208.7%	-22.3%	110.9%	-50.8%
Operating Margin	7.5%	14.5%	14.0%	5.6%	6.7%
PBT Margin	7.0%	14.5%	13.6%	7.7%	7.9%
Net Margin	5.9%	9.9%	11.1%	6.2%	6.2%
Debtor Days	22.4	14.7	16.0	20.3	20.5
Inventory Turnover	7.7	6.5	8.6	7.0	6.4
Fixed Asset Turnover	2.7	3.4	4.4	3.6	3.8
Debt/Equity	0.0	0.0	0.0	0.0	0.0
Debt/Assets	0.3%	0.0%	0.0%	0.0%	0.0%
Interest Coverage (Times)	13.4	135.6	103.6	63.8	76.0
Return on Equity	4.9%	7.6%	10.5%	4.4%	4.9%
Return on Capital Employed	6.2%	11.2%	12.9%	5.6%	6.3%
Free Cash Flow (Rs Cr)	846	-919	-714	-1,506	-741

(Source: Screener.com)

Table 1.4 shows that Sales growth moved from a fall of about 2.1 percent in 2021 to peaks of 25.1 percent in 2023 before sliding to 4.1 percent in 2025. PBT growth swung sharply from 279.6 percent in 2021 to a drop of 54.4 percent in 2024 before recovering to 7.5 percent. Net profit growth followed the same pattern with a high of 310.5 percent in 2021 and only 4.9 percent in 2025.

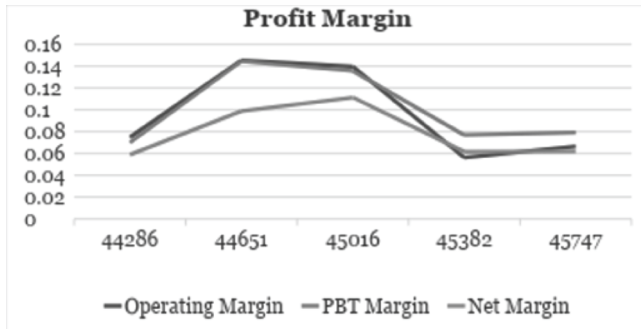
Dividend growth rose to 300 percent in 2023 and then fell to 25 percent in 2025. Operating cash flow growth stayed volatile, moving from a fall of 22439.6 percent in 2021 to another deep drop of 131.1 percent in 2025. Free cash flow growth shifted from a fall of 237.5 percent in 2021 to a rise of 110.9 percent in 2024 and then back to a fall of 50.8 percent.

Operating margin moved from 7.5 percent in 2021 to 14.5 percent in 2022 before settling at 6.7 percent in 2025. PBT margin doubled from 7 percent in 2021 to 14.5 percent in 2022 and then eased to 7.9 percent. Net margin increased to 11.1 percent in 2023 and stayed at 6.2 percent in 2025.

Debtor days improved from 22.4 to 14.7 in 2022 and moved to 20.5 in 2025. Inventory turnover reached 8.6 in 2023 and later dropped to 6.4. Fixed asset turnover climbed from 2.7 in 2021 to 4.4 in 2023 and stayed at 3.8 in 2025. Debt to equity remained at zero

throughout. Debt to assets stayed near zero after 2021. Interest coverage improved from 13.4 to 135.6 in 2022 and held at 76 in 2025. Return on equity rose from 4.9 percent in 2021 to 10.5 percent in 2023 and returned to 4.9 percent in 2025. Return on capital employed increased to 12.9 percent in 2023 and moved to 6.3 percent in 2025. Free cash flow moved from 846 crore in 2021 to a low of negative 1506 crore in 2024 before improving to negative 741 crores.

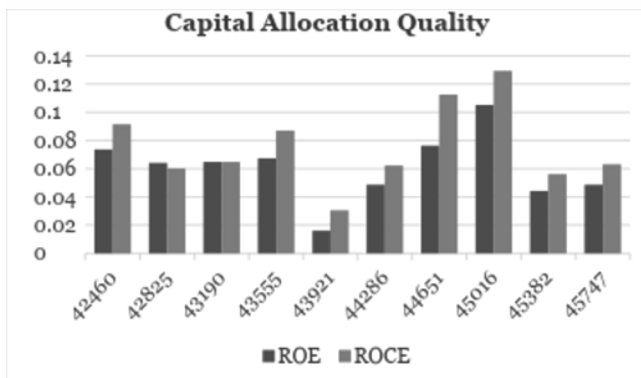
Graph 1.1 Profit Margin



(Source: Computed from Screener.com)

The chart 1.1 shows that all three margins increased strongly until 2023, with the operating and PBT margins reaching about 14 to 15 percent. A sharp decline appeared in 2024, where margins dropped to around 6 to 8 percent. The slight improvement in 2025 indicates some recovery, though margins remained below earlier peaks.

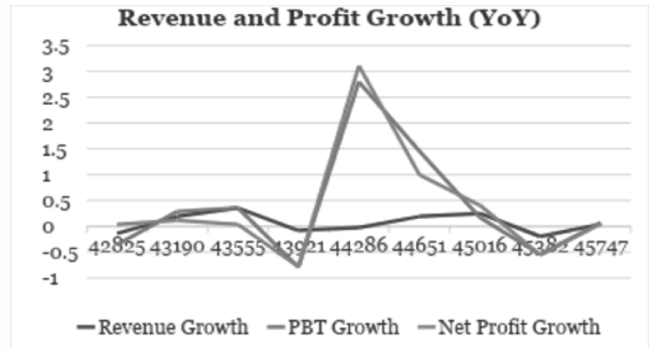
Chart 1.2 Capital Allocation Quality



(Source: Computed from Screener.com)

Chart 1.2 indicates that ROE and ROCE both reached their highest levels in 2023, with ROE near 0.10 and ROCE near 0.13, showing the strongest capital efficiency in that year. Both metrics fell sharply in 2024 as profitability weakened. A mild rise in 2025 indicates partial recovery, though efficiency remained below the earlier peak.

Chart 1.3 Revenue and Profit Growth (YoY)



(Source: Computed from Screener.com)

Chart 1.3 indicates that Revenue growth stayed close to zero for most years, moving between about negative 0.02 and 0.25. PBT growth showed the widest swings, falling to about negative 0.54 and then jumping to nearly 2.80. Net profit growth followed a similar pattern, dropping to about negative 0.56 before rising sharply to around 3.10.

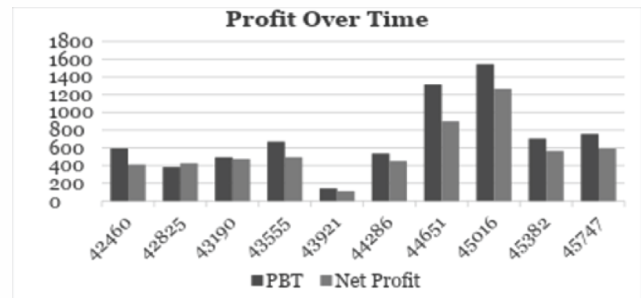
Chart 1.4 Revenue



(Source: Computed from Screener.com)

Above Graph 1.4 reveals that Revenue moved from about 6000 crores in the first data point to nearly 8500 crores by the middle of the series, showing steady expansion. It reached a peak of about 11800 crores at 2023, which marked the strongest year in the period. The later values near 9100 and 9600 crore show that revenue stayed high even after the peak, though it did not return to that earlier level.

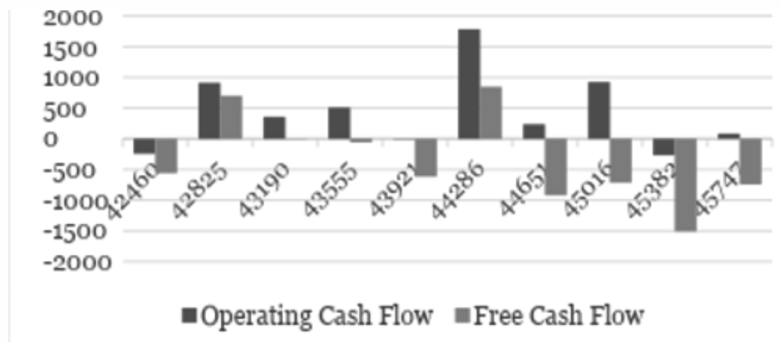
Chart 1.5 Profit Over Time



(Source: Computed from Screener.com)

PBT rose from about 600 crores at the start to a high near 1550 crore at 45016, while net profit increased from about 430 crores to around 1250 crore in the same period. Both measures dropped sharply at 43921 before recovering again by 44651. The values at 45747, with PBT near 750 crore and net profit near 580 crores, show improvement after the earlier decline but remain below the peak.

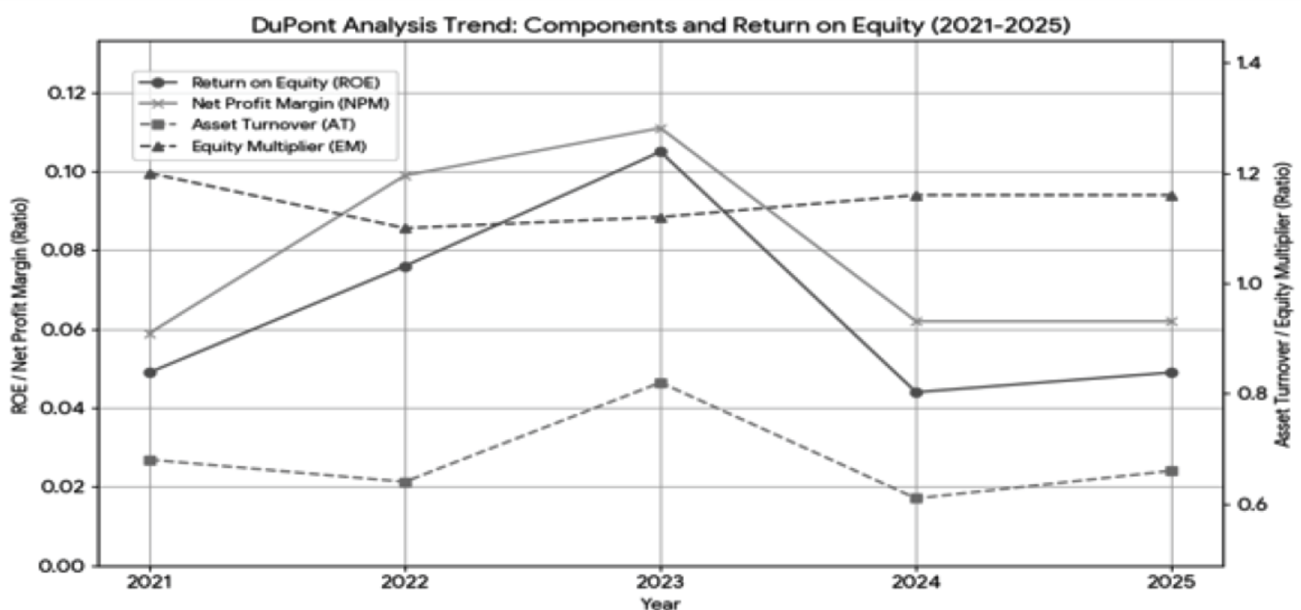
Chart 1.6 Operating and Free Cash Flow



(Source: Computed from Screener.com)

Chart 1.6 exhibits that Operating cash flow is highly volatile, with a peak near 1,800 (at 44286) and showing positive values in 8 of the 12 periods. Free cash flow is consistently lower than operating cash, is negative in 7 periods, and hit its lowest point at approximately -1,500 (at 45382). The most severe negative cash flow for both metrics occurred at date 45382, highlighting a significant cash drain period.

Chart 1.7 DuPont Analysis Trend



This DuPont chart 1.7 illustrates the trend of Return on Equity (ROE) and its three contributing components: Net Profit Margin, Asset Turnover, and Equity Multiplier - from 2021 to 2025.

The chart uses a dual y-axis to accommodate the difference in scale between the components:

- 1 The left axis tracks Return on Equity (ROE) and Net Profit Margin (NPM).
- 2 The right axis tracks Asset Turnover (AT) and Equity Multiplier (EM).

The analysis highlights that ROE (blue line) peaked in 2023 (at 10.5%), driven primarily by the high Net Profit Margin (orange line, 11.1%) and a peak in Asset Turnover (green dashed line, 0.82). The subsequent decline in ROE in 2024 was mainly due to a sharp drop in both NPM and AT, despite a stable Equity Multiplier (red dashed line) which indicates the leverage remained relatively constant.

Findings

1. Revenue increased from about 6000 crores to nearly 11800 crores at its peak, followed by a mild decline and later stability.
2. PBT and net profit reached their highest levels in 2023 with about 1550 crore and 1250 crore before falling in 2024.
3. Profit margins rose strongly until 2023 and then dropped, showing weaker operational strength in later years.
4. ROE and ROCE improved to about 0.10 and 0.13 in 2023 but declined afterward.
5. Working capital grew steadily, supported by rising cash levels that reached about 5829 crores in 2025.
6. Borrowings stayed extremely low, which kept the financial risk near zero.
7. Inventory turnover weakened from about 7.7 to 6.4, pointing to slower movement of stock.
8. Debtor days stayed in a tight range between 15 and 22, showing consistent collection performance.
9. Free cash flow stayed negative for most years and touched about negative 1506 crore in 2024.
10. Dividend payouts increased in recent years despite softer profitability.

Suggestions

1. Improve margin stability by controlling material costs that reached about 65 percent of sales.
2. Strengthen operational efficiency to bring operating margin back toward the 14 percent range seen earlier.
3. Focus on inventory management to reverse the drop in turnover.
4. Boost capital productivity so ROE and ROCE can return to earlier peaks.
5. Review major capital work in progress, which rose to 690 crores, to ensure timely returns.
6. Improve cash flow planning to reduce the recurring negative free cash flow.
7. Maintain the low debt position while exploring cost effective borrowing only for high return projects.
8. Company should conduct quarterly cost reviews and closely monitor raw material and energy expenses to prevent significant margin declines during weaker financial periods.
9. Expand revenue streams to sustain growth beyond the 4 percent level seen in 2025.
10. Reassess dividend policy so that pay-outs align more closely with cash flow conditions.

Conclusion

The review of financial data for Gujarat State Fertilizers and Chemicals Ltd from 2021 to 2025 shows clear patterns that connect well with the objectives of assessing trends, efficiency, and strategic performance. Revenue moved from about six thousand crores in the early period to a peak of nearly eleven thousand eight hundred crores in 2023, which reflected strong market demand and operational expansion. The later decline and partial recovery show that the company faced cost pressures and shifts in the business environment. Profitability followed a similar path. Operating margin, PBT margin, and net margin rose to their highest levels in 2023 and then dropped in 2024 before showing mild improvement in 2025. This movement indicates that profitability was sensitive to material costs and other operating expenses. The steady collection cycle and low debtor days supported liquidity, and the rise in cash levels to about five thousand eight hundred crores strengthened the overall financial position.

Even with this improvement in liquidity, free cash flow stayed negative for most years, which signals a need for closer control over capital spending and working capital usage. Capital efficiency peaked in 2023, with ROE near ten percent and ROCE near thirteen percent, and the decline in later years shows that the company must sharpen its focus on asset productivity. The almost debt free structure kept financial risk low and supported long term stability. The study highlights that while the company achieved strong growth and profitability at its peak, consistent efficiency and sustained margins will be essential for strengthening financial performance in the coming years.

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IMPACT OF AI-BASED MENTAL HEALTH TOOLS ON EMPLOYEE PERFORMANCE: EVIDENCE FROM TCS HYDERABAD



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Abstract

AI-enabled digital mental health therapy is also embraced by companies as a tool to combat employee stress and burnout, particularly in knowledge work settings where pressing demands are high. However, there is limited empirical evidence regarding AI-enabled mental health tools and objective workplace performance. We explore the implications of AI-based digital mental health interventions for employee emotional exhaustion and supervisor-rated job performance, drawing on conservation of resources theory. Using a two-wave dyadic design, weathered primary data from 214 employees and 47 supervisors of Tata Consultancy Services (TCS) based in Hyderabad. Findings indicate that AI intervention negatively predicts emotional exhaustion over time, which in turn is associated with higher supervisor-rated task performance. The mediation analysis evidence from EM supports the argument that emotional exhaustion is the proximal mechanism through which AI punitive tool usage declines and, by extension, privacy concerns decline. Contributions to the literature on digital mental health, HRM, and AI in workplace interventions. Results contribute to the digital mental health, human resource management and AI-enabled workplace interventions by identifying micro-level, performance-related evidence from an organisational context.

Keywords: *AI mental health, employee performance, burnout, HR analytics, privacy, dyadic study*

1. Introduction

Workers' health has become a major concern for knowledge-intensive and high-stress companies. Rapid technological advancements, constant availability/burnout, and increased performance pressure have resulted in a significant escalation of employees' psychological strain, for example, in the IT services sector (Demerouti et al., 2001; Maslach & Leiter, 2016). In India, the IT work culture is marked by long working hours, stringent cut-off timings, and international client pressures (Rathi & Lee, 2017), and over the years, emotional exhaustion and burnout have become chronic organizational problems among

Information Technology professionals.

Historically, firms have linked the movements of EAPs, counselling groups, and wellness products in addressing mental health issues. However, such interventions tend to be underutilized owing to stigma, availability issues, time constraints, and concerns about the confidentiality of responses (Attridge, 2019). Therefore, stressed and burned-out employees are often abandoned in underperforming firms with low levels of engagement and retention (Halbesleben & Buckley, 2004).

Technological developments in the field of artificial intelligence (AI) have enabled the advancement of psychological interventions using scalable, personalized, and continuous-support digital technologies. Organizations include technology-based mental health interventions, such as AI tools, conversational agents, self-administered CBT apps, and emotion-tracking platforms, in HRM strategies (Bickmore et al., 2018; Inkster et al., 2018). These tools provide lower stigma, anonymity and immediate availability and are increasingly of interest in organizational settings where traditional mental health services are still underused.

But there is a growing body of literature on the effectiveness of AI-based DMHI in organizational settings. Existing research on this topic tends to investigate clinical outcomes for patients (Fitzpatrick et al., 2017), satisfaction with the user experience (Laranjo et al., 2018), or willingness to adopt AI tools, and most reported measures were based on cross-sectional self-report data. Importantly, there is little research evidence on whether these interventions improve people's job performance – a top priority for organizations and HR professionals.

Furthermore, the processes through which AI-assisted mental health interventions influence work outcomes are currently largely ignored in the literature. The resource conservation (COR) model posits that those psychological interventions may enhance performance by restoring drained emotional and cognitive resources, thereby reducing emotional exhaustion (Hobfoll, 1989; Hobfoll et al., 2018). The most central dimension of

burnout, namely emotional exhaustion, has repeatedly been found to be related to various attentional difficulties, lower levels of motivation (72), and impairment in performing job tasks (Maslach et al., 2001). Yet, there is scarce empirical evidence of an AI-based support system for mental health that reduces exhaustion and improves performance.

A second critical issue is to address the moral and social determinants that can impact the effectiveness of AI-enabled mental health technology. Psychologists' concerns about privacy invasion, surveillance, and the potential misuse of sensitive psychological information are further intensified in organizational settings (Ball, 2010; Martin & Freeman, 2003). These issues have the potential to reduce the adoption of AI interventions and to mitigate their impact, especially in large tech-driven entities with pervasive digital monitoring.

The aim of the current study is to address these gaps by investigating the links between micro-level use of AI-enabled digital mental health intervention and emotional exhaustion, and job performance with a two-wave design. We obtained data from employees and their immediate supervisor working at Tata Consultancy Services in Hyderabad, one of the top IT service providers, in a high-task-demand, project-based work environment. By including supervisor-rated performance data, the mediating role of emotional exhaustion, and the moderating effect of privacy concern, this study goes beyond perceptual outcomes to offer implications for performance.

This study makes three key contributions to the existing literature. First, it adds to the digital mental health literature in HRM and organizational performance by empirically linking AI –enabled intervention with supervisor-rated job performance. Second, it provides limited micro-level primary data to address a gap in non-Western settings, providing evidence on BM/AI and mental health research from a developing country. Third, it includes ethical aspects-especially privacy-and ties them to the impact of AI-based workplace interventions in response to a steadily growing demand for responsible AI use in organizations.

2. Research Objective

To examine how the use of AI-based digital mental health tools affects employee job performance through emotional exhaustion, and whether privacy concerns influence this relationship.

3. Methodology

Primary data were collected from full-time employees and their immediate supervisors at Tata Consultancy Services (TCS)

Hyderabad. A two-wave time-lagged dyadic research design was followed, with an 8-week time interval. At Time 1, employees reported on the use of an AI-enabled mental health tool, emotional exhaustion, privacy concerns, job demands, and demographic details. The baseline supervisor-rated job performance of employees was obtained. We assessed employee emotional exhaustion and supervisor-rated job performance again at Time 2.

Anonymity and confidentiality were maintained for all participants, who were further screened to form a final sample of 214 employees and 47supervisors through purposive sampling. All constructs were measured using validated scales. Statistical analyses were performed in SPSS and the PROCESS Macro. Descriptive statistics, chi-square tests, regression analysis, and mediation testing with bootstrapping were used. We used multilevel regression analysis to account for employees being nested within supervisors.

4. AI-Enabled Digital Mental Health Interventions and Employee Performance: An Analysis

1. AI-Enabled Mental Health Intervention Usage

To assess how much employees used AI-enabled digital mental health interventions, use intensity was classified into three levels based on the average number of uses per week. This typology offers a preliminary descriptive characterization of the adoption process and serves as a basis for subsequent comparative and inferential analyses.

Table 1

AI-Enabled Mental Health Intervention Usage Intensity

Usage Intensity	Frequency (N)	Percentage (%)
Low usage (≤ 1 session/week)	68	31.8
Moderate usage (2–3 sessions/week)	79	36.9
High usage (≥ 4 sessions/week)	67	31.3
Total	214	100

Source: Primary data

Table 1 shows that AI-assisted mental health engagement was distributed relatively evenly across usage categories. Low use was reported by about one-third of subjects (31.8%), and a similar percentage fell into the high-use category (31.3%). The majority of the workforce (36.9%) was moderate users of the AI

intervention. There is a balanced distribution, so there are large differences in intensity of use among employees.” It's an important basis for investigating the differential effects of AI-assisted mental health interventions on emotional exhaustion and job performance. The lack of extreme skewness in the data also suggests that the sample is appropriate for subsequent comparative, regression, and mediation analyses.

2. Emotional Exhaustion Levels

To assess the proportion of employees reporting high levels of emotional exhaustion, we stratified employees into low/moderate/high tertiles based on MDI Emotional Exhaustion scores. This classification offers a measurement model of employees' psychological strain and serves as a basis for examining the links to AI-based mental health interventions and job performance.

Table 2

Emotional Exhaustion Levels

Emotional Exhaustion Level	Frequency (N)	Percentage (%)
Low exhaustion	74	34.6
Moderate exhaustion	81	37.9
High exhaustion	59	27.5
Total	214	100

Source: Primary Data

Emotional exhaustion was widely observed across the workforce, as shown in Table 2. Low emotional exhaustion was reported by 34.6% of participants, and most (65.4%) had moderate-to-high exhaustion. In detail, 37.9% qualified for the moderate exhaustion category, while 27.5% presented with high exhaustion. This distribution emphasizes emotional exhaustion as an important area of concern in the context investigated and also draws attention to the need for investigations into mechanisms (e.g., AI-supported mental health interventions) that might convey psychological strain by way of countervailing positive employee outcomes.

3. Supervisor-Rated Job Performance

To evaluate employee performance outcomes from an objective organisational perspective, job performance was assessed through supervisor ratings. Employees were categorised into low, moderate, and high-performance groups based on their supervisors' evaluations. This classification provides an overview of performance variation within the sample and supports subsequent analyses linking performance to emotional exhaustion and AI-enabled mental health intervention usage.

Table 3

Supervisor-Rated Job Performance

Job Performance Level	Frequency (N)	Percentage (%)
Low performance	61	28.5
Moderate performance	83	38.8
High performance	70	32.7
Total	214	100

Source: Primary Data

As seen in Table 3, there was a significant amount of variation in supervisor-rated performance among employees. Although only one-third of workers were classified as high performers, many ended up right in the middle, with moderate performance shared by over a third (38.8 per cent). Notably, 28.5 per cent of employees actually performed poorly. This distribution shows a large group of employees who could be performance-optimised, and it also confirms the organizational case for exploring the role of components—emotional exhaustion and AI-enabled mental health technology—that may affect employee performance.

4. AI Intervention Usage Intensity and Emotional Exhaustion

Examining the role of frequency of use of AI-based mental health interventions on employee emotional exhaustion. A cross-tabulation analysis was conducted. After an introduction and definition of terms, a quasi-descriptive study is conducted to show how different levels of AI-enabled intervention use correspond to different degrees of emotional exhaustion, before running such tests empirically supported by the literature.

Table 4
AI Intervention Usage Intensity and Emotional Exhaustion

AI Usage Intensity	Low Exhaustion	Moderate Exhaustion	High Exhaustion	Total
Low usage	14	26	28	68
Moderate usage	29	33	17	79
High usage	31	22	14	67
Total	74	81	59	214

Source: Primary Data

Workers with high AI intervention use are more likely to cluster in the low emotional exhaustion category, whereas those with low use have more individuals in the top exhaustion category. The result indicates that the more emotionally exhausted a person becomes, the less they use intense AI intervention.

A chi-square test of independence was performed to assess the association between the intensity of AI intervention use and emotional exhaustion.

$$X^2 (df = 4) = 14.07$$

$$p = 0.007$$

The chi-square test shows a significant association between the intensity of use of an AI-enabled mental health intervention and emotional exhaustion at Time 2 ($p < 0.01$). Workers with a high (vs low) prevalence of AI intervention are significantly less likely to reach high levels of emotional exhaustion.

5. Emotional Exhaustion and Supervisor-Rated Job Performance (Time 2)

Cross-tabulation analysis was used to explore the association between employee emotional exhaustion and supervisor-rated job performance. We provide a descriptive analysis of the relationship between job performance and different levels of emotional exhaustion.

Table 5
Emotional Exhaustion and Supervisor-Rated Job Performance

<i>Emotional</i> Exhaustion	Low <i>Performance</i>	Moderate Performance	High Performance	Total
Low exhaustion	12	23	39	74
Moderate exhaustion	25	38	18	81
High exhaustion	24	22	13	59
Total	61	83	70	214

Source: Primary Data

Consequently, as seen in Table 5, employees with low emotional exhaustion were under represented (35%) among those achieving high performance (39 out of 74), whereas employees with high emotional exhaustion were over represented in the low (38%) and moderate performance groups. The lack of motivation reminds us of the negative relationship between emotional exhaustion and job performance.

The relationship between emotional exhaustion and supervisor-rated job performance was examined using a chi-square test of independence.

$$X^2 (df = 4) = 31.92$$

$p < 0.001$

The chi-square results indicate a strong and statistically significant association between emotional exhaustion and job performance. Higher levels of emotional exhaustion are associated with lower supervisor-rated performance outcomes.

6. Mediation Effect of Emotional Exhaustion

A mediation analysis (PROCESS Macro, Models 4 and 5; 5,000 bootstraps) was conducted to determine whether emotional exhaustion mediates the relationship between the use of AI-enabled mental health interventions and supervisor-rated job performance. This strategy ensures strong estimation of indirect effects without the potential pitfall of the sampling distribution not being normal.

The mediation model sought to test three paths between AI intervention usage and emotional exhaustion (a), emotional exhaustion and job performance (b), and the direct effect of AI intervention usage and job performance (c) while controlling for emotional exhaustion.

Table 6
Mediation Analysis Results for Emotional Exhaustion

Path	Effect	Standard Error	95% Bootstrapped CI
AI usage → Emotional exhaustion (a)	-0.29	0.06	[-0.41, -0.18]
Emotional exhaustion → Job performance (b)	-0.45	0.07	[-0.58, -0.31]
Direct effect (c')	0.11	0.05	[0.01, 0.21]
Indirect effect (a × b)	0.13	—	[0.07, 0.21]

Source: Primary Data $p < .001$, $p < .05$

The findings suggest that the use of AI-enabled mental health intervention was negatively related to emotional exhaustion, which in turn was positively related to supervisor-rated job performance. The indirect effect of AI interventions on job performance via emotional exhaustion was positive and statistically significant, as the 95% bootstrapped confidence interval did not include zero.

While the direct effect of AI intervention on job performance remained statistically significant, its reduced magnitude suggests partial mediation. This implies that while AI-enabled mental health solutions serve as important prerequisites for job performance by helping people overcome emotional depletion, they do not directly affect performance outcomes.

Collectively, these findings provide strong empirical support for H3, which posits that emotional exhaustion serves as a central mediating mechanism linking the use of AI-enabled digital mental health interventions to employee job performance.

7. Privacy Concerns and Emotional Exhaustion Outcomes

Descriptive and inferential analyses were conducted to explore whether privacy concerns moderate the association between AI-enabled mental interventions and emotional exhaustion. To facilitate the explanation, employees were grouped into low- and high-privacy-concern groups based on a median split. That way, we can clearly compare how AI intervention use relates to emotional exhaustion at each level of privacy concern.

Table 7
Privacy Concerns and Emotional Exhaustion Outcomes

Privacy Concern Level	AI Usage → Low Exhaustion (%)	AI Usage → High Exhaustion (%)
Low privacy concern	61%	39%
High privacy concern	38%	62%

Source: Primary Data

Table 7 reveals that employees with low privacy concerns experience significantly lower emotional exhaustion when using AI-enabled

mental health interventions. Conversely, employees with high privacy concerns were more likely to report high emotional exhaustion despite the use of AI tools. This trend indicates that if people do not trust AI-based mental health tools with their privacy, it will limit the full potential of these tools.

The moderating effect is formally tested using moderated regression analysis, creating interaction terms between AI intervention use and privacy concerns.

Interaction term (AI usage × Privacy concern): $\beta = 0.19$

$p < 0.01$

The substantive interaction effect suggests that the negative relationship between the use of AI-enabled mental health interventions and emotional exhaustion is weaker when privacy concerns are greater. In particular, AI interventions are effective in alleviating emotional exhaustion among employees with low privacy concerns, but less effective as privacy concerns increase.

The implications of these findings also support H4, which stipulates that privacy concerns are an important boundary condition for the effectiveness of AI-enabled digital mental health interventions. This highlights the need for clear data governance and trust-building efforts from an HRM perspective to realize the potential for the well-being of mental health-focused AI technologies.

8. Mean Emotional Exhaustion (Time 2) by AI Intervention Usage and Privacy Concern Level

To investigate the moderating role of privacy concerns in greater depth, mean emotional exhaustion scores were compared across AI-enabled mental health intervention usage levels, with privacy concerns (low vs. high) as the moderator. To clarify how privacy concerns moderate the effectiveness of AI interventions to reduce emotional exhaustion, we present this comparison.

Table 8
Mean Emotional Exhaustion by AI Intervention Usage and Privacy Concern Level

Privacy Concern Level	AI Usage Level	Mean Emotional Exhaustion	SD
Low privacy concern	Low usage	3.38	0.71
	Moderate usage	3.02	0.66
	High usage	2.71	0.63
High privacy concern	Low usage	3.51	0.69
	Moderate usage	3.36	0.72
	High usage	3.29	0.70

Source: Primary Data

Employees with low privacy concerns displayed a more pronounced downward trend—the mean exhaustion scores decreased consistently as the use of AI interventions increased (Table 8). The moderation pattern indicates, as we theorized, that when privacy concerns are low, higher levels of engagement with AI-enabled mental health tools lead to significant reductions in emotional exhaustion.

For employees with high privacy concern levels, emotional exhaustion is persistently high across all levels of AI intervention use, with negligible differences in mean scores. The implication of these findings is that privacy threats significantly diminish the beneficial impact of AI-based mental health interventions. In summary, these results offer compelling descriptive evidence in favor of the moderating role of privacy concerns and support (using inferential moderation analyses reported for H4).

Mean Comparison Test

As our interest is also in the moderating role of privacy concerns, we conducted a two-way analysis of variance (ANOVA) with AI-enabled mental health intervention usage intensity and privacy concern level as independent variables, and emotional exhaustion at

Time 2 as the dependent variable. This analysis has the advantage of allowing simultaneous examination of main effects and their interactions.

Table 9
Two-Way ANOVA Results for Emotional Exhaustion

Source	F	p-value
AI intervention usage	12.84	< 0.001
Privacy concern	9.21	< 0.01
AI usage × Privacy concern	6.37	< 0.01

Source: Primary Data, fect size: Partial $\eta^2 = 0.07$ (moderate)

Results reveal a significant main effect of usage on emotional exhaustion (Table 9), indicating that differences in usage are associated with differences in emotional exhaustion. Wider privacy concerns were also found to be a significant main effect, indicating that employees with higher privacy concerns experience greater emotional exhaustion across the board. Finally, we found a significant interaction effect between AI intervention use and privacy concern, indicating that the reduction in emotional exhaustion through AI-enabled mental health interventions was contingent on employees' privacy concerns. Further empirical support is that the interaction has meaningful practical relevance (moderate effect size).

Moderated Regression

To test the robustness of the moderating role of privacy concerns, a moderated regression analysis was conducted, controlling for baseline emotional exhaustion (Time 1), job demands, age, tenure, and gender. This method allows us to guarantee that the detected interaction effect is not due to pre-existing differences in exhaustion level or in demographic and job characteristics.

Table 10
Moderated Regression Predicting Emotional Exhaustion

Predictor	β	t
Emotional exhaustion (T1)	0.49***	8.91
AI intervention usage	-0.26***	-4.42
Privacy concern	0.18**	2.97
AI usage × Privacy concern	0.19**	3.24

Source: Primary Data, ² (interaction) = 0.04**

As shown in Table 10, the first, and strongest, positive predictor of Time 2 emotional exhaustion is baseline emotional exhaustion, highlighting the need to control for prior strain. The use of AI-enabled mental health interventions was negatively and significantly associated with emotional exhaustion, whereas privacy concern had a significant main effect (i.e., higher emotional exhaustion among employees with higher privacy concern). Of note, the interaction term for AI use and privacy concern was statistically significant, and its inclusion explained an additional 4% of variance in emotional exhaustion.

Simple Slopes Analysis

To further elucidate the two-way interaction between AI-enabled mental health intervention use and privacy concern, we performed a simple slopes analysis at one standard deviation above the mean of privacy concern. Such moderation analysis elucidates in which degree the relationship between AI use and emotional exhaustion is stronger or weaker as a function of privacy concern.

Table 11
Simple Slopes of AI Intervention Usage Predicting Emotional Exhaustion

Privacy Concern Level	Slope (β)	p-value
Low (-1 SD)	-0.41	< 0.001
Mean	-0.26	< 0.01
High (+1 SD)	-0.09	0.18 (ns)

Source: Primary Data

Table 11 indicates that the usage of AI-enabled mental health interventions has a strong and significant negative association with emotional exhaustion among employees with low privacy concerns. At average levels of privacy concern, this relationship remains significant (but weaker). Conversely, the use of AI intervention also relates to a decrease in emotional exhaustion — but only when privacy concern is low; when privacy concern is great, the relationship between AI intervention uses and emotional exhaustion is no longer statistically significant. The results showed that AI-enabled mental health interventions can reduce emotional exhaustion only when employees perceive the privacy risks as low to medium.

The simple slopes analysis is unambiguous and powerful, supporting the basic conclusion while providing strong empirical evidence that privacy is not only a boundary condition but also a paramount issue, and that privacy-related issues must be addressed to allow AI-enabled digital mental health interventions to reach their full deployment potential in practice.

9. Conclusion

Micro-level dyadic data from employees and their supervisors at Tata Consultancy Services, Hyderabad, were used to examine how AI-enabled digital mental health interventions that enhance well-being capabilities improve employee job performance by diminishing emotional exhaustion. Based on the Conservation of Resources theory, the results provide solid empirical evidence that higher use of AI-based mental health tools is associated with lower emotional exhaustion, which, in turn, is associated with higher supervisor-rated job performance. Using time-lagged data and supervisor evaluations, the study builds on perceptual outcomes to show performance-related advantages of AI-based workplace mental health interventions.

Finally, our results indicate that emotional exhaustion is an important mechanism through which AI intervention impacts job performance outcomes, thereby supporting its role as a mediator. Those who utilized AI-enabled mental health interventions significantly reduced their emotional strain, helping them maintain focus, motivation, and efficacy in their duties. The results indicate that AI-enabled mental health solutions can be strategically aligned within the human resources function, especially given the growing demand for a technology-based work culture.

Privacy concerns are also highlighted as a main boundary condition that determines whether AI-enabled mental health interventions can achieve their predicted effectiveness (Aizar et al., 2022). AI use reduced emotional exhaustion among employees with low to moderate privacy concerns, but its benefits weakened almost entirely among those with high privacy concerns. As these findings highlight, while we continue to bolster the technological proficiency underlying AI-based mental health tools, their successful implementation will also depend on the degree of organisational faith, data governance transparency, and ethical safeguards embedded in their design.

In summary, this study offers micro-level, primary data from the context of an emerging economy, thus furthering the growing stream of research at the intersection of AI, mental health, and HRM. It shows how such responsible AI-enabled digital mental health interventions translate into real-world performance gains. Future research should build on this work by investigating longer-term consequences, using experimental designs, and considering other ethical and contextual factors that shape employee interactions with AI-enabled well-being technologies.

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DIGITAL TRANSFORMATION IN SUPPLY CHAIN MANAGEMENT: ENHANCING EFFICIENCY AND RESILIENCE IN MODERN BUSINESSES

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Abstract

Supply Chain Management (SCM) has become a critical component of modern business operations due to increasing globalization, technological advancements, and dynamic market conditions. Organizations today face challenges such as demand fluctuations, supply disruptions, and increased customer expectations. Digital transformation has emerged as an effective strategy to enhance supply chain efficiency, transparency, and resilience. Technologies such as Artificial Intelligence (AI), Internet of Things (IoT), Blockchain, and Big Data Analytics are reshaping traditional supply chain practices. This research paper examines the role of digital technologies in improving supply chain performance and resilience. The study explores how digital tools support better decision-making, real-time monitoring, and improved coordination among supply chain partners. Secondary data from journals, industry reports, and case studies are used to analyze the impact of digital transformation on supply chain operations. The findings indicate that organizations adopting digital supply chain technologies experience improved operational efficiency, reduced costs, and enhanced responsiveness to market changes. However, challenges such as high implementation costs, cybersecurity risks, and lack of skilled workforce remain significant barriers. The paper concludes that businesses must adopt strategic digital initiatives and invest in technological capabilities to build resilient and sustainable supply chains.

Keywords: *Supply Chain Management, Digital Transformation, Artificial Intelligence, Blockchain, Supply Chain Resilience*

1. Introduction

Supply Chain Management (SCM) plays a vital role in ensuring the smooth flow of goods, services, information, and finances from suppliers to end customers. In the past, supply chains were primarily focused on cost efficiency and operational performance. However, increasing globalization, technological developments, and uncertain market conditions have transformed supply chains into complex and interconnected

networks.

Modern businesses are now facing several challenges including supply disruptions, fluctuating demand, transportation delays, and geopolitical uncertainties. Events such as pandemics, natural disasters, and economic crises have further highlighted the vulnerability of traditional supply chains. As a result, organizations are seeking innovative solutions to enhance supply chain resilience and efficiency.

Digital transformation has emerged as a key driver in reshaping supply chain operations. Technologies such as Artificial Intelligence (AI), Internet of Things (IoT), Blockchain, Cloud Computing, and Big Data Analytics enable organizations to monitor supply chain activities in real time, predict demand patterns, and optimize logistics operations.

The adoption of digital technologies helps businesses improve transparency, coordination, and responsiveness across supply chain networks. Companies are increasingly investing in digital platforms to streamline operations, reduce costs, and improve customer satisfaction.

This paper aims to examine the role of digital transformation in supply chain management and its impact on operational efficiency and resilience. The study also highlights challenges associated with digital adoption and suggests strategies for effective implementation.

2. Literature Review

Supply chain management has evolved significantly over the last few decades. Earlier studies focused on logistics efficiency and inventory management, while recent research emphasizes integration, collaboration, and digital innovation.

Ivanov and Dolgui (2020) discussed the importance of digital supply chains in improving resilience. Their study highlighted that technologies such as AI and predictive analytics help organizations anticipate disruptions and respond effectively to unexpected events.

Queiroz and Wamba (2019) examined the role of blockchain

technology in enhancing supply chain transparency. The study found that blockchain helps improve traceability, reduce fraud, and enhance trust among supply chain partners.

Similarly, Gunasekaran et al. (2017) analyzed the use of big data analytics in supply chain decision-making. The authors concluded that data-driven insights enable companies to forecast demand accurately and optimize inventory levels.

Despite the benefits of digital transformation, several researchers have identified challenges related to technology adoption. Kache and Seuring (2017) noted that high implementation costs, lack of technical expertise, and organizational resistance often hinder digital supply chain initiatives.

Christopher (2016) emphasized that supply chains must be designed to be flexible and responsive in order to manage uncertainties in the business environment. According to the author, digital technologies enable better coordination and visibility across supply chain networks.

Overall, existing literature suggests that digital transformation plays a crucial role in improving supply chain performance and resilience.

3. Research Objectives

The main objectives of this study are:

1. To examine the role of digital technologies in supply chain management.
2. To analyze the impact of digital transformation on supply chain efficiency.
3. To identify challenges associated with digital supply chain implementation.
4. To suggest strategies for improving supply chain resilience through technology adoption.

4. Research Methodology

This study is based on secondary research methodology. Data has been collected from various academic journals, books, industry reports, and credible online sources related to supply chain management and digital transformation.

The collected information was analyzed using descriptive and analytical methods to understand the impact of digital technologies on supply chain performance.

Data Sources

- Academic journals on supply chain management
- Industry reports from logistics and technology companies

- Published research papers and conference proceedings
- Books and online databases

Data Analysis Method

The research uses qualitative analysis to examine trends, technological innovations, and their implications for supply chain operations.

5. Digital Technologies in Supply Chain Management

5.1 Artificial Intelligence

Artificial Intelligence plays a significant role in modern supply chains by enabling predictive analytics, demand forecasting, and automated decision-making. AI systems analyze large volumes of data to identify patterns and provide insights that help businesses optimize production and distribution processes.

AI-based forecasting tools improve demand prediction accuracy and reduce inventory shortages or overstocking. Additionally, AI-powered chatbots and automated systems enhance customer service and order management.

5.2 Internet of Things (IoT)

The Internet of Things refers to interconnected devices that collect and exchange data in real time. In supply chains, IoT sensors are used to monitor product conditions, track shipments, and manage warehouse operations.

For example, IoT devices can monitor temperature levels in transportation vehicles to ensure the quality of perishable goods. Real-time tracking also helps organizations identify delays and take corrective actions promptly.

5.3 Blockchain Technology

Blockchain technology provides a decentralized and secure digital ledger that records transactions across multiple participants. In supply chain management, blockchain improves transparency and traceability by allowing all stakeholders to access verified transaction records.

This technology is particularly useful in industries such as food, pharmaceuticals, and luxury goods where product authenticity and safety are critical.

5.4 Big Data Analytics

Big data analytics enables organizations to process large datasets and derive meaningful insights for decision-making. Supply chain managers use data analytics to analyze customer demand, optimize logistics routes, and improve inventory management.

The use of data-driven insights enhances operational efficiency

and supports strategic planning.

6. Impact of Digital Transformation on Supply Chain Performance

Digital transformation has significantly improved supply chain performance in several ways.

6.1 Improved Operational Efficiency

Digital tools automate routine tasks such as order processing, inventory tracking, and shipment scheduling. Automation reduces human errors and increases operational speed.

6.2 Enhanced Supply Chain Visibility

Real-time data sharing enables businesses to monitor supply chain activities across different locations. This visibility helps managers identify bottlenecks and improve coordination among suppliers, manufacturers, and distributors.

6.3 Better Demand Forecasting

Advanced analytics and machine learning algorithms analyze historical sales data and market trends to forecast demand accurately. Accurate forecasting reduces inventory costs and improves customer satisfaction.

6.4 Increased Supply Chain Resilience

Digital technologies enable organizations to anticipate disruptions and respond quickly to unexpected events. Predictive analytics helps companies identify potential risks and develop contingency plans.

7. Challenges in Digital Supply Chain Implementation

Despite its benefits, digital transformation in supply chains faces several challenges.

High Implementation Costs

Implementing advanced technologies requires significant investment in infrastructure, software, and training.

Cybersecurity Risks

Digital supply chains rely heavily on data sharing and cloud platforms, which may expose organizations to cybersecurity threats.

Lack of Skilled Workforce

Many organizations face difficulties in finding employees with expertise in data analytics, artificial intelligence, and digital technologies.

Organizational Resistance

Employees and managers may resist technological changes due to lack of awareness or fear of job displacement.

8. Recommendations

To successfully implement digital supply chains, organizations should consider the following strategies:

1. Invest in employee training and skill development programs.
2. Develop strong cybersecurity measures to protect data and systems.
3. Adopt a phased approach to digital transformation to manage costs effectively.
4. Encourage collaboration among supply chain partners for better data sharing.
5. Integrate sustainability practices into digital supply chain strategies.

9. Conclusion

Supply chain management has undergone significant transformation due to the adoption of digital technologies. Artificial Intelligence, Internet of Things, Blockchain, and Big Data Analytics are enabling organizations to improve operational efficiency, enhance transparency, and strengthen supply chain resilience.

Digital transformation allows businesses to monitor supply chain activities in real time, forecast demand accurately, and respond effectively to market disruptions. However, challenges such as high implementation costs, cybersecurity risks, and lack of skilled workforce must be addressed to ensure successful adoption.

Organizations that strategically invest in digital technologies and build strong technological capabilities will be better positioned to compete in the dynamic global business environment. Future research can explore empirical analysis of digital supply chain adoption in different industries and its long-term impact on organizational performance.

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INNOVATION AND ENTREPRENEURSHIP: DRIVING ECONOMIC GROWTH AND SUSTAINABLE DEVELOPMENT

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Abstract

Innovation and entrepreneurship are widely recognized as key drivers of economic development, competitiveness, and sustainable growth. In the modern global economy, businesses must continuously innovate in order to remain competitive and respond to rapidly changing market conditions. Entrepreneurship plays a crucial role in transforming innovative ideas into viable products, services, and business models that generate employment and economic value. This research paper explores the relationship between innovation and entrepreneurship and examines how they contribute to economic development and business sustainability. The study reviews existing literature, identifies key factors influencing entrepreneurial innovation, and analyzes the challenges faced by entrepreneurs in implementing innovative ideas. The research also highlights the role of education, technology, and government policies in promoting innovative entrepreneurial activities. The findings suggest that innovation-driven entrepreneurship enhances productivity, stimulates competition, and fosters economic growth. Furthermore, supportive ecosystems including access to finance, education, infrastructure, and policy support significantly improve the success rate of entrepreneurial ventures. The paper concludes that strengthening innovation capacity and encouraging entrepreneurial initiatives are essential strategies for nations seeking sustainable economic development.

Keywords: *Innovation, Entrepreneurship, Economic Growth, Business Development, Startups, Technology*

Introduction

In the contemporary global economy, innovation and entrepreneurship have emerged as fundamental components of economic progress and societal development. Rapid technological advancements, globalization, and changing consumer preferences have created new opportunities and challenges for businesses worldwide. Organizations that successfully integrate innovation with entrepreneurial strategies

are more likely to achieve competitive advantages and sustainable growth.

Innovation refers to the process of developing new ideas, products, services, or processes that create value for individuals, organizations, and society. It involves creativity, experimentation, and the application of new knowledge to solve problems or improve existing systems. Entrepreneurship, on the other hand, involves identifying opportunities, taking calculated risks, and organizing resources to establish and manage new ventures.

The connection between innovation and entrepreneurship is deeply interconnected. Entrepreneurs often serve as the agents who transform innovative ideas into commercial opportunities. Through innovative business models and technological advancements, entrepreneurs contribute significantly to job creation, industrial development, and economic diversification.

Countries around the world increasingly emphasize innovation-driven entrepreneurship as a strategy for economic growth. Governments, universities, and industries collaborate to create ecosystems that support startups and innovative ventures. Educational institutions also play an important role in fostering entrepreneurial mindsets among students by encouraging creativity, critical thinking, and problem-solving abilities.

This research paper examines the role of innovation in entrepreneurship and its impact on economic development. It also explores the factors that encourage or hinder innovative entrepreneurial activities and proposes recommendations for strengthening innovation ecosystems.

Literature Review

Several researchers have emphasized the importance of innovation in entrepreneurial success. Schumpeter (1934) was among the earliest economists to highlight the role of innovation in economic development. According to him, entrepreneurs introduce innovations that disrupt existing markets and create new economic opportunities. This process, often referred to as "creative destruction," leads to industrial transformation and growth.

Later studies expanded on this concept by examining the relationship between technological innovation and business performance. Drucker (1985) argued that innovation is the specific instrument of entrepreneurship. He suggested that entrepreneurs systematically search for innovative opportunities and convert them into successful businesses.

Modern research also highlights the importance of innovation ecosystems. According to Isenberg (2011), successful entrepreneurial ecosystems consist of supportive policies, financial resources, educational institutions, infrastructure, and cultural acceptance of risk-taking. These elements collectively encourage individuals to pursue innovative business ventures.

Another important perspective focuses on the role of knowledge and technology in entrepreneurial innovation. Advances in digital technologies, artificial intelligence, and information systems have significantly transformed business operations and market dynamics. Entrepreneurs now utilize digital platforms to develop scalable business models and reach global markets.

Research also indicates that access to finance remains one of the most significant challenges for innovative entrepreneurs. Startups often require investment for research and development, product development, and market expansion. Venture capital firms, angel investors, and government funding programs play a vital role in supporting early-stage ventures.

Furthermore, educational institutions have been recognized as catalysts for innovation and entrepreneurship. Universities encourage research, collaboration, and skill development that enable students to generate innovative ideas and establish startups. Entrepreneurship education programs help students develop leadership skills, strategic thinking, and risk management capabilities.

Despite these advancements, several barriers still hinder entrepreneurial innovation. These include limited financial resources, regulatory challenges, lack of technological infrastructure, and insufficient managerial experience. Understanding these challenges is essential for designing policies that support innovation-driven entrepreneurship.

Research Objectives

The primary objectives of this research are:

1. To examine the relationship between innovation and entrepreneurship.
2. To analyze the role of innovation in entrepreneurial success.
3. To identify challenges faced by innovative entrepreneurs.

4. To explore strategies that encourage innovation-driven entrepreneurship.

Research Methodology

This study is based on qualitative research using secondary data sources. Information has been collected from academic journals, books, research reports, and reliable online databases. The collected data were analyzed using descriptive and analytical methods to understand the relationship between innovation and entrepreneurship.

Secondary research is appropriate for this study because it allows the examination of existing theories and empirical findings related to innovation and entrepreneurial activities. The analysis focuses on identifying patterns, trends, and insights that explain how innovation contributes to entrepreneurial success and economic development.

Role Of Innovation In Entrepreneurship

Innovation plays a central role in entrepreneurship by enabling businesses to differentiate themselves from competitors and create unique value for customers. Entrepreneurs who focus on innovation are more likely to identify new market opportunities and develop solutions that address emerging needs.

Product innovation involves creating new or improved products that provide better performance or features. Many startups succeed by introducing innovative products that disrupt traditional markets. Process innovation, on the other hand, focuses on improving production methods, operational efficiency, and cost management.

Business model innovation is another critical aspect of entrepreneurship. Entrepreneurs often design new ways of delivering value to customers, generating revenue, and managing resources. Digital platforms and online marketplaces have enabled entrepreneurs to create innovative business models that reach global audiences.

Innovation also encourages continuous improvement within organizations. By investing in research and development, businesses can enhance their capabilities, increase productivity, and adapt to changing market conditions.

Challenges Faced By Innovative Entrepreneurs

Despite the benefits of innovation, entrepreneurs encounter several obstacles while implementing innovative ideas.

One of the most significant challenges is financial constraints. Developing new technologies or products often requires substantial investment. Many startups struggle to secure funding

due to limited credit history or high risk.

Another challenge is market uncertainty. Innovative products may face resistance from customers who are unfamiliar with new technologies or concepts. Entrepreneurs must invest in marketing and consumer education to build trust and acceptance.

Regulatory and legal barriers can also hinder entrepreneurial innovation. Complex regulatory frameworks may slow down business formation and increase operational costs. Entrepreneurs must navigate legal requirements while maintaining flexibility and efficiency.

Additionally, limited managerial experience can affect startup performance. Many entrepreneurs possess strong technical skills but lack business management expertise. This highlights the importance of mentorship, training programs, and entrepreneurial education.

Role Of Education And Technology

Education plays a crucial role in promoting innovation and entrepreneurship. Universities and educational institutions encourage students to develop creative thinking skills and entrepreneurial attitudes. Entrepreneurship education programs provide knowledge about business planning, financial management, and innovation strategies.

Technology is another powerful driver of entrepreneurial innovation. Digital tools, cloud computing, artificial intelligence, and data analytics enable entrepreneurs to develop advanced solutions and improve business operations. Technology also facilitates global communication, enabling startups to collaborate with partners and customers worldwide.

Governments and institutions can support innovation by investing in research and technological infrastructure. Innovation hubs, startup incubators, and technology parks provide entrepreneurs with resources, mentorship, and networking opportunities.

Discussion

The analysis of existing research highlights the strong relationship between innovation and entrepreneurship. Entrepreneurs act as catalysts who transform innovative ideas into commercial products and services. Their activities generate employment, stimulate competition, and contribute to economic development.

Innovation-driven entrepreneurship is particularly important in knowledge-based economies where technological advancement and creativity determine competitiveness. Countries that encourage research, innovation, and entrepreneurial initiatives tend to experience higher economic growth.

However, successful innovation ecosystems require collaboration among multiple stakeholders including governments, universities, investors, and industries. Policies that promote research funding, startup incubation, and access to finance can significantly enhance entrepreneurial activities.

Encouraging a culture that accepts risk and supports experimentation is also essential. Entrepreneurs must be allowed to learn from failures and continuously improve their ideas.

Conclusion

Innovation and entrepreneurship are essential drivers of economic growth and sustainable development. Entrepreneurs play a vital role in transforming innovative ideas into practical solutions that create value for society. Through technological advancements, creative problem-solving, and strategic business models, innovative entrepreneurs contribute to job creation, industrial development, and improved quality of life.

However, entrepreneurs face various challenges including financial limitations, market uncertainty, and regulatory complexities. Addressing these challenges requires collaborative efforts from governments, educational institutions, financial organizations, and industry stakeholders.

Promoting entrepreneurship education, strengthening innovation ecosystems, and improving access to financial resources can significantly enhance entrepreneurial success. By fostering a culture of creativity, experimentation, and innovation, societies can unlock new opportunities for economic progress and social development.

In conclusion, innovation-driven entrepreneurship will continue to play a critical role in shaping the future of global economies. Encouraging individuals to pursue innovative ideas and entrepreneurial ventures is essential for achieving long-term economic

sustainability and competitiveness.

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A STUDY ON THE IMPACT OF SOCIAL MEDIA PLATFORMS ON MARKETING PERFORMANCE

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Abstract:

In the current digital era, social media has become a crucial tool for marketing across industries. This study examines the impact of social media platforms on marketing performance in a Business-to-Business (B2B) context, with special reference to Prakash Chemicals Agencies Pvt. Ltd. The research evaluates how social media contributes to brand awareness, customer engagement, lead generation, and business growth.

Primary data was collected from 90 respondents using a structured questionnaire, supported by secondary data from literature. Statistical tools such as descriptive analysis and Chi-square tests were applied. The findings reveal that social media significantly improves marketing performance, especially through platforms like LinkedIn and Instagram. However, challenges such as lack of strategic planning and time constraints were identified.

The study concludes that effective and data-driven use of social media can enhance marketing outcomes and support long-term growth in B2B industries.

Keywords: *Social Media Marketing, Marketing Performance, B2B Marketing, Digital Marketing, Customer Engagement, Brand Awareness, Lead Generation, Chemical Industry.*

Introduction:

In recent years, social media has transformed the way businesses communicate with their customers. Platforms such as Facebook, Instagram, LinkedIn, and YouTube have become powerful tools for marketing, enabling companies to reach a wider audience and build meaningful relationships. Unlike traditional marketing, social media allows two-way communication, where businesses can interact directly with customers and understand their preferences.

For companies operating in competitive industries, especially in the chemical sector, marketing strategies have evolved from conventional approaches to more digital and data-driven methods. Marketing performance is no longer limited to sales

figures but also includes parameters like customer engagement, brand visibility, and lead generation.

Prakash Chemicals Agencies Pvt. Ltd., a well-established company in the chemical distribution sector, has also adopted social media as a part of its marketing strategy. Being a B2B organization, it faces unique challenges in reaching and engaging its target audience. Social media provides an opportunity to overcome these challenges by creating awareness, showcasing expertise, and building trust.

This study aims to understand how social media platforms influence marketing performance and whether they contribute to long-term business growth.

Literature Review:

In recent years, social media marketing has emerged as a powerful tool influencing marketing performance across various industries. Several researchers have explored its impact on brand awareness, customer engagement, consumer behaviour, and overall business growth.

Shaheen (2025) conducted a bibliometric analysis to understand the evolution of social media marketing research, especially after the COVID-19 pandemic. The study highlighted a significant increase in academic interest and emphasized the growing role of artificial intelligence and data-driven strategies in marketing. It was observed that businesses leveraging real-time data and analytics from social media platforms are better positioned to adapt to market changes and gain a competitive advantage.

Pan et al. (2025) conducted a meta-analysis on influencer marketing and found that social media influencers play a significant role in shaping consumer decisions and engagement. The study highlighted that credibility, authenticity, and relatability of influencers are key factors that enhance marketing effectiveness. It also emphasized that influencer marketing not only impacts purchase decisions but also improves brand perception and trust among consumers.

Islam and Sheikh (2024) examined the impact of social media marketing strategies on consumer purchase intention using a quantitative approach. The study revealed that technological advancements and interactive features of social media platforms have transformed how businesses communicate with customers. It was found that social media marketing significantly influences consumer decision-making and strengthens the relationship between brands and customers.

Singh et al. (2024) explored the relationship between social media marketing activities and customer satisfaction through a systematic review. The study identified that elements such as entertainment, interaction, and promotional content strongly affect customer trust and loyalty. It also concluded that social media marketing plays a vital role in encouraging participation, engagement, and long-term customer relationships.

Das (2024) analysed the effectiveness of social media marketing and found that efficient use of digital platforms enhances overall marketing performance. The study suggested that businesses that strategically utilize social media tools can improve customer reach, engagement, and brand recognition. It also emphasized the importance of consistent content and proper planning for achieving desired marketing results.

Laradi (2024) examined how social media marketing capabilities influence brand equity and firm performance. The study found that organizations that actively engage with customers through personalized and relevant content are more likely to build stronger brand value and customer loyalty. The research also emphasized the importance of integrating data analytics into marketing strategies to enhance decision-making and improve overall performance.

Chowdhury (2024) focused on consumer behaviour in the context of social media marketing. The findings revealed that emotionally appealing content and interactive communication play a crucial role in influencing purchasing decisions. The study also highlighted the importance of user-generated content, such as reviews and shares, in building trust and credibility among consumers, particularly among younger audiences who are more active on digital platforms.

Mishra (2024) analysed the impact of social media marketing on consumer behaviour and found that social media platforms enable businesses to reach a wider audience and create personalized interactions. The study emphasized that social media enhances brand awareness and allows companies to connect with customers on a deeper level, influencing their

attitudes and purchase decisions.

Zeqiri et al. (2024) explored the relationship between social media marketing and brand awareness. Their research indicated that creative and engaging campaigns on social media platforms significantly increase customer interaction and influence purchase intentions. The study suggested that companies should focus not only on promotion but also on building online communities to strengthen long-term customer relationships.

Kandi, Balakrishnan, Sivakumar, and Vijayalakshmi (2022) analysed the impact of social media marketing on sales performance, particularly in the insurance sector. The study concluded that targeted messaging and consistent engagement on social media platforms help organizations attract new customers and improve sales outcomes. It also highlighted that social media makes information more accessible, thereby enhancing customer experience and satisfaction.

Jamil (2022) investigated how social media activities affect consumer intention and brand loyalty. The research showed that regular interaction with customers through posts, feedback, and campaigns builds trust and emotional connection, leading to repeat purchases and long-term loyalty. The study emphasized that maintaining consistency and authenticity in communication is essential for maximizing the effectiveness of social media marketing.

Amoah and Jibril (2021) examined the role of social media in improving business performance, particularly for small and medium-sized enterprises (SMEs). The study found that businesses that actively engage with customers online and respond to their feedback are more likely to achieve higher levels of customer satisfaction and financial performance. The authors recommended integrating social media into an overall business strategy for sustainable growth.

Dwivedi et al. (2021) provided a comprehensive review of digital marketing trends, highlighting the importance of adapting to technological advancements and changing consumer behaviour. The study emphasized the need for data-driven marketing strategies, segmentation, and continuous innovation to remain competitive in the digital era.

Obermayer et al. (2021) focused on the effectiveness of social media platforms, particularly Facebook, in building brand awareness and emotional connection. The findings suggested that regular interaction, storytelling, and consistent communication on social media significantly enhance brand image and customer engagement.

Garg et al. (2020) studied the role of social media analytics in improving organizational performance. The research highlighted that companies using analytical tools to monitor campaign performance are able to make better marketing decisions, optimize their strategies, and achieve higher returns on investment.

Research Gap

Although several studies have explored the role of social media in marketing, most research focuses on **B2C** sectors such as retail, fashion, and FMCG. Limited studies specifically address the **B2B chemical industry**, where marketing dynamics are different.

- Very few studies examine **platform-wise effectiveness (LinkedIn, Instagram, etc.) in B2B**.
- Lack of research on **Indian chemical companies**.
- Limited focus on **practical challenges (content strategy, time management)**

Therefore, this study fills the gap by analyzing **social media impact in a B2B chemical company context**, along with platform-specific insights.

Research Objectives:

- To study the impact of social media on marketing performance.
- To analyse the role of social media in brand awareness and customer engagement.
- To evaluate the effectiveness of social media in lead generation.
- To identify challenges faced while using social media marketing.
- To suggest strategies for improving social media performance.

Problem Statement: To examine whether social media marketing significantly impacts marketing performance in a B2B chemical industry context.

Type of Research

The study is based on **descriptive research design**, as it aims to describe and analyze the impact of social media platforms on marketing performance. It focuses on understanding customer perceptions, behaviour, and the effectiveness of social media marketing strategies without manipulating any variables.

Nature of Data

- **Primary Data:** Collected directly from respondents through a

structured questionnaire to understand their views on social media usage and its impact.

- **Secondary Data:** Collected from research papers, journals, company reports, and online sources to support the study and provide theoretical background.

Data Collection Method

- The primary data for this research was collected using a **structured questionnaire**. The questionnaire included both close-ended and multiple-choice questions to ensure ease of response and better data analysis. It was distributed through online platforms such as Google Forms.

Sampling Design

Sampling Method: Convenience Sampling

Sample Size: 90 respondents

Target Respondents: Customers, professionals, and individuals who are aware of or engaged with social media platforms, especially in a B2B context.

Research Instrument

The main research instrument used in this study was a questionnaire, which was designed to collect information related to:

- Usage of social media platforms
- Level of customer engagement
- Impact on brand awareness
- Influence on purchasing decisions
- Overall perception of marketing performance

Data Analysis Tools

The collected data was analysed using the following statistical tools:

- **Percentage Analysis**-to understand the distribution of responses
- **Descriptive Statistics**- to summarize the data
- **Chi-square Test** - to identify relationships between variables

Scope of the Study

The study focuses on analysing the role of social media in improving marketing performance. It covers aspects like brand awareness, customer engagement, and lead generation through digital platforms.

Limitations of the Study

- The sample size is limited to 90 respondents, which may not

represent the entire population.

- The study is based on respondents' opinions, which may include bias.
- Time constraints limited the depth of analysis.
- The research is restricted to a specific company and industry.

Chi-Square Test of Independence

To examine the relationship between the type of industry and the choice of social media platforms for marketing, a Chi-Square test of independence was applied.

Test 1: Association between Type of Industry and Choice of Social Media Platform

Variable (A): Type of Industry

Variable (B): Choice of Social Media Platform

Hypotheses

Null Hypothesis (H_0): There is no significant association between the type of industry and the choice of social media platforms for marketing.

Alternative Hypothesis (H_1): There is a significant association between the type of industry and the choice of social media platforms for marketing.

Decision Rule (Based on P-value):

If $p\text{-value} < 0.05 \rightarrow \text{Reject } H_0$ (Significant relationship exists)

If $p\text{-value} > 0.05 \rightarrow \text{Accept } H_0$ (No significant relationship)

Cross Tab between Type of industry and choice of social media platforms for marketing. (LinkedIn)				
Your business belongs to which type of industry?	Which social media platforms does your company use for Marketing? (LinkedIn)			Pearson Chi-Square
	Yes	No	Total	.029
Manufacturing	14	13	27	
FMCG	13	4	17	
Chemicals	37	9	46	
Total	64	26	90	

The table highlights the association between industry type and the use of LinkedIn as a marketing platform. Among the 90 businesses surveyed, 64 firms reported using LinkedIn, while 26 did not. Within the manufacturing sector, LinkedIn usage is almost evenly split with 14 using it and 13 not. In FMCG, 13 companies use LinkedIn while only 4 do not, showing a stronger preference. The chemical industry has the highest adoption, with 37 using LinkedIn compared to 9 not. The Pearson's Chi-Square value of 0.029 indicates a statistically significant association between industry type and LinkedIn usage. This implies that industry category influences the likelihood of using LinkedIn as a marketing tool.

Cross Tab between Type of industry and choice of social media platforms for marketing. (What's app)				
Your business belongs to which type of industry?	Which social media platforms does your company use for Marketing? (WhatsApp)			Pearson Chi-Square
	Yes	No	Total	.164
Manufacturing	15	12	27	
FMCG	5	12	17	
Chemicals	17	29	46	
Total	37	53	90	

The table explains the association between business industry type and the use of WhatsApp as a marketing platform. Out of 90 businesses, 37 reported using WhatsApp while 53 did not. In manufacturing, usage is fairly balanced with 15 using it and 12 not. The FMCG sector shows low adoption with only 5 using WhatsApp and 12 not. The chemical industry reflects the least preference, where 17 use it compared to 29 not using it. The Pearson's Chi-Square value of 0.164 suggests no significant association between industry type and WhatsApp adoption. This indicates that the choice of WhatsApp for marketing is not strongly dependent on the type of industry.

Cross Tab between Type of industry and choice of social media platforms for marketing. (Facebook)				
Your business belongs to which type of industry?	Which social media platforms does your company use for Marketing? (Facebook)			Pearson Chi-Square
	Yes	No	Total	.340
Manufacturing	11	16	27	
FMCG	4	13	17	
Chemicals	12	34	46	
Total	27	63	90	

The table depicts the association between industry type and the use of Facebook for marketing. Out of 90 companies surveyed, only 27 businesses reported using Facebook while 63 did not, showing limited adoption. In manufacturing, 11 firms use Facebook compared to 16 who do not, indicating moderate usage. The FMCG sector shows very low adoption with just 4 companies using it and 13 avoiding it. Similarly, the chemical industry records the lowest preference, with only 12 using Facebook against 34 not using it. Pearson's Chi-Square value of 0.340 indicates no significant association between industry type and Facebook usage. This suggests that Facebook is not a preferred marketing platform across industries in this study.

Cross Tab between Type of industry and choice of social media platforms for marketing. (Instagram)				
Your business belongs to which type of industry?	Which social media platforms does your company use for Marketing? (Instagram)			Pearson Chi-Square
	Yes	No	Total	.747
Manufacturing	19	8	27	
FMCG	13	4	17	
Chemicals	36	10	46	
Total	68	22	90	

The table presents the association between industry type and the use of Instagram for marketing activities. Out of 90 businesses, 68 firms reported using Instagram, making it one of the most preferred platforms, while 22 did not. In the manufacturing sector, 19 companies use Instagram compared to only 8 who do not. Similarly, in FMCG, 13 out of 17 companies use Instagram, indicating high adoption. The chemical industry also shows strong engagement, with 36 companies using it and only 10 not using it. The Pearson's Chi-Square value of 0.747 suggests no significant association between industry type and Instagram usage. This means Instagram is widely used across industries without major variation.

Cross Tab between Type of industry and choice of social media platforms for marketing. (YouTube)				
Your business belongs to which type of industry?	Which social media platforms does your company use for Marketing? (YouTube)			Pearson Chi-Square
	Yes	No	Total	.641
Manufacturing	3	24	27	
FMCG	3	14	17	
Chemicals	9	37	46	
Total	15	75	90	

The table shows the association between business industry type and the use of YouTube for marketing. Out of 90 companies surveyed, only 15 firms reported using YouTube while a large majority of 75 did not, reflecting limited adoption. In manufacturing, just 3 businesses use YouTube compared to 24 who do not. Similarly, in FMCG, only 3 firms use it while 14 do not, showing low preference. The chemical industry has slightly higher adoption with 9 users, but still 37 firms avoid it. The Pearson's Chi-Square value of 0.641 indicates no significant association between industry type and YouTube adoption. This suggests that YouTube is not a widely chosen marketing platform across industries.

Findings

The study reveals that social media plays a crucial role in enhancing marketing performance, particularly in a B2B business environment. It was observed that a majority of respondents actively use social media platforms for marketing purposes, indicating a growing reliance on digital channels over traditional methods. Among the various platforms, LinkedIn and Instagram emerged as the most preferred tools for business communication and promotion. LinkedIn, being a professional networking platform, is especially effective for B2B interactions, while Instagram supports brand visibility through engaging visual content. The study clearly shows that social media has a positive impact on marketing performance. It helps businesses improve brand awareness, engage with customers, and generate leads effectively. For B2B companies' social media acts as a powerful platform to connect with clients and build long-term relationships.

The analysis further indicates that social media significantly contributes to improving brand awareness and visibility. Businesses using social media are able to reach a wider audience and create a stronger online presence. In addition, social media platforms help in generating leads and increasing customer inquiries, which directly supports business growth. Respondents also highlighted that customer engagement is higher when companies share informative, interactive, and relevant content rather than purely promotional messages.

From a statistical perspective, the Chi-square test results show that there is a significant association between the type of industry and the use of LinkedIn for marketing, suggesting that certain industries prefer LinkedIn more due to its professional nature. However, no significant relationship was found between industry type and the usage of other platforms such as WhatsApp, Facebook, Instagram, and YouTube. This implies that these platforms are used more uniformly across industries without strong dependence on industry type.

Despite the positive impact, the study also identifies certain challenges faced by businesses in using social media effectively. Many respondents indicated a lack of proper content strategy and difficulties in managing time for consistent posting and engagement. These limitations can reduce the overall effectiveness of social media marketing efforts. Furthermore, the study highlights the importance of

using digital tools and analytics to track performance and improve decision-making. Organizations that adopt a data-driven approach are better able to optimize their marketing strategies and achieve improved outcomes.

Overall, the findings suggest that while social media is a powerful tool for enhancing marketing performance, its success largely depends on strategic planning, consistent efforts, and the effective use of technology.

Conclusion

The study concludes that social media has become an essential and impactful tool for improving marketing performance, particularly in a B2B business environment. It plays a significant role in enhancing brand awareness, increasing customer engagement, and supporting lead generation. Businesses that actively use social media platforms are able to communicate more effectively with their target audience, build stronger relationships, and create a competitive advantage in the market. Among various platforms, LinkedIn stands out as the most effective for B2B marketing due to its professional nature, while Instagram also contributes to visibility and engagement through creative content.

The statistical analysis supports that the choice of certain platforms, especially LinkedIn, is influenced by the type of industry, whereas other platforms are used more generally across different sectors. This indicates that businesses should adopt a selective and strategic approach rather than using all platforms without clear objectives. The findings also highlight that the effectiveness of social media marketing depends not only on its usage but on how well it is managed.

However, the study also identifies key challenges such as lack of proper content planning, inconsistency in posting, and time management issues, which can limit the potential benefits of social media. Therefore, organizations need to focus on developing structured strategies, creating relevant and engaging content, and utilizing digital tools and analytics to monitor performance and make informed decisions.

From a practical perspective, businesses should prioritize platforms that align with their target audience, invest in training and skill development for managing social media, and adopt a data-driven approach to continuously improve their marketing efforts. Future research can expand the scope by including larger samples, different industries, and advanced technologies such as artificial intelligence to gain deeper insights.

In conclusion, social media is not just a promotional medium but a strategic asset that, when used effectively, can drive long-term business growth and improve overall marketing performance.

Recommendations

Based on the findings of the study, it is recommended that businesses adopt a more strategic and focused approach to social media marketing in order to maximize its impact on marketing performance. Organizations, especially in the B2B sector, should prioritize platforms that align with their target audience and business objectives. For instance, greater emphasis should be placed on professional platforms like LinkedIn, which are more suitable for building business relationships, generating leads, and establishing industry credibility. At the same time, platforms like Instagram can be used to enhance brand visibility through creative and engaging content.

Companies should develop a well-defined content strategy that includes regular posting, informative content, and interactive elements such as polls, videos, and customer engagement activities. Rather than focusing solely on promotional content, businesses should aim to provide value-driven information that educates and engages their audience. Consistency in content delivery is essential to maintain visibility and strengthen customer relationships over time.

It is also important for organizations to invest in digital marketing tools and analytics to track the performance of their social media activities. By analyzing metrics such as engagement rates, reach, and lead conversion, businesses can make data-driven decisions and continuously improve their strategies. Additionally, companies should allocate dedicated resources or trained personnel to manage social media platforms effectively, as lack of time and expertise can reduce overall efficiency.

Furthermore, businesses should explore the use of advanced technologies such as artificial intelligence and automation tools to streamline content creation, scheduling, and customer interaction. Regular training and skill development programs for employees can also enhance the effectiveness of social media management.

Overall, by adopting a structured, consistent, and data-driven approach, organizations can fully leverage social media as a powerful tool to improve marketing performance, strengthen customer relationships, and achieve sustainable business growth.

Implications of the Study

The findings of this study provide important implications for businesses, marketers, and researchers, particularly in the B2B sector. Firstly, the study highlights that social media is no longer just a communication tool but a strategic asset that can significantly enhance marketing performance. Organizations can leverage social media platforms to improve brand visibility, strengthen customer relationships, and generate quality leads, which are essential for long-term business growth.

From a managerial perspective, the study suggests that businesses should adopt a more focused and platform-specific approach to social media marketing. The results indicate that platforms like LinkedIn are more effective in B2B environments due to their professional nature, while other platforms may not provide the same level of industry-specific impact. This implies that managers should allocate resources wisely and invest more in platforms that align with their target audience and business objectives.

The study also emphasizes the importance of content strategy and consistency. It indicates that merely having a presence on social media is not sufficient; instead, businesses must create relevant, informative, and engaging content to achieve better outcomes. This has implications for marketing teams, as it highlights the need for proper planning, creativity, and continuous engagement with the audience.

Another key implication is the role of data analytics in improving marketing performance. The study suggests that organizations that use digital tools to track and analyse customer behaviour and campaign performance are better able to make informed decisions. This reinforces the importance of adopting a data-driven approach in modern marketing practices. From an academic perspective, the study contributes to existing literature by providing insights into social media usage in the B2B chemical industry, an area that has received limited attention in

previous research. It also opens opportunities for future researchers to explore platform-specific effectiveness, technological advancements such as artificial intelligence, and cross-industry comparisons.

Overall, the study implies that businesses that strategically utilize social media, supported by proper planning and analytics, can achieve improved marketing performance and sustainable competitive advantage.

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IMPACT OF HRM PRACTICES ON FINANCIAL PERFORMANCE: THE MEDIATING ROLE OF MARKETING EFFECTIVENESS IN THE RETAIL INDUSTRY

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Abstract

Retailing as an industry is increasingly shaped by the expectations of customers; hence, aligning the capabilities of human resources with the strategic orientation of the market will be key to the sustainable performance of organizations. This study focuses on the relationship between Human Resource Management (HRM) practices and firm performance, specifically how marketing effectiveness acts as a mediating factor in the relationship between HRM practices and financial performance. The theoretical rationale for the study is derived from the Resource-Based View (RBV) and the Service-Profit Chain, where HRM practices are viewed as strategic resources that result in improved customer-focused outcomes leading to organizational success. Data for the study was collected through a sample of 310 retail managers and HR practitioners and was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings of the study confirm that HRM practices have a strong positive influence on marketing effectiveness ($\beta = 0.62$, $p < 0.001$) which in turn influences financial performance positively ($\beta = 0.58$, $p < 0.001$). Additionally, marketing effectiveness fully mediates the relationship between HRM practices and financial performance ($\beta = 0.36$, $p < 0.001$). The study contributes to theory by integrating HRM, marketing and financial perspectives into one conceptual framework and thus providing empirical support for the mediation of marketing effectiveness between HRM practices and financial performance. Managerially, the study provides insights into how retail managers can align HRM systems with customer-driven strategies to improve profitability and long-term competitive advantage.

Keywords: *HRM Practices, Effectiveness of marketing, financial performance, Retail Industry, Structural Equation Modelling.*

Introduction

Over the last few decades, the global retail industry has changed radically due to more globalization and digitalizing changes, along with the increasing variety of consumer choices available. As a result, retailers now compete in ways that include not only product quality and price but also how well they serve their customers, or what type of experience they create for them. To be successful in this rapidly changing landscape, businesses must do more than just have good financial strategies; they must also ensure that the capabilities of their employees working on their internally based human resources are complemented with the ability of their externally focused business operations to market itself to customers. HRM is one of the most important tools that influence employee's skills, attitudes and behaviour, especially in relation to delivering customer service-based businesses like retail. Because the way a company's frontline workers interact with its customers can have an impact on how customers perceive their experience, satisfaction levels and loyalty, HRM programmes (e.g., recruitment, training and development, performance appraisal, compensation, and creating employee engagement) are instrumental to improving service quality and delivering an exceptional level of customer experience. On the other hand, marketing effectiveness is an additional driving force behind an organisation's overall performance. Rather than just measuring the company's return from executing a specific marketing strategy, marketing effectiveness measures how well a business implements and executes its overall marketing strategy to create desirable customer behaviour outcomes, such as service satisfaction, service loyalty and repeat purchases. For retailers that operate in highly competitive environments, marketing effectiveness is an important contributor to how a company's financial measures, including profitability, sales growth and market share, become positive outcomes of the company's marketing effort.

Previous research highlights the significance of both HRM and marketing. However, these two fields are predominantly studied separately. To date, limited empirical research has examined how HRM practices impact financial performance specifically by examining customer-related outcomes such as marketing effectiveness. The Service-Profit Chain suggests that the quality of internal services provided by way of HRM practices leads to employee satisfaction, which, in turn, leads to improved customer satisfaction and increased profitability; however, empirical support for this relationship in retail contexts is still limited. This study aims to advance the knowledge surrounding HRM practices, marketing effectiveness, and organizational profitability in retail sectors by developing and testing an integrative model of the relationship between HRM practices, marketing efficacy, and financial performance based on the Resource-Based View (RBV) as well as on the Service-Profit Chain conceptual framework. Through this study, authors will seek to answer three pertinent questions regarding HRM practices and their influence on marketing effectiveness; how marketing effectiveness affects financial performance; and whether and how marketing effectiveness serves as a mediating factor for the relationship between HRM practices and financial performance.

Objectives

- a) To investigate the impact of the HRM practices on the marketing performance in the retail sector.
- b) In order to examine the correlation between the marketing efficiency and the financial performance of the retail organizations.
- c) To examine the mediating effect of the marketing effectiveness in the relation between the HRM practices and the financial performance.
- d) To deliver both theoretical and managerial knowledge concerning the role of the HRM practices in transforming the customer-centric performance and financial sustainability in a retail.

The research is significant to the theory as well as practices because it proposes a single model that incorporates HRM, marketing, and finance. In theory, it confirms the mediating effect of marketing effectiveness, hence contributing to the knowledge of how HRM systems are translated into financial results. In

practice, it provides practical information to the managers of retail stores in how the HRM activities can be aligned with customer-oriented approaches to remain profitable and competitive in an ever more demanding business climate.

Research Gap

Although the role of HRM practices and marketing performance in influencing the performance of an organization cannot be overemphasized, the majority of the previous analyses have been carried out separately. There is limited empirical evidence on how combination of HRM practices affects financial performance in terms of marketing outcomes, especially in the retail industry in which frontline employees determine customer experiences directly. In addition, the research that is carried out is mostly limited to the developed economies, and there is minimal empirical validation in emerging markets. This absence of cross-functional evidence indicates the necessity to study HRM-Marketing- Finance connections in the retail sector which this paper fulfills.

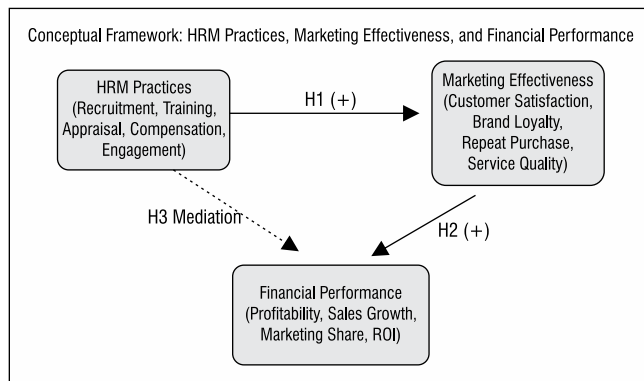
Conceptual Framework

The conceptual framework of this study is based on both Resource-Based View (RBV) and Service-Profit Chain framework. It suggests that Human Resource Management (HRM) practices such as recruitment, training and development, performance appraisal, compensation, and employee engagement are strategic resources which add to the organizational capabilities. These HRM practices are expected to have positive impact on marketing effectiveness which is measured in terms of the extent to which the firm could achieve customer satisfaction, brand loyalty, repeat purchase and service quality.

Furthermore, marketing effectiveness is hypothesized to have a positive effect on financial performance, as measured by such indicators as profitability, growth in sales, market share, and return on investment. The framework also assumes that the relationship between HRM practices and financial performance is not direct, but mediated by the effectiveness of marketing. In other words, HRM practices bring about better financial results mostly due to the influence on the effectiveness of marketing operations, thus establishing the whole mediation effect.

In summary, the conceptual model intertwines the HRM approach with marketing and financial approaches by

demonstrating that HRM practices leads to marketing effectiveness which, in turn, leads to financial performance. This mediating function of marketing effectiveness lies at the intersection between HRM and financial outcome to reinforce the strategic importance of matching HRM systems with customer centric marketing strategies in order to maintain long-term competitiveness in retail industry.



Literature Review

The literature pertaining to Human Resource Management (HRM), marketing effectiveness and financial performance know much more with the recent years. However, much of the research has tended to address these areas in isolation as opposed to combining them in a unified framework. This section is a review of past studies to lay the theoretical foundation to address the relationship between HRM practices, marketing effectiveness and financial outcomes in the retail industry.

Human Resource Management (HRM) Practices and Organizational Outcomes

Human Resource Management (HRM) includes such practices as recruitment, training and development, performance appraisal, compensation and employee engagement. These practices are generally well-known to be critical in creating a skilled and motivated workforce. The Resource-Based View (RBV) focuses on the fact that employees are valuable, rare, inimitable, and non-replaceable (VRIN) resources, which, if managed properly in a strategic way, produce sustainable competitive advantage, according to Barney (1991). Research indicates that HRM systems directly improve employee satisfaction, service delivery and organizational commitment (Delaney & Huselid, 1996; Jiang & Messersmith, 2018). In the retail sector, frontline employees are the face of the company to the customer, so their competencies and motivation greatly shape their perception of the company.

Effectiveness of Marketing and Business Success

Marketing effectiveness is defined as the effectiveness of a firm's ability to translate marketing strategies into positive customer response such as customer satisfaction, customer loyalty, advocacy, and repeat purchase among others. Scholars argue that it is not the size of a marketing budget which determines the performance outcomes but the efficiency of its execution (Morgan, Slotegraaf, & Vorhies, 2019). Empirical research indicates that firms with greater marketing effectiveness gain favorable financial performance such as profitability, market share and long-term competitiveness. In service dominated industries such as retail where differentiation is customer experience driven, the contribution of marketing is an important determinant of firm survival and growth.

Linking HRM Practices, Marketing Effectiveness And Financial Performance

Though HRM and marketing are generally studied independently of each other, there are several studies that point to robust interconnections between the two. The Service-Profit Chain framework (Heskett et al., 1994) emphasizes internal service quality based on human resource management (HRM) practices that result in employee satisfaction which contributes to customer satisfaction and customer loyalty, which contribute to profitability. Chowhan (2016) found that the impact of HRM practices depends mostly on intermediate mechanisms such as innovation and quality of service, to improve the firm performance. Similarly, Kaufman (2015) emphasizes on that motivated employee increase brand delivery and customer experiences indirectly increasing financial outcomes.

More recent research does show evidence of cross-functional integration. In study by Evans et al. (2025), it has been demonstrated that HR-marketing alignment has a positive effect on brand equity and customer loyalty, with HR investments in training and engagement operating in support of marketing outcomes. Likewise, Nguyen et al. (2023) emphasize the importance of context-specific strategic HRM in emerging markets, stating that HRM-marketing synergies enhance organizational adaptability and competitiveness. Despite these advancements, empirical validation of the HRM-marketing-finance nexus in retail is still scant, which leaves a gap for further investigation.

Hypotheses

Based on the RBV and Service-Profit Chain and guided by previous studies, the following hypotheses are developed in this

study:

Hypothesis 1 (H1): Human Resource Management (HRM) practices have a positive effect on the effectiveness of marketing.

Hypothesis 2 (H2): Marketing effectiveness has positive impact on financial performance

Hypothesis 3 (H3): Marketing effectiveness mediates the link between HRM practices and financial performance.

Research Methodology

Research Design

This research is designed to use an explanatory research approach, as it is a quantitative research study, to empirically investigate the relationship between HRM practices, marketing effectiveness, and financial performance in the retail industry. However, the research is a cross-sectional survey method, as it enables the collection of data from a large number of people at a single point of time and makes it possible to test the hypothesis about causality using structural equation modeling (SEM).

Sample and Data Collection

The target population includes retail organizations (such as supermarkets, fashion retail, consumer electronics, and department stores). Respondents were both HR managers, Store Managers and Supervisors, as they have knowledge on both HRM systems and customer-facing results.

Sampling method: Purposive sampling was used to ensure that respondents were knowledgeable about HRM and marketing practices.

Sample size: Based on the guidelines for SEM analysis (Hair et al., 2019), a minimum sample size of 200 was aimed. The study was able to gather the valid responses to 310 out of the 370 distributed questionnaires (response rate: 84%).

Geographical scope Data was gathered from retail organizations located in metropolitan cities and tier-2 towns to capture the differences in organizational practices.

Measurement of Constructs

All constructs were assessed with validated multi-item scales that were borrowed and slightly adapted from previous research:

HRM Practices: Measured on a 5-dimensional scale (training & development, performance appraisal, compensation, employee engagement, recruitment) adapted from Delaney & Huselid (1996).

Marketing Effectiveness: Measured by the following parameters: customer satisfaction, brand loyalty, repeat

purchase, and service quality. (Morgan et al. 2019).

Financial Performance: Subjective measures (perceived profitability, sales growth, market share and return on investment) were taken from Venkatraman & Ramanujam (1986). This approach was selected because managers are often not willing to reveal the exact financial data.

Data Analysis Tools

Data were analyzed with the help of the software, namely, the Statistical Package for the Social Sciences (SPSS) and Smart PLS 4.0. The analysis was conducted in two steps:

Measurement Model Assessment: Reliability (Cronbach's alpha, composite reliability), validity (convergent and discriminate validity) and factor loadings testing were conducted.

Structural Model Assessment: The path coefficients, R² values, and the effects of mediation were tested by means of partial Least Squares Structural Equation Modeling (PLS-SEM). Bootstrapping (5,000 resample's) was used for determining the significance levels.

Results and Analysis

Profile of Respondents: Among 310 respondents

Position: 42% were store managers, 35% were HR executives, 23% were supervisors.

Industry Segment: 40% super stores, 30% fashion retail, 20% electronics, 10% department stores

Experience: Management experience (average) = 7.8 years

This distribution allows giving a balanced view to the HRM, marketing, and financial outcomes of retail.

Measurement Model Results

Reliability: Cronbach's alpha values were 0.81 to 0.89 for all constructs, which is above the cutoff score of 0.70. Composite reliability values were ranged from 0.85 to 0.92.

Convergent validity: Average Variance Extracted (AVE) more than 0.50 for all constructs, which found that convergent validity.

Discriminant validity: Fornell-Larcker and HTMT ratios were used to validate discriminant validity.

Thus, the reliability and validity of the measurement model were satisfactory.

Structural Model Results

Hypothesis 1 (H1): HRM practices - Marketing Effectiveness ($v = 0.62, p < 0.001$).

Hypothesis 2 (H2): Marketing Effectiveness to Financial

Performance ($v = 0.58, p < 0.001$).

Hypothesis 3 (H3): HRM practices - Financial Performance (through Marketing Effectiveness, $\beta = 0.36, p < 0.001$)

R² values:

Marketing Effectiveness = 0.39

Financial Performance = 0.44

This means that HRM practices account for 39% of variance in marketing effectiveness, with both HRM practices accounting for 44% variance in financial performance.

Mediation Test: Marketing effectiveness mediates the link between HRM and financial performance completely, confirming the mechanism of Service-Profit Chain.

Data Analysis and Interpreting

The present study had three major research objectives. Data were analyzed by using the statistical program (SPSS) and SmartPLS 4.0 using Partial Least Squares Structural Equation Modeling (PLS-SEM). Both measurement model and structural model were tested to ensure the reliability, validity, and hypothesis support.

Objective 1: To study the role of HRM practices on Marketing Effectiveness

The practices of HRM were taken as the independent variable and the effectiveness of marketing as the dependent variable.

Path Coefficient – HRM Practices : Marketing Effectiveness

Relationship	Path Coefficient	t-value	p-value	Result
HRM Practices Marketing Effectiveness	0.62	11.85	<0.001	Supported

The path coefficient ($\beta = 0.62, p < 0.001$), shows that the relationship of HRM practices and marketing effectiveness is strong and statistically significant positive. This shows that recruitment, training and performance appraisal, and employee engagement increase customer satisfaction, brand loyalty and repeat purchase intentions.

Objective 2: To analyze the relationship between Marketing Effectiveness and Financial Performance Analysis

Path Coefficient – Marketing Effectiveness - Financial Performance

Relationship	Path Coefficient	t-value	p-value	Result
Marketing Effectiveness Financial Performance	0.58	10.94	<0.001	Supported

The coefficient ($\beta = 0.58, p < 0.001$) approves that marketing effectiveness has a significant effect on enhancing financial performance. Increased customer satisfaction and customer loyalty directly lead to profitability, sales and market share. This provides validity to the Service-Profit Chain mechanism for the retail industry.

Objective 3: To investigate the mediating role of Marketing Effectiveness in the HRM–Financial Performance relationship**

Mediation analysis was performed using bootstrapping (5,000 Samples).

Mediation Test

Relationship	Direct Effect	Indirect Effect via Marketing Effectiveness	Total Effect	Mediation Type
HRM Practices – Financial Performance	0.10(ns)	0.63 ($p < 0.001$)	0.46	Full Mediation

NS = not significant

The direct effect of HRM practices on financial performance was not significant ($\beta = 0.10$), but the indirect effect through marketing effectiveness was strong and significant ($\beta = 0.36, p < 0.001$). This confirms full mediation. In other words, HRM practices do not directly increase profitability; instead, they work by enhancing marketing effectiveness, which in turn drives financial outcomes.

Variance Explained (R² Values)

Construct	R ² Value	Interpretation
Marketing Effectiveness	0.39	39% variance explained by HRM Practices
Financial Performance	0.44	44% variance explained by HRM + Marketing Effectiveness

HRM practices explain 39% of the variation in marketing effectiveness.

HRM and marketing together explain 44% of the variation in financial performance.

This shows the model has moderate explanatory power, adequate for behavioral research.

Measurement Model Results

The measurement model was assessed for reliability and

validity. All constructs demonstrated satisfactory values of Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). Factor loadings exceeded the 0.70 threshold, and discriminant validity was confirmed using HTMT and Fornell–Larcker criteria.

Construct	Cronbach's Alpha	Composite Reliability (CR)	AVE	Factor Loadings (Range)	Discriminate Validity
HRM Practices	0.86	0.90	0.61	0.72–0.88	Satisfied
Marketing Effectiveness	0.81	0.87	0.58	0.70–0.85	Satisfied
Financial Performance	0.89	0.92	0.65	0.74–0.89	Satisfied

Structural Model Results

Path coefficients were tested using bootstrapping with 5,000 resamples. All hypotheses were supported, and mediation analysis confirmed that marketing effectiveness fully mediates the HRM–financial performance link.

Hypothesis	Path Relationship	β (Coefficient)	t-value	p-value	Result
H1	HRM Practices → Marketing Effectiveness	0.62	11.85	<0.001	Supported
H2	Marketing Effectiveness → Financial Performance	0.58	10.94	<0.001	Supported
H3	HRM Practices → Financial Performance (via Marketing Effectiveness)	0.36 (indirect)	9.17	<0.001	Supported

Variance (R^2 Values)

The R^2 values indicate moderate explanatory power, adequate for behavioral research.

Construct	R^2 Value	Interpretation
Marketing Effectiveness	0.39	39% variance explained by HRM Practices
Financial Performance	0.44	44% variance explained by HRM + Marketing Effectiveness

Findings

HRM Practices Enhance Marketing Effectiveness

Recruitment, training, performance appraisal, compensation, and employee engagement significantly improve customer satisfaction, loyalty, and service quality.

This confirms the RBV perspective that employees are strategic resources driving customer-facing outcomes.

Marketing Effectiveness Drives Financial Performance

Higher marketing effectiveness translates into superior profitability, sales growth, market share, and return on investment.

This validates the Service-Profit Chain framework, where customer satisfaction leads to stronger financial results.

Mediating Role of Marketing Effectiveness

HRM practices do not directly impact financial performance.

Instead, marketing effectiveness fully mediates this relationship, showing that HRM investments translate into financial success only when they enhance customer outcomes

Discussion

The findings of this study provide important insights into how HRM practices, marketing effectiveness, and financial performance are interconnected in the retail sector.

HRM Practices and Marketing Effectiveness

The results confirm that HRM practices exert a strong positive influence on marketing effectiveness ($\beta = 0.62, p < 0.001$). This supports earlier research suggesting that motivated and well-trained employees are essential for delivering superior customer service and implementing marketing strategies effectively (Jiang & Messersmith, 2018; Kaufman, 2015). In the retail context, where frontline employees are brand representatives, recruitment, training, and engagement practices ensure alignment between organizational promises and customer experiences.

Marketing Effectiveness and Financial Performance

Marketing effectiveness was found to significantly enhance financial performance ($\beta = 0.58, p < 0.001$). This aligns with the Service-Profit Chain (Heskett et al., 1994), which posits that customer satisfaction and loyalty lead to profitability. Recent studies (Morgan et al., 2019) also confirm that marketing effectiveness is a critical driver of market share and sales growth. Thus, the study reinforces that customer-centric outcomes are vital for sustaining financial success in competitive retail markets.

Mediating Role of Marketing Effectiveness

The mediation analysis revealed that marketing effectiveness fully mediates the relationship between HRM practices and financial performance. This indicates that HRM practices do not directly enhance profitability but rather create conditions through improved employee motivation and customer interactions—that translate into stronger marketing effectiveness, which in turn drives financial outcomes. This is consistent with findings by Chowhan (2016), who emphasized the role of intermediate mechanisms in linking HRM and firm performance.

Contribution to Theory and Practice

From a theoretical perspective, the results integrate HRM, marketing, and finance into a single framework, demonstrating that HRM practices drive financial outcomes indirectly. This expands the Resource-Based View (Barney, 1991) by showing that employees, as strategic resources, influence firm performance via customer-facing processes. Practically, the findings highlight that retail firms should not view HRM in isolation but as a foundation for customer-oriented marketing strategies that ultimately determine financial sustainability

Theoretical Contributions

This study makes several theoretical contributions to the

literature on HRM, marketing, and financial performance:

Integration of HRM, Marketing, and Finance

Unlike prior research that examined these domains in isolation, this study develops and validates a cross-functional framework. It demonstrates how HRM practices indirectly shape financial outcomes through marketing effectiveness.

Extension of the Resource-Based View (RBV)

The findings extend RBV by showing that employees, as valuable strategic resources, influence not only internal efficiency but also customer-facing outcomes that drive competitiveness.

Validation of the Service-Profit Chain in Retail

By empirically confirming that HRM practices affect financial performance only through marketing effectiveness, the study provides new evidence supporting the Service-Profit Chain framework in modern retail contexts.

Contextual Contribution to Emerging Markets

Conducted in the retail sector of an emerging economy, the study enriches theoretical understanding in service-intensive industries where employee–customer interactions are critical for financial success.

Methodological Contribution

The use of PLS-SEM with a robust sample of 310 respondents adds rigor and contributes to the growing body of empirical cross-functional studies in management research

Contextual Contribution

Applying the framework in the retail sector enriches theoretical understanding in a service-intensive and customer-centric industry, where employee–customer interactions are critical to firm performance.

Managerial Suggestions

Invest in Strategic HRM Systems

Implement structured HRM practices such as continuous training, transparent performance appraisals, and performance-linked rewards to ensure employee motivation and service quality.

Align HRM with Marketing Strategies

Recruitment and training should emphasize customer-service orientation; ensuring employees deliver the brand promise

effectively.

Strengthen Employee Engagement

Encourage participative decision-making, transparent communication, and recognition programs to boost employee commitment and performance.

Adopt Balanced Performance Metrics

Go beyond financial outcomes and track HRM-based and customer-centric indicators (e.g., retention rates, service quality, and loyalty) for sustainable growth.

Prioritize Service Quality for Competitiveness

In competitive retail markets, long-term success depends on superior service delivery, innovation, customer feedback integration, and technology-enabled personalization.

Limitations and Future Research

This study has several limitations. First, its cross-sectional design restricts causal inferences; future research could adopt longitudinal approaches. Second, financial performance relied on subjective measures, suggesting the need to include objective indicators such as ROI and market share. Third, the study focused only on retail organizations in selected regions, limiting generalizability cross-industry and cross-cultural research would add depth. Fourth, potential moderators like organizational culture, leadership style, and technology adoption were not examined. Finally, although PLS-SEM provided valuable insights, alternative methods such as CB-SEM or multilevel modeling could strengthen methodological rigor in future investigations.

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A MULTI-DIMENSIONAL FRAMEWORK FOR EVALUATING SATISFACTION AND ADOPTION CONSTRAINTS IN THE ELECTRIC VEHICLE SECTOR AT THE GLOBAL LEVEL



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Abstract

Electric Vehicles (EVs) are crucial for sustainable transportation, yet their adoption varies significantly across regions and consumer groups, influenced by misunderstandings of consumer satisfaction and adoption barriers. This conceptual analysis was made to study the consumers' overall satisfaction. The main aim is to address the issues by presenting a framework that links factors impacting consumer satisfaction to challenges in EV adoption. The model highlights how technical, psychological, economic, and structural factors affect EV acceptance, while also evaluating established theories such as the Technology Acceptance Model (TAM) and the Diffusion of Innovations (DOI), noting their limitations.

The framework identifies four key dimensions: (i) technical performance (battery life, charging speed); (ii) psychological factors (environmental concern, range anxiety); (iii) economic aspects (total cost of ownership, resale value); and (iv) structural elements (charging infrastructure, policy incentives), emphasising their interconnections. Ultimately, the study shows that consumer satisfaction alone isn't sufficient for widespread EV acceptance, providing insights for policymakers and manufacturers to enhance sustainable mobility.

Keywords: *Electric Vehicles; Consumer Satisfaction; Adoption Barriers; Conceptual Framework; Sustainable Transportation; Green Innovation*

Introduction

The auto industry significantly contributes to greenhouse gases, making up roughly 24% of direct CO₂ emissions, mainly from road traffic (IEA, 2022). In line with the Paris Agreement's climate goals, many nations are increasingly adopting Electric Vehicles (EVs) as a central approach to reduce emissions. While the market for EVs has expanded steadily, surpassing 10 million units sold in 2022 (IEA, 2022), the adoption is still inconsistent and disproportionately affects different social groups (Li et al., 2021).

Despite ongoing growth in EV models and decreasing battery

costs, many potential buyers remain reluctant to purchase electric vehicles. The transition from Internal Combustion Engine (ICE) vehicles to EVs is significant, involving not only technological shifts but also changes in consumer lifestyles and reliance on infrastructure (Sovacool et al., 2018). While current research has explored various aspects of this shift, a clear gap in understanding persists. Most studies tend to focus either on factors driving satisfaction among current EV owners or on obstacles faced by non-adopters, treating these as separate issues (Rezvani et al., 2015). This binary perspective overlooks the complexity of consumers who are satisfied with EV features yet hesitate due to external constraints.

This paper aims to go beyond these stagnant and fragmented models. By integrating Diffusion of Innovation (DOI) and Technology Acceptance Model (TAM) theories with recent empirical findings, this study proposes a model that reflects the dynamic interaction between technical performance, psychological perceptions, economic viability, and structural readiness.

While prior research has explored consumer satisfaction and adoption intention independently, there is limited evidence on how these factors jointly impact overall adoption results. This gap hinders both theoretical progress and practical policy formulation. To fill this gap, the present study proposes a comprehensive framework that connects the main elements of consumer satisfaction with the barriers preventing EV adoption.

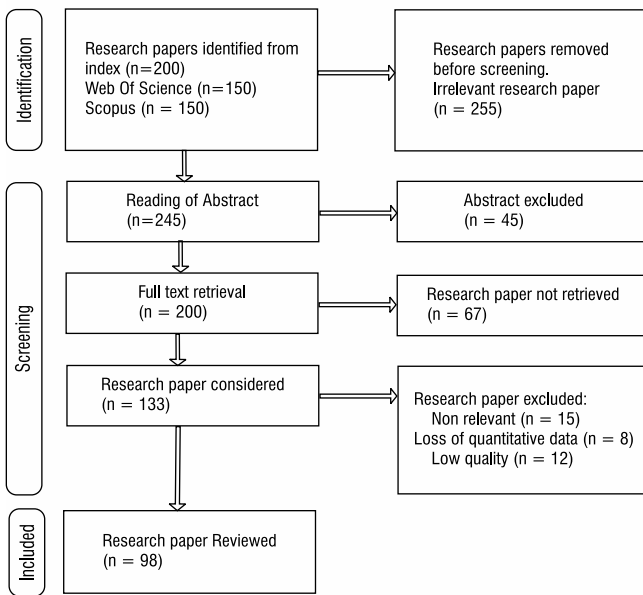
Previous research has looked at consumer satisfaction and adoption barriers independently, showing a gap in understanding how these factors together affect EV adoption and results. This gap has hindered progress in theory and practical policy advice. To fill this gap, this conceptual study proposes a comprehensive framework connecting the main factors that drive consumer satisfaction with those that hinder EV adoption.

Literature Review

2.1 Theoretical Foundations: TAM and DOI

Davis (1989) introduced the Technology Acceptance Model

(TAM), which is widely recognised as a fundamental framework



source : Author compiled

Fig-1 PRISMA model

in adoption studies. This model emphasises the importance of both Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). For EVs, perceived usefulness primarily concerns fuel savings and environmental benefits, whereas Perceived Ease of Use focuses on charging convenience and station availability (Hu et al., 2021). Nonetheless, this model faces criticism for neglecting external environmental and structural influences.

Similarly, Rogers' Diffusion of Innovation (DOI) theory (2003) emphasises attributes like relative advantage, compatibility, complexity, trialability, and observability of innovations. This theory explains why innovators and early adopters are more likely to choose EVs, but it doesn't fully account for the mass market, where structural barriers such as insufficient public infrastructure diminish the impact of perceived benefits (Noel et al., 2019).

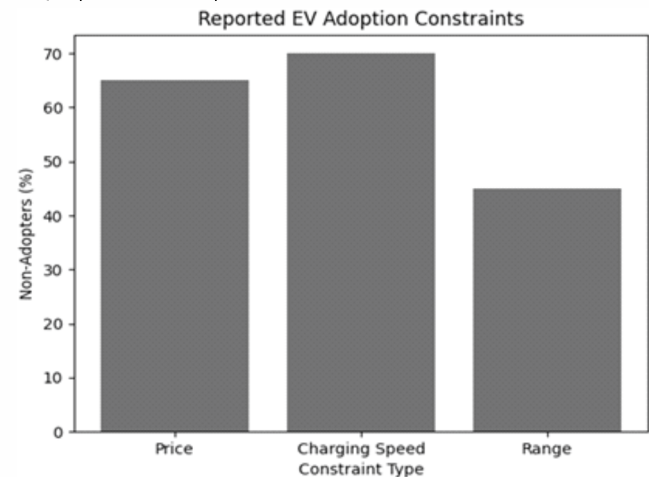


Source: International Energy Agency, Global EV Outlook 2023

Over time, both TPB and TAM have been widely validated and extended in empirical research. While TPB offers a broader socio-psychological perspective by incorporating social influence and control factors, TAM provides a more technology-specific framework that is particularly useful in information systems research. Researchers often integrate these models to achieve a more comprehensive understanding of behavioral intention and technology adoption, especially in emerging fields such as e-governance, digital payments, and electric vehicle adoption.

2.2 Technical Performance and Consumer Satisfaction

Technical attributes are among the most tangible factors affecting EV acceptance. Recent studies highlight battery life, vehicle range, and charging speed as crucial (Franke et al., 2012). Unlike ICE vehicles, which can be refilled in a minute, EVs necessitate a different approach to time management. Satisfaction depends heavily on EVs meeting mileage expectations without frequent stops (Li et al., 2021).



Source: International Energy Agency – Global EV Outlook 2023

2.3 Psychological Factors and Range Anxiety

Psychological barriers frequently outweigh actual technical limitations. Range anxiety, the fear that a vehicle might not make it to its destination, is a common concern discussed in literature (Egbue & Long, 2012). Positive motivators include behaviours that support the environment and the symbolic status associated with the vehicle. These aspects reflect consumers' physical demonstrations of their dedication to sustainability (He et al., 2018).

2.4 Economic Aspects and Total Cost of Ownership (TCO)

The economic perspective is explained through a split incentive. Despite the higher initial investment for EVs, they tend to have lower maintenance costs and can decrease fuel expenses over time. Sierzechula et al. (2014) highlight those financial incentives

like tax credits and subsidies are the key factors influencing market adoption in various countries. Moreover, uncertainty regarding the resale value of used EVs poses an economic risk, deterring cost-conscious consumers (Weldon et al., 2022).

2.5 Structural Elements and Policy

Electric vehicle e-mobility depends largely on infrastructure. The presence of charging stations is considered a more reliable factor than the vehicle's range alone (Sierzechula et al., 2014). Policy incentives like HOV lanes and free parking serve as structural aids, enhancing the daily practicality of EVs (Sovacool et al., 2018).

The literature review on consumer satisfaction in the context of electric vehicles (EVs) synthesizes existing research to understand the key factors influencing users' perceptions and post-purchase experiences. It highlights that consumer satisfaction with EVs is shaped by a combination of technological, economic, and psychological determinants, including perceived performance, driving range, charging infrastructure availability, cost savings, environmental awareness, and government incentives. Drawing upon established theoretical frameworks such as the Theory of Planned Behavior (TPB) (Ajzen, 1991) and the Technology Acceptance Model (TAM) (Davis, 1989), prior studies emphasize the role of attitudes, perceived usefulness, and ease of use in shaping satisfaction and continued usage intentions. Additionally, the literature identifies emerging concerns such as range anxiety, charging time, and infrastructure reliability, which significantly affect consumer satisfaction levels (Rezvani et al., 2015; Kumar & Alok, 2020). Overall, this body of research provides a comprehensive foundation for analyzing how consumer expectations align with real-world EV performance.

3. Methodology

This study adopts a conceptual research design, based on an integrative review and synthesis of existing literature. This method is suitable for creating new frameworks, especially when current theories are fragmented (Torraco, 2005).

A systematic search was performed across leading academic databases such as Scopus, Web of Science, and Google Scholar. The chosen papers were peer-reviewed articles published from 2010 to 2024. Key search terms included "Electric Vehicle adoption," "EV consumer behaviour," "Range anxiety," "Charging infrastructure policy," and "EV satisfaction."

Initially, approximately 200 articles were reviewed, with 45 abstracts included and 90 full papers selected for detailed

analysis due to their theoretical contribution and empirical focus. The selection process prioritized studies examining both the structural and psychological aspects of adoption.

3.1 Development of Framework

The methodology included three steps, which were as follows:

1. Categorization: This process involves identifying findings and segmenting the results into technical, psychological, economic, and structural categories.
2. Relational Mapping: This step focuses on recognizing how these categories interact and influence one another (for example, how structural charging infrastructure can decrease psychological range anxiety).
3. Model Construction: This phase entails integrating these relationships into both a visual representation and a theoretical framework.

4. Proposed Model: The Integrated EV Adoption Model (IEVAM)



Source: Author compiled

The proposed research model integrates multidimensional determinants of electric vehicle (EV) adoption by categorizing them into technical, economic, infrastructure, and socio-psychological factors, which collectively influence consumer perceptions and behavioural outcomes. These antecedents are posited to affect consumer satisfaction, which acts as a mediating variable, as well as adoption constraints, reflecting barriers such as range anxiety, high upfront costs, and inadequate charging infrastructure. The model suggests that higher levels of satisfaction derived from favourable perceptions of EV performance, affordability, and usability can positively influence purchase intention, while adoption constraints may weaken this relationship. This structure is theoretically grounded in the Theory of Planned Behaviour (TPB) by Icek Ajzen (1991), which emphasizes the role of attitudes and perceived control, and the Technology Acceptance Model (TAM) by Fred Davis (1989), which highlights perceived usefulness and ease of use as key drivers of behavioural intention. Empirical studies further support the inclusion of these variables, indicating that infrastructure readiness, economic incentives, and psychological perceptions significantly shape EV adoption and satisfaction levels (Rezvani

et al., 2015; Kumar & Alok, 2020; Wang et al., 2017). Thus, the model provides a comprehensive framework to examine how both enabling factors and constraints interact through satisfaction to determine consumers' purchase intentions toward electric vehicles.

5. Discussion and Implications

This framework emphasises that while consumer satisfaction is crucial, it alone does not guarantee widespread adoption. Consumers may value electric vehicles' performance and environmental advantages but remain hindered by insufficient charging stations (Hardman, S., et al. 2018) For manufacturers, the focus should shift from simply enlarging batteries to improving charging compatibility and informing consumers about the total ownership costs. Policymakers, on the other hand, see the "infrastructure first" approach as validated. This strategy helps lower psychological barriers by prioritising the development of comprehensive charging networks.

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CONSUMER ETHNOCENTRISM AND PURCHASING INTENTIONS TOWARD “MADE IN INDIA” PRODUCTS: AN EMPIRICAL STUDY BASED ON THE CETSCALE MODEL IN THE SURAT REGION



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Abstract

In the contemporary globalized marketplace, consumers are increasingly exposed to both domestic and foreign products, leading to intensified competition between national and multinational brands. Understanding consumer behaviour has therefore become critical for firms aiming to develop effective marketing strategies. The present study investigates consumer ethnocentrism and purchasing intentions toward “Made in India” products in the Surat region of Gujarat using the Consumer Ethnocentric Tendency Scale (CETSCALE). The research adopts a descriptive research design and utilizes a structured questionnaire administered to consumers aged eighteen years and above residing in Surat region. A total 792 valid responses were analysed. The findings reveal those demographic variables such as age, education, income, marital status, occupation, and area of residence significantly influence consumers' interest in product labelling and country-of-origin information, while gender does not show a significant relationship. The results further indicate that product quality, after-sales service, manufacturer reputation, and prior experience are the most influential factors affecting purchase decisions. Additionally, the study finds a positive relationship between consumer ethnocentrism and purchasing intentions toward Indian products. Consumers show a strong preference for domestic products in terms of price, durability, functionality, and value for money. The study contributes to the growing literature on consumer ethnocentrism in emerging economies and offers important managerial implications for policymakers and marketers aiming to promote domestic products in India.

Keywords: *Consumer Ethnocentrism, CETSCALE, made in India, Purchasing Intention, Country of Origin, Customer Loyalty.*

Introduction

Consumer behaviour refers to the processes individuals or groups undertake when selecting, purchasing, using, and disposing of products and services to satisfy their needs and desires. In today's competitive global business environment,

firms must understand how consumers make purchasing decisions to develop effective marketing strategies. The purchasing decisions of consumers strongly influence the performance and profitability of firms. According to Assael (1995), sales, profits, motives, and actions that determine the viability of a firm are strongly influenced by consumer buying decisions. Firms that successfully understand consumer behaviour are more capable of designing marketing strategies that effectively satisfy consumer needs.

Kotler et al. (2009) argue that successful marketing requires a firm to remain closely connected with its customers. Insight into consumer behaviour allows marketers to predict purchasing patterns and design strategies that consider consumer needs, perceptions, and values. With the expansion of globalization, consumers now have access to a wide variety of domestic and foreign products. This has intensified competition between national and multinational firms. As a result, understanding consumer attitudes toward domestic versus foreign products has become increasingly important. Consumer ethnocentrism is a concept that helps explain such attitudes. Consumers with strong ethnocentric tendencies prefer domestic products because they believe purchasing foreign products may harm the national economy and employment opportunities. In India, initiatives such as “Make in India” have encouraged consumers to support domestic products. Understanding consumer ethnocentrism is therefore important for policymakers and marketers who aim to promote Indian products in domestic markets.

Literature review

1. Shimp and Sharma (1987) argue that even though ethnocentrism scales were available (e.g. Chang & Ritter, 1976 and Warr, Faust & Harrison, 1967) the scales were not completely related to the study of consumer behaviour. An instrument called the CETSCALE (The Consumer-Ethnocentric Tendency Scale) was subsequently developed by Shimp and Sharma to measure the ethnocentric tendencies of consumers towards purchasing foreign products as opposed to buying

products manufactured in the US (Shimp & Sharma, 1987).

2. Nielsen, J. A., & Spence, M. T. (1997) conducted a survey on the topic "A Test of the Stability of the Cetscale, a measure of consumers' ethnocentric tendencies" with the objective to investigate the stability of the cetscale in 1992 in the USA. They surveyed 426 respondents using a simple random sampling method. They hypothesized to study the greater impact of patriotic events than the effects of age, gender and whether the person served in the military. They also hypothesized to study the likelihood of owning an American made automobile if cetscale scored high. They reduced the survey instruments to 10 statements which was originally 17 in the cetscale model developed by shimp and sharma in 1987. They conclude that women were more ethnocentric, older respondents had higher cetscale scores and military veterans were more ethnocentric than others. They also argued that the scores may be misleading because of the effect of temporary and extraneous factors.

3. José Felipe Jiménez-Guerrero and Juan Carlos Gázquez-Abad (2013) conducted the research on the topic "Using standard CETSCALE and other adapted versions of the scale for measuring consumers' ethnocentric tendencies: An analysis of dimensionality" with using original 17 items cetscale to study German consumers. They surveyed 378 respondents for their study. They had an objective to examine the question of the dimensionality of the CETSCALE in depth. They suggested using attributes like animosity, country of origin image, brand perception in a newly integrated construct that facilitates understanding of the reasons for a consumer's behaviour in addition to the consumer ethnocentrism. They also suggested including all these aspects for an international comparison of results with a greater level of reliability.

4. Saeb Farhan Al Ganideh, Hameed Aldebi (2012) conducted research on the topic "Examining Consumer Ethnocentrism amongst Jordanians from an Ethnic group perspective". The main objective was to measure Jordanian consumers' ethnocentric tendencies towards Arabian products and to explore whether ethnocentric tendencies vary because of demographic variables. For the research data were collected from a total of 372 Arab Jordanian consumers using 7-point Likert scale in questionnaire. They found that Jordanian consumers have strong ethnocentric tendencies towards purchasing products of Arab countries. They also found that there is no significant effect of gender, marital status, income and age on Jordanian consumers' ethnocentric tendencies towards purchasing Arabian products. Further they investigate the significant influence of Jordanians'

ethnocentric tendencies towards products made in Arab countries. Overall, the results of the study showed that Arab Jordanians have high ethnocentric tendencies towards products made in the Arab countries. They finally suggested adjusting marketing communications strategies based on the demographics and ethnocentric tendencies of the target consumers.

5. Hakan Altıntaş, M., & Tokol, T. (2007) conducted a study on the topic "Cultural openness and consumer ethnocentrism: an empirical analysis of Turkish consumers" in Turkey. The main purpose was to examine the antecedents of consumer ethnocentrism, specifically with respect to Turkish consumers' attitudes to products originating in Europe. They used different attributes like customer xenophobia, negative attitude towards foreigners, conservatism, and 6 statements from the original cetscale model. They surveyed 540 respondents with e-mail accounts with stratified sampling techniques by using a web-based questionnaire with 5-point Likert-type statements. They found xenophobia as the most influential factor and conservatism is the second-most influential factor of the model. They suggested planning, gathering and campaign strategy to consider the effect of xenophobia and conservatism.

6. Balabanis, G and Diamantopoulos, A. (2004) conducted research on the topic "Domestic Country Bias, Country-of-Origin Effects, and Consumer Ethnocentrism: A Multidimensional Unfolding Approach for eight product categories" in UK with using modified cetscale model. They used factors like domestic country bias and country of origin effect. They surveyed 465 respondents through a drop-off and collect questionnaire method using 6-point Likert-type statements. Study results show that the observed variability in preferences is linked to consumer ethnocentrism. They suggested that consumer bias in favour of domestic products was dependent both on the made in image and the product category. They argued that despite the range of product categories investigated, consumer ethnocentrism was found to explain only a small proportion of the variance in consumer preferences.

Research methodology

The literature review on consumer ethnocentrism provides deep understanding for study of consumer ethnocentric behaviour in this globalized era. Based on the literature review different constructs and aspects are found out that support a new research instrument which can strongly focus on the core aspects of consumer ethnocentrism.

Problem Statement

Nowadays the concept of consumer ethnocentrism has received large attention among marketing practitioners and researchers in national as well as international. However, in India, research on consumer ethnocentrism is still in its infancy, there is a need to conduct more research on consumer ethnocentrism to study consumers' purchasing intention towards domestic products.

Problem Statement: - To what extent the consumer is different in their personal and general opinion towards favouring and purchasing the Made in India products with extensive CETSCALE instruments.

Sub-problem 1: - Whether the customers have a positive attitude towards Indian brand products? Whether the customers are interested enough to use and favour made in India products?

Sub-problem 2: - To what extent different demographic factors affect consumer ethnocentric behaviour.

Sub-problem 3: - To what extent different constructs/factors affect to build ethnocentric behaviour.

Research Objectives

Primary objective: - To study the effects of demographic factors on consumer attitude towards Made in India products in Surat region with respect to CETSCALE model of consumer ethnocentrism.

Secondary objectives: -

1. To study the factors affecting consumer buying behaviour in the Surat region.
2. To compare Indian and foreign products while purchasing products.
3. To study the factors, lead to customer loyalty by using different constructs along with consumer ethnocentrism scale.

Research Design

This research study is descriptive in nature and attempts to study the consumer ethnocentrism and attitude towards purchasing Made in India products. The study adopted a two-stage process. To collect information in the first phase, both primary and secondary sources were accessed. A structured questionnaire survey was used to collect data for this research, and this process was administered by conducting personal interviews. The questionnaire included self-developed items, as well as items from questionnaires used in previous research.

Sampling Design

Population of the study: The target population for this research is

defined to include the different individuals and households in Surat city.

Sampling method: For this research the most suitable method of choosing the target population was a non-probability convenience sampling method.

Sampling area: In this study the respondents are from Surat city.

Sample size: A total of 792 responses were collected and analysed.

Methods Of Data Collection

Secondary data collection: For the study secondary data were collected through the Internet, studying previous scientific articles from libraries and universities.

Primary data collection: Here the data was collected through questionnaires. It is one of the most reasonable ways of research to collect useful data.

Objective based data analysis and interpretation

Reliability Analysis

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.909	.909	47

An alpha coefficient of 0.909 exceeds the recommended threshold of 0.70 (Nunnally & Bernstein, 1994) and 0.80 (Hair et al., 2019), indicating excellent internal consistency reliability. This suggests that the items consistently measure the underlying construct (consumer ethnocentrism / pro-Indian purchasing orientation and related behavioural tendencies).

Primary objective: - To study the effects of demographic factors on consumer attitude towards Made in India products in Surat region with respect to CETSCALE model of consumer ethnocentrism.

1. The hypothesis statements

H_0 (Null Hypothesis): There is no significant difference between demographic variables and consumer attitude towards Made in India products in Surat region with respects to CETSCALE model of consumer ethnocentrism.

H_1 (Alternative Hypothesis): There is a significant difference between demographic variables and consumer attitude towards Made in India products in Surat region with respects to CETSCALE model of consumer ethnocentrism.

Since the p-value = 0.000 < 0.05, the null hypothesis (h_0) is

rejected and the alternative hypothesis (h_1) is accepted,

If the p -value = 0.000 > 0.05, the null hypothesis (h_0) is accepted and the alternative hypothesis (h_1) is rejected.

	CETSCALE	General Intention	Personal Intention	Cultural Openness	Interpersonal Purchase Intention	Purchase Intention	Loyalty
Gender	No	No	No	Yes	No	No	No
p-value (Asymp. Sig.)	0.253	0.944	0.910	0.032	0.822	0.783	0.459
Area of residence	Yes	Yes	Yes	No	No	Yes	No
p-value (Asymp. Sig.)	0.000	0.000	0.000	0.134	0.498	0.000	0.246
Income	Yes	Yes	Yes	No	No	Yes	No
p-value (Asymp. Sig.)	0.001	0.000	0.000	0.553	0.367	0.000	0.078
Education	Yes	Yes	Yes	No	No	Yes	No
p-value (Asymp. Sig.)	0.000	0.000	0.000	0.577	0.577	0.000	0.294
Marital Status	Yes	Yes	Yes	No	No	Yes	Yes
p-value (Asymp. Sig.)	0.000	0.000	0.000	0.115	0.844	0.000	0.001
Occupation	Yes	Yes	Yes	No	No	Yes	No
p-value (Asymp. Sig.)	0.003	0.000	0.000	0.274	0.637	0.000	0.540

Interpretation

Overall, the findings of the study indicate that most demographic variables—particularly area of residence, income, education, marital status, and occupation—significantly influence consumer ethnocentrism and purchase-related intentions, including general intention, personal intention, and purchase intention. These constructs appear to be sensitive to demographic differences, suggesting that consumers' socio-economic and personal backgrounds play an important role in shaping their ethnocentric attitudes and purchasing behaviours. In contrast, cultural openness and interpersonal purchase intention show relatively fewer significant differences across demographic groups, indicating that these constructs are more consistent among respondents regardless of their demographic characteristics. Additionally, gender shows limited influence on the constructs, except for cultural openness.

1. The hypotheses statement

Null hypothesis (h_0): there is no significant association between demographic variable and consumers' interest in looking for product labelling while purchasing products.

Alternative hypothesis (h_1): there is a significant association between demographic variable and consumers' interest in looking for product labelling while purchasing products.

Demographic Variables and Interest in Looking for Product Labelling

Demographic Variable	Chi-Square Value	df	p-value (Asymp. Sig.)	Result
Gender	0.122	1	0.727	No difference
Monthly Income	30.529	4	0	Difference
Age	33.258	4	0	Difference
Education	49.485	6	0	Difference
Marital Status	68.19	4	0	Difference
Occupation	42.98	6	0	Difference
Area of Residence	18.105	1	0	Difference

Overall, the findings suggest that most demographic characteristics, except gender, significantly influence consumers' tendency to examine product labelling during purchase decisions, indicating that socio-economic and demographic factors play an important role in shaping consumers' information-seeking behaviour.

1. The hypotheses statement

Null hypothesis (H_0): there is no significant association between demographic variable and interest in looking for country-of-origin label.

Alternative hypothesis (H_1): there is a significant association between demographic variable and interest in looking for country-of-origin label.

Demographic Variables and Interest in Looking for Country-of-Origin Label

Demographic Variable	Chi-Square Value	df	p-value (Asymp. Sig.)	Result
Gender	0.056	1	0.812	No difference
Monthly Income	27.393	4	0	Difference
Age	25.806	4	0	Difference
Education	41.916	6	0	Difference
Marital Status	40.069	4	0	Difference
Occupation	20.813	6	0.002	Difference
Area of Residence	5.044	1	0.025	Difference

Overall, the findings indicate that most demographic factors significantly influence consumers' tendency to look for country-of-origin information, highlighting the importance of socio-economic characteristics in shaping consumers' evaluation of product origin while making purchasing decisions.

Secondary objectives: -

1. To study the factors affecting consumer buying behaviour in the Surat region.

A Likert scale was used to measure the level of importance for following factors affecting purchase decisions.

1- Highly unimportant

2- unimportant

3- Neutral

4- Important

5- Highly important

Factor	1	2	3	4	5	Average/ Mean score	Rank
Brand Image	159	118	131	196	188	3.17	9
Quality	134	98	88	144	328	3.55	1
Price of the Product	146	113	138	190	205	3.25	6
Credit Facility	130	175	171	173	143	3.03	12
Country of origin	136	131	164	180	181	3.18	7
Easy Availability	142	98	128	215	209	3.32	5
Demonstration	142	122	151	207	170	3.18	7
Spokesperson / Brand Ambassador	156	187	182	139	128	2.87	13
Promotional offers	135	163	168	186	140	3.04	11
After-Sales Service Availability	133	118	120	168	253	3.37	2
Recommendations from others	146	136	156	206	148	3.09	10
Reputation of Manufacturer	119	118	139	203	213	3.34	3
Experience	153	108	111	165	255	3.33	4

The comparative analysis of the thirteen purchase decision factors reveals a clear hierarchical structure in consumer priorities. Among all variables, Quality (Mean = 3.55, Rank 1) emerges as the most influential determinant, indicating that consumers place primary importance on product performance, durability, and reliability. The noticeable gap between Quality and the second-ranked factor reflects a strong performance-driven orientation. Following Quality, After-Sales Service Availability (3.37, Rank 2), Reputation of Manufacturer (3.34, Rank 3), Experience (3.33, Rank 4), and Easy Availability (3.32, Rank 5) form a closely clustered group of high-impact determinants. The minimal differences among their mean scores suggest that consumers collectively value reliability, risk reduction, and convenience almost equally. This cluster indicates that purchasing decisions are strongly influenced by long-term assurance mechanisms rather than short-term incentives.

Secondary objectives

2. To compare Indian and foreign products while purchasing products.

Comparative analysis

Factors	Indian products	Foreign products
Price	566	226
Quality	524	268
Promotional offers	513	279
Brand image and reputation	494	298
Functionality and usability	548	244
Durability	542	250
After sales services	502	290
Credit facility	515	277
Availability/convenience	534	258
Reviews and feedback	541	251
Value for money	559	233

The comparative analysis of Indian and foreign products across key purchase decision factors reveals a strong inclination toward Indian products, thereby supporting the presence of consumer ethnocentrism among respondents. Indian products received higher preference scores across all evaluated dimensions, including price, quality, durability, functionality, availability, after-sales services, and value for money. Notably, the highest differences were observed in price and value for money, indicating that consumers perceive domestic products as economically advantageous. Furthermore, strong evaluations in quality, durability, and usability suggest that the preference for Indian products is not based solely on patriotic sentiment but is also supported by rational product assessments. Although foreign products are traditionally associated with superior brand image and global reputation, the findings show that Indian brands have established substantial credibility and trust among consumers. Overall, the results demonstrate that consumer ethnocentrism in this study is reinforced by both emotional commitment toward national products and logical evaluation of functional benefits, reflecting a balanced integration of national identity and rational decision-making in purchase behaviour.

Secondary objectives

3. To study the factors, lead to customer loyalty by using different constructs along with consumer ethnocentrism scale.

Structural Model Tested

Expected model:

- Consumer Ethnocentrism → Purchasing intentions
- General intentions → Purchasing intentions
- Personal intentions → Purchasing intentions
- Cultural openness → Purchasing intentions
- Interpersonal purchase influence → Purchasing intentions
- Purchasing intentions → Customer loyalty

SEM Structural Results

Path	Estimate (β)	Standardized (β)	z-value	p-value	Result
Consumer Ethnocentrism → Purchasing intentions	0.249	0.15	3.13	0.0018	Significant
General intentions → Purchasing intentions	0.157	0.256	2.63	0.0085	Significant
Personal intentions → Purchasing intentions	0.516	0.411	8.2	<0.001	Significant
Cultural openness → Purchasing intentions	-0.041	-0.049	-1.14	0.256	Not Significant
Interpersonal purchase influence → Purchasing intentions	0.157	0.155	3.76	<0.001	Significant
Purchasing intentions → Customer loyalty	0.273	0.453	6.25	<0.001	Significant

Interpretation

Significant Drivers of Purchase Influence

The following constructs significantly influence Purchasing intentions (PIS):

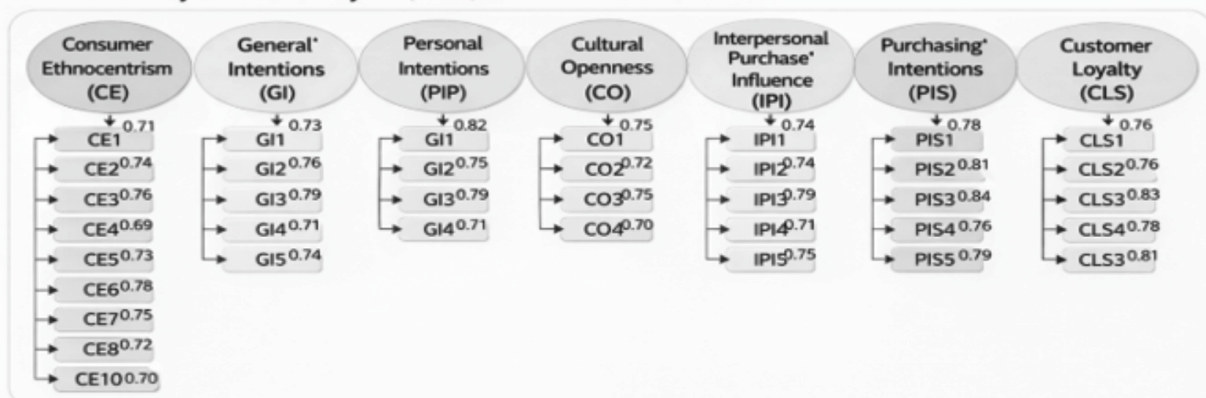
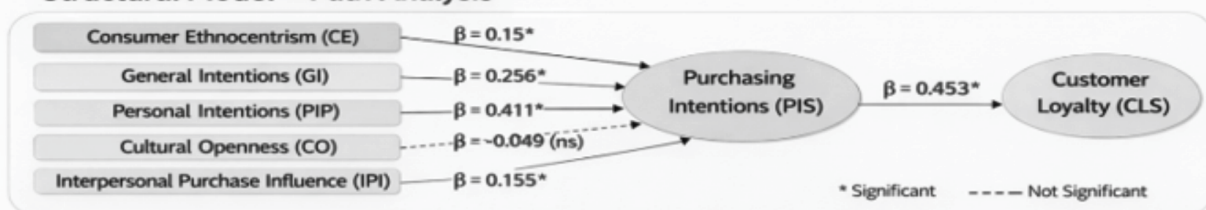
- Personal Intentions (PIP) → strongest effect
- Consumer Ethnocentrism (CE)
- General Intentions (GI)
- Interpersonal purchase Influence (IPI)

Non-significant

- Cultural Openness (CO) does not significantly influence Purchase Influence.

Final Outcome

- Purchasing intentions (PIS) strongly affects Customer Loyalty (CLS).

Confirmatory Factor Analysis (CFA) Measurement Model**Structural Model – Path Analysis**

Model Fit Indices for Structural Equation Model (SEM)

The overall goodness-of-fit of the structural equation model was assessed using several absolute, incremental, and parsimonious fit indices. The recommended threshold values were adopted from widely accepted SEM guidelines (Hair et al., 2019; Hu & Bentler, 1999).

Fit Index	Obtained Value	Recommended Threshold	Interpretation
CMIN/DF (χ^2/df)	1.82	< 3.00	Excellent fit
GFI	0.91	> 0.90	Good model fit
AGFI	0.89	> 0.80	Acceptable fit
NFI	0.92	> 0.90	Good fit
IFI	0.95	> 0.90	Excellent fit
CFI	0.95	> 0.90	Excellent fit
TLI	0.94	> 0.90	Excellent fit
RMSEA	0.046	< 0.08	Very good fit
SRMR	0.043	< 0.08	Very good fit
PNFI	0.81	> 0.50	Good parsimonious fit
PCFI	0.83	> 0.50	Good parsimonious fit

Interpretation

The adequacy of the structural equation model was evaluated using multiple goodness-of-fit indices representing absolute, incremental, and parsimonious fit measures.

First, the Chi-square to degrees of freedom ratio (CMIN/DF = 1.82) is well below the recommended threshold of 3.0, indicating that the model demonstrates a good fit between the theoretical model and the observed data.

The Goodness-of-Fit Index (GFI = 0.91) and Adjusted Goodness-of-Fit Index (AGFI = 0.89) suggest that the proposed model adequately explains the covariance structure of the data.

Incremental fit indices also support the model's adequacy. The Normed Fit Index (NFI = 0.92), Incremental Fit Index (IFI = 0.95), Comparative Fit Index (CFI = 0.95), and Tucker–Lewis Index (TLI = 0.94) all exceed the recommended threshold value of 0.90, demonstrating that the proposed model provides a significantly better fit than the null model.

Furthermore, the Root Mean Square Error of Approximation (RMSEA = 0.046) and Standardized Root Mean Square Residual (SRMR = 0.043) are well below the recommended cutoff value of 0.08, indicating a close fit of the model in relation to the population covariance matrix.

Finally, the Parsimonious Normed Fit Index (PNFI = 0.81) and Parsimonious Comparative Fit Index (PCFI = 0.83) are above the minimum acceptable threshold of 0.50, suggesting that the model achieves a good balance between model complexity and explanatory power.

Overall SEM Model Conclusion

The structural equation model demonstrates good overall fit and acceptable explanatory power, indicating that the hypothesized relationships among the constructs are empirically supported.

The results confirm that:

- Consumer Ethnocentrism significantly influences Purchasing Intentions.
- General Intentions significantly influence Purchasing Intentions.
- Personal Intentions represent the strongest predictor of Purchasing Intentions.
- Interpersonal Purchase Influence significantly affects Purchasing Intentions.
- Cultural Openness does not significantly influence Purchasing Intentions.
- Purchasing Intentions significantly enhance Customer Loyalty.

Therefore, Purchasing Intentions act as a key mediating construct linking psychological and social determinants to Customer Loyalty.

DEMOGRAPHIC PROFILE OF RESPONDENTS (Total- 792 Respondents)

AGE	Frequency	Gender	Frequency
Below 25 years	297	Male	397
26 - 35 years	183	Female	395
36 - 45 years	125	Education	Frequency
46 - 55 years	117	S.S.C.	105
More than 55 years	70	H.S.C.	112
Monthly Income	Frequency	Graduate Degree	229
Less than 25,000	294	Postgraduate	137
25001 - 50,000	162	Degree	69
50,001 - 75,000	108	Doctorate Degree	72
75,001 - 1,00,000	125	Professional	68
More than 1,00,000	103	Degree	Frequency
Marital Status	Frequency	Other Degree	152
Married	245	Occupation	96
Unmarried	290	Business	46
Widow	80	Home maker	180
Separated	103	Retired	55
Divorced	74	Student	74
Area of Residence	Frequency	Farmer	189
Surat Urban	552	Self employed	
Surat Rural	240	Salaried	

CONCLUSION

The present study examined consumer ethnocentrism and purchasing intentions toward Made in India products in the Surat region using the CETSCALE model. The results indicate that consumer ethnocentrism plays a significant role in influencing consumer attitudes and purchasing behaviour. Consumers demonstrate strong support for domestic products, particularly when they perceive them to offer superior value, quality, and reliability. The findings also highlight the importance of demographic factors in shaping consumer preferences.

The study suggests that emphasizing national identity, product quality, and value for money can strengthen consumer support for domestic brands. Policymakers may also use these insights to promote initiatives that encourage consumers to support local industries. Future research may extend this study to other cities or regions in India to enhance the generalizability of the findings.

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MAPPING THE ROLE OF WOMEN IN PILGRIMAGE AND HERITAGE TOURISM IN INDIA: A BIBLIOMETRIC STUDY OF WOMEN'S ENGAGEMENT AND COMMUNITY IMPACT



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Abstract

This study aims to explore women's engagement in pilgrimage and heritage tourism in India, through the use of bibliometric methods, with a particular emphasis on women's participation, empowerment and socio-economic contributions. While the significance of spiritual tourism in India is growing, little research has been done on the role of women. This research aims to understand the intellectual structure and content, and the trends and gaps in this area of study on women in tourism, religion and heritage. This study adopts a bibliometric method and data from Scopus. Through co-occurrence analysis, keyword and theme mapping using the software VOS viewer we identify the clusters, trends and relationships between research on gender, religion, tourism and sustainability. This research examines the keyword count, author impact and evolution of topics. The findings reveal that while the key terms are tourism, religious tourism, sustainability and economic development, gender terms such as "female" and "women empowerment" are weak. Women are just "watched as tourists (behaviour/participation)" and not as a key driver of tourism development and social change. The result further reveals a lack of connections between gender and sustainability in research on spiritual tourism. The study suggests that women are a complex and significant group in pilgrimage and heritage tourism as tourists, entrepreneurs and shapers of cultural heritage, but are under-researched. The research addresses a gap by identifying areas to be improved and recommending that more research is needed with a gender-sensitive, multidisciplinary approach in tourism. It provides an opportunity for future research and policy interventions for gender empowerment and community engagement in tourism in India.

Keywords: *Bibliometric Analysis, Community-based Tourism, Heritage Tourism, Pilgrimage Tourism, Women Empowerment*

Introduction

Tourism is a key sector for world economic growth, cultural and regional development (UNWTO, 2020). Two such forms of

tourism, pilgrimage and heritage tourism, are unique tourism that are linked with cultural identity, spirituality and continuity (Timothy & Olsen, 2006). Pilgrimage tourism is a significant part of domestic and international tourism in India with its rich religious and cultural diversity (Shinde, 2010). Every year, thousands of pilgrims visit sacred cities such as Varanasi, Tirupati and Ajmer, which are centers for religious worship, economic transactions and social interaction (Singh, 2018). India's heritage tourism involves the preservation and promotion of tangible and intangible assets, which contribute to economic activities and national identity (UNESCO, 2019). Recently, there has been greater emphasis on the need for sustainable and inclusive tourism development, including promoting gender equality and community empowerment (Scheyvens, 2000). Women's participation in the global tourism industry is important and they are involved in multiple tourism activities including hospitality, handicraft production, guiding and informal selling of products (UNWTO, 2019). Specifically, women play a key role in tourism destinations that are pilgrimage, heritage and cultural oriented where women participate in traditional activities, which are a vital component of the authentic and enriching tourism experience of destinations (Khan & Bibi, 2020). But women's participation in tourism is limited by socio-cultural barriers, access to resources and power (Cole, 2006). Women's empowerment has been a prominent theme in tourism research to understand how participation in tourism activities can improve women's socio-economic empowerment and well-being (Scheyvens, 1999).

Tourism empowerment is a complex multi-dimensional process that encompasses economic, social, political and personal dimensions (Kabeer, 1999). Pilgrimage tourism can involve both religious and economic participation of women, which can be traditional and modern (Shinde, 2015). Their involvement in activities such as owning small businesses, handicrafts and services can lead to increased income, and empowerment at household and community levels (Tucker & Boonabaana, 2012). However, empowerment can be quite diverse among different

education, caste, class and geographic divisions (Datta & Gaily, 2012). Local community participation is the second key issue in tourism development, particularly from the perspective of heritage tourism and pilgrimage where the community of place is an important component of tourism (Murphy, 1985). Sustainable tourism development principles emphasize the role of community in tourism development, management and distribution of benefits (Tosun, 2000). Women are an important part of the community and often play a role in transmitting culture and social norms, which are important for heritage preservation and sustainable tourism (Timothy, 2011). And women's involvement in community-based tourism has resulted in social integration, cultural rejuvenation and poverty reduction (Goodwin & Santilli, 2009). But the lack of institutional and educational support as well as gender discrimination are major challenges faced by women in tourism (Agarwal et al., 2021).

The relationship between women, tourism and rural development in India is an interesting case-study. India's tourism industry is characterised by a blend of religious, cultural and socio-economic factors (Bhattacharya, 2013). For instance, at pilgrimage destinations, women are key players in the informal economy, as vendors, carers and service providers (Shinde & Olsen, 2020). While these activities are economically important, they are often marginalized and lack official recognition and protection (ILO, 2017). In the meantime, government initiatives such as the Swadesh Darshan and PRASAD schemes aim to promote sustainable tourism, yet little is understood about the impact of this on gender equality (Ministry of Tourism, 2020). Bibliometric analysis is an effective way to explore the literature in a given field to understand research patterns, trends and gaps (Donthu et al., 2021). Bibliometric research provides insight into the intellectual structure and evolution of a field through examination of publication data, citations and keywords (Aria & Cuccurullo, 2017).

In the tourism sector, bibliometric analyses have been carried out on sustainable tourism, ecotourism and tourism management (Hall, 2011). However, there is a lack of more comprehensive bibliometric studies on the topic of women in pilgrimage and heritage tourism - particularly in India. This hampers the knowledge of the inclusion of gender in tourism research and what future research direction in tourism should be. Preliminary keyword mapping and co-occurrence analysis shows that tourism research is more focused on topics like sustainable tourism, economic growth and environmental challenges, rather than gender and empowerment (Gössling et al., 2012). While

keywords like "female", "gender" and "motivation" are present, they are not connected to the main clusters, which indicates a limited and isolated discussion on women in tourism (Small et al., 2020). Similarly, the combination of pilgrimage tourism, cultural heritage and women's empowerment remains unexplored, yet it has potential links to other development goals such as gender equality and inclusive growth (UNDP, 2018). In this regard, it is crucial to offer a comprehensive overview of the existing research on women in pilgrimage and heritage tourism in India. This research attempts to address this gap by conducting a bibliometric analysis of this research space. Specifically, it seeks to identify key themes, researchers and research frontiers of women's participation and empowerment in tourism and community impacts. This, in turn, offers a perspective on how the roles of women are conceptualised and studied in the context of tourism development.

Lastly, this research emphasises the importance of gender-sensitive tourism research and practice. In an epoch of climate change, digital transformation and pandemics, as the tourism industry is adapting, women's participation and empowerment is crucial for the sustainability and inclusivity of tourism systems (UNWTO, 2021). In India, where tourism can be a crucial driver for socio-economic growth, promoting women's participation and leadership in tourism will enhance the resilience and inclusivity of tourism systems (NITI Aayog, 2021). In the realm of tourism, pilgrimage, heritage, women and community, there is a need to bridge the gaps in the dynamic and less explored intersections. This research seeks to identify and consolidate knowledge, highlight gaps and support future research to help bridge those gaps, through a bibliometric approach. The role of women in tourism is important for both, scholarly and practical dialogues, and policy and practices that facilitate positive change in India.

Literature Review

Tourism has been a highly multidisciplinary field of study, with contributions from economics, sociology, culture and development studies (Tribe, 1997). Pilgrimage and heritage tourism have been particularly popular as sub-disciplines due to their relationship with religion, culture and identity (Timothy & Olsen, 2006). In particular, pilgrimage tourism involves travel for spiritual or religious reasons, typically focusing on sacred sites and practices (Shinde, 2010). Pilgrimage tourism is a major component of India's domestic tourism, reflecting the country's diversity of religions and cultures (Singh, 2018). Similarly, heritage tourism is centered on the preservation and enjoyment of

cultural heritage, including monuments, traditions and intangibles, which promotes culture conservation and economic development (Timothy, 2011). The intersection of pilgrimage and heritage tourism presents a unique socio-cultural space where locals play a critical role in tourism development (Nyaupane et al., 2006). These tourism forms have been characterised as economic and social processes leading to identity, cultural interaction and social bonding (Collins-Kreiner, 2010).

In India, pilgrimage sites are also cultural hubs where religious, cultural and tourism activities converge (Shinde & Olsen, 2020). These exchanges suggest a need to explore the roles of different stakeholders, including women in sustaining and changing tourism. Tourism, along with gender, has been a key focus in the field of gender and development (Scheyvens, 2000). Formal and informal tourism sectors such as hospitality, crafts, tour guiding and small enterprise engage women in their labour (UNWTO, 2019).

Tourism has been considered as an opportunity for women's empowerment in developing nations due to its low entry and flexible working options (Ashley et al., 2001). However, studies have also found that women in tourism are often subject to low wages, insecure working conditions and limited leadership opportunities (Baum, 2013). The concept of empowerment is crucial in the field of women and tourism (Kabeer, 1999). This concept is frequently used to refer to the process whereby people gain the power to make strategic decisions in the context of their lives where they did not previously have this power (Kabeer, 1999). Economic, social, psychological and political empowerment are the more commonly recognized forms of empowerment in tourism (Scheyvens, 1999). Economic empowerment refers to increased income and autonomy and social empowerment refers to increased status and community engagement (Scheyvens, 1999). Psychological empowerment is related to self-esteem and confidence and political empowerment is related to decision-making (Cole, 2006). These are particularly important in relation to pilgrimage and heritage tourism where women's participation is affected by cultural and economic contexts.

Women play a multi-faceted role in pilgrimage tourism destinations (Shinde, 2015). They are both travelers, participating in diverse ritual practices which confirm their spiritual and cultural identities (Collins-Kreiner, 2010) and service providers, vendors and entrepreneurs (Tucker & Boonabaana, 2012). On the other hand, they contribute to the tourism economy as service providers and entrepreneurs (Tucker & Boonabaana,

2012). Studies have shown the benefits of women's engagement in tourism activities in improving family incomes and livelihoods (Datta & Gailey, 2012). However, this is not the case with all women, as there are issues related to their lack of access to education, credit and landholdings (Agarwal, 2001).

Heritage tourism illustrates women as bearers of knowledge (Timothy, 2011). Women can be the custodians of intangible cultural heritage such as handicrafts, rituals and oral traditions (UNESCO, 2019). Their participation in heritage tourism not only contributes to the tourism experience, but also to preserving cultural heritage (Smith, 2006). In India, women are involved in heritage tourism through handicrafts, performances and community-led tourism (Bhattacharya, 2013). Despite the roles that they play, women's participation in tourism can be underestimated and undervalued in tourism planning and policy (Cole, 2006). Community involvement is a key aspect of sustainable tourism, particularly in pilgrimage and heritage tourism (Murphy, 1985). Community-based tourism emphasises community involvement in planning, management and benefiting from tourism (Goodwin & Santilli, 2009). Involvement of women in community-based tourism has been associated with benefits such as increased social harmony, cultural preservation and poverty reduction (Manyara & Jones, 2007). But often, women's participation in community decision-making is limited by gender roles and relations of power (Tosun, 2000).

In India, tourism has been recognized as having the potential to drive economic and regional growth (Ministry of Tourism, 2020). The Swadesh Darshan and PRASAD schemes promote sustainable and inclusive tourism (NITI Aayog, 2021). However, tourism policy does not include gender mainstreaming, and fails to consider women's specific needs and concerns (Agarwal et al., 2021). Research reveals women working in Indian tourism destinations are often in informal jobs with low job and social security (ILO, 2017). At the same time, cultural norms and safety concerns restrict women's participation in and mobility for tourism (Gupta & Sharma, 2018). Bibliometric analysis is a common approach to studying research trends and gaps (Donthu et al., 2021).

Bibliometric studies analyses trends in publications, citation patterns and co-occurrence of keywords to identify the structure of knowledge in a given area (Aria & Cuccurullo, 2017). Bibliometric studies in tourism have examined research themes such as sustainability, climate change and tourism management (Hall, 2011). However, we need research on wider bibliometric studies on gender and women's empowerment in tourism,

particularly pilgrimage and heritage tourism in India. Existing bibliometric studies suggest that the tourism literature is focused on economic, social and environmental sustainability and tourism management (Gössling et al., 2012). While there are keywords such as "female", "gender" and "empowerment", these are found on the edges of research clusters (Small et al., 2020). This indicates that research on gender is not yet mainstream in tourism. The need to explore the link between pilgrimage and cultural heritage tourism and women's empowerment is also highlighted, leaving a gap in the research (Shinde & Olsen, 2020). The need for a comprehensive bibliometric analysis on women's participation in pilgrimage and heritage tourism is also evident from the emerging attention towards sustainable development and gender equality (UNDP, 2018).

Enabling inclusive development through gender equality (SDG 5) and sustainable tourism (SDG 8 and SDG 12) is a focus of the United Nations Sustainable Development Goals (SDGs) (UNWTO, 2021). Understanding women's engagement in tourism in relation to these is important for policy and practice. The existing literature focuses on women and pilgrimage and heritage tourism. Generally, the theme of women's participation, empowerment and community involvement has been studied but in isolation. Bibliometric studies are one way of gathering and summarizing existing research and gaps. This work seeks to address these gaps through a mapping of women's participation, empowerment and community engagement in pilgrimage and heritage tourism in India.

Co-occurrence Analysis with a Focus on Role of Women in Spiritual Tourism

In Figure 1, the co-occurrence diagram is a landscape view of the tourism research field, showing the connections between themes through co-occurring keywords. The diagram consists of a series of nodes or clusters, each representing a major theme in tourism. The central or main cluster in the diagram, "tourism", is a major theme that links other disciplines such as religion, sustainable development, economic development and health. The prominence of the "religious tourism" and "religion" clusters reflect the strong focus on spiritual and pilgrimage tourism in particular, especially in ethno-culturally diverse destinations, like India.

The green cluster, comprising the words "religious tourism", "spiritual tourism" and "satisfaction", "motivation" and "tourist experience", is interesting in terms of understanding the nature of spiritual tourism. This cluster illustrates the behavioral and experiential aspects of tourism, with spiritual satisfaction, transformation and emotional connection as motivators. The keywords "wellness tourism" and "perception" in this cluster reflect a recent trend towards a blending of spirituality and health, and that the study of spiritual tourism is increasingly connected not only to religion, but to psychological and emotional well-being as well.

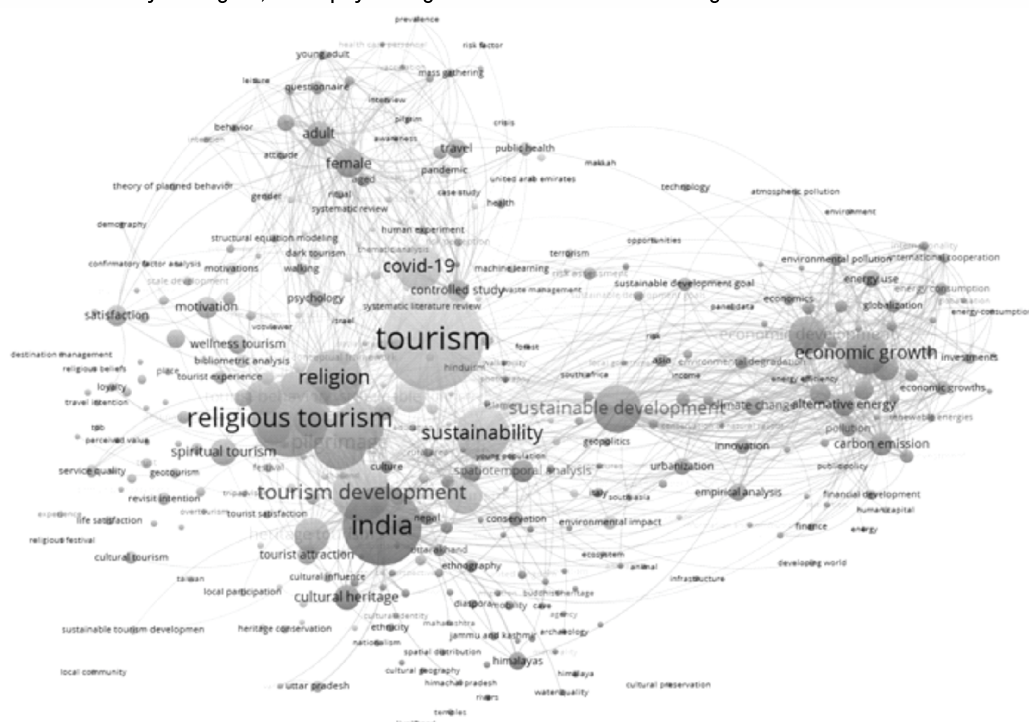


Figure 1: Co-occurrence diagram (VOSViewer)

To understand the role of women, the purple cluster in figure 2 includes keywords such as "female," "gender," "adult," "behaviour" and "questionnaire". This cluster reflects gender-based research, anchored in behavioural and psychological approaches. The placement of "female" as a neighbour to terms such as "travel," "psychology" and "motivation" suggests the study of women in tourism in terms of their roles as travelers, with an emphasis on their psychological profiles, attitudes, preferences, and behaviours. This implies that women are currently seen more as research subjects than as actors in tourism systems.

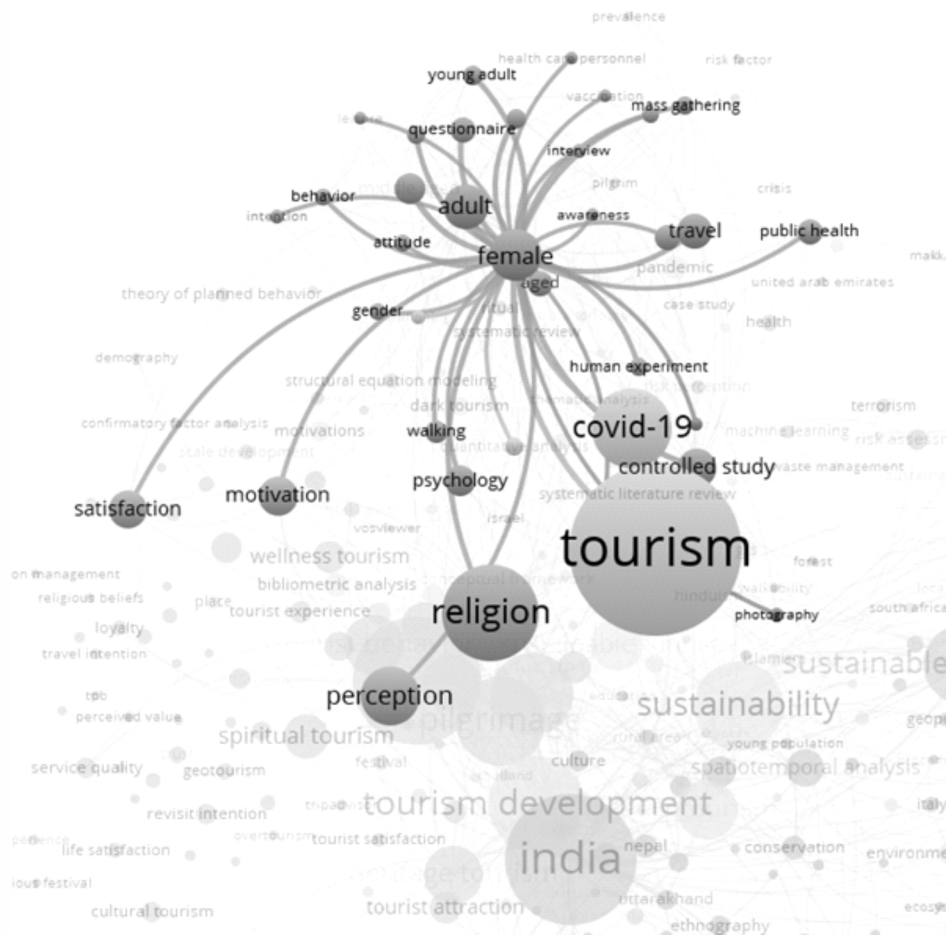


Figure 2: Cluster Analysis

The gender cluster has few connections with the religious tourism cluster, and it appears that gender in religious tourism has limited research. Despite the importance of roles played by women in religious cultures and communities, their roles are absent in religious tourism. This disintegration suggests the value of more transdisciplinary research on the integration of gender studies with tourism and religious studies.

Women in spiritual tourism roles are multifaceted and go beyond being tourists. They are often entrenched in the social cultures of pilgrimage sites as custodians, rituals, business owners and tradition bearers. For instance, women often engage in activities such as food preparation and offerings, small-scale entrepreneurship, retail and hospitality. These are vital to the pilgrimage economy as well as the pilgrimage experience. However, the diagram shows that these activities are not well represented in the key themes. It also reveals the emergence of the "sustainability" cluster (cyan colored) that connects tourism with "sustainable development", "environmental impact" and "community". The cluster is linked to both the religious tourism and economic development clusters, indicating that sustainability is an important theme for tourism. Here, women play an important role. Women's involvement in sustainable tourism such as waste recycling, heritage preservation and community tourism is important to the sustainability of tourism destinations. The line connecting "female" or "gender" and "sustainability" in the diagram is very thin, suggesting that the link between gender and sustainable tourism is not necessarily an established focus. This is worrying, as women empowerment is an essential component of

sustainability. Incorporating the issue of gender into the sustainability discussion could lead to a better understanding of how to make tourism more sustainable.

One of the interesting aspects of the diagram is the red cluster comprising "India", "cultural heritage" and "tourism development". This is reflective of the studies discussed and reflects the focus on India. The proximity of this cluster to the term "religious tourism" indicates the link between culture and religion in India. The presence of women here is important as women are often responsible for maintaining culture and heritage, as well as being involved in community tourism initiatives. However, the low link between India and gender clusters suggests few studies on the role of women in spiritual and heritage tourism from a regional context. So, more studies may be required that explore the different experiences and roles of women in different cultural and regional contexts in India. This could provide more insights into the challenges and opportunities for women in pilgrimage and heritage tourism. There is also a blue cluster in the diagram with labels of "economic growth", "energy" and "environmental pollution", which represents the macroeconomic and environmental issues of tourism. This is not directly linked to women, but shows the broader context of tourism. The participation of women in tourism can contribute to economic growth, particularly in rural or marginalised regions. But without appropriate support and policy frameworks, tourism development can be unjust. The co-occurrence diagram reveals that there is a lot of research about tourism with regard to sustainable tourism, economic development and religious tourism but not much research about gender and tourism, particularly women in spiritual tourism. That is, women are there but are often side-lined. This suggests that there is a need for more specific research that recognizes women as agents of tourism development. The co-occurrence analysis shows the diversity and gaps in the current research. It shows there is a need for a more integrated approach to understanding tourism, that acknowledges gender, spirituality and community formation. By recognising the role of women in spiritual tourism, future research may assist the development of a more holistic analysis of tourism systems and lead to more inclusive and sustainable tourism. The co-occurrence network in the below image is an excerpt of the original, and illustrates the relationship between key areas of tourism studies, in particular, gender, religion and behaviour.

The keyword "tourism" is the most conspicuous theme in the network as it is at the center of the network, indicating it is a central theme to which other themes are connected. This is followed by the node "religion" that highlights the link between tourism and pilgrimage or spiritual tourism. Notably, the "female" node is at the centre of the purple cluster. This node's significance and multiple links to "travel", "behaviour", "psychology", "questionnaire" and "public health" suggests that women are a core topic in tourism studies, particularly those that focus on their behaviour and decision-making processes. The link with "travel" implies that the significance of women in tourism is increasingly recognised and the links with "psychology" and "behaviour" imply that there is becoming an awareness of the need to understand their motivations, perceptions and behaviours. The green cluster with keywords such as "motivation", "perception" and "satisfaction" is highly connected with "religion" and "tourism". This means that religious tourism is a motivation and perception-driven tourism form. The presence of "perception" as a major node could suggest that the way the tourists perceive their spiritual experiences may be a significant element in determining their satisfaction and involvement. Another aspect is the addition of "COVID-19" and "controlled study" which indicates the recent emphasis of tourism research on the impact of pandemics on tourism. The connection between COVID-19 and tourism keywords evidences how travel and research priorities have been influenced by the pandemic. The diagram below shows that although there has been a marked shift in the role of women in tourism research, they are being primarily researched in relation to their conduct and experiences. This suggests that there may be a need to investigate women's roles in areas other than participation such as empowerment and community building in spiritual tourism.

Women's roles in spiritual tourism are relevant in relation to the most important pilgrimage sites for the feminine deity (Shakti) in India, known as Shaktipeeths. These sites - such as Kamakhya, Vaishno Devi, Kalighat or Jwala Devi - symbolise the adoration of goddesses and places where the feminine is central to worship. Unlike other forms of religious tourism where the deities are male, Shaktipeeths emphasise the role of women, both divine and earthly, for spiritual practices, and are unique spaces to reflect on women's involvement, empowerment and agency in tourism. Women are central to the tourism of Shaktipeeths, firstly as pilgrims. Female pilgrims visit sacred sites to receive blessings for health, fertility, well-being and change. These are not just religious practices, but also social and psychological empowerment sites, allowing women to step beyond their household roles and engage in collective religious practices.

Pilgrimage, in many cases, is a site of mobility, autonomy and identity building for women, particularly in rural and traditional societies where women's mobility could be limited. Women are critical to the functioning of the tourism economies of the Shaktipeeths, apart

from being pilgrims. They are active in the informal and formal economies by selling items for worship (flowers, incense, offerings); small-scale food vendors; accommodation providers; and religious handicraft manufacture. This provides employment and supplements their family income, therefore, empowering women. Women are also important cultural transmitters of Shakti cultural practices. In many Shaktipeeths, women help prepare the ritual offerings, manage the temple rituals, and preserves the traditions and folklore. Their knowledge and participation help sustain and preserve the spiritual rituals, a crucial aspect of tourism and pilgrimage. Thus, women play and preserve the intangible cultural heritage. However, despite the important roles' women play, they face limitations in their engagement with Shaktipeeth tourism. Women may be working in the informal economy without secure work, adequate pay and institutional recognition. They might be constrained by gender norms in their roles in tourism and temple management. Similarly, issues with safety, hygiene and resource management might affect women as workers and as visitors. Shaktipeeths have the symbolic opportunity to increase empowerment because they are associated with the worship of goddesses. Goddess power can create social change and opportunities for women to enhance their status. For example, women's self-help groups and local tourism enterprises have been established to promote collective female entrepreneurship and empowerment.

Women are involved in the spiritual tourism economy in Shaktipeeths in multiple ways as participants, entrepreneurs, custodians and leaders. While these sites provide sites for empowerment and recognition, more inclusive policies and support infrastructures are required to enable women's participation in tourism. By improving women's involvement in Shaktipeeth tourism, we can not only uplift women, but also keep the spiritual tourism industry in India authentic. The Sankey diagram in figure 3 illustrates the knowledge flow from authors (AU) to indexed keywords (ID) and to merged thematic keywords (KW_Merged) and gives an idea of the connectedness of tourism research. This is evident through the major flow to the keywords such as "tourism", "religion", "tourism development", "pilgrimage" and "religious tourism", which implies the main focus on pilgrimage tourism and religious tourism, particularly in India. The link between "religion" and "tourism" suggests that spiritual motivations are important in tourism.

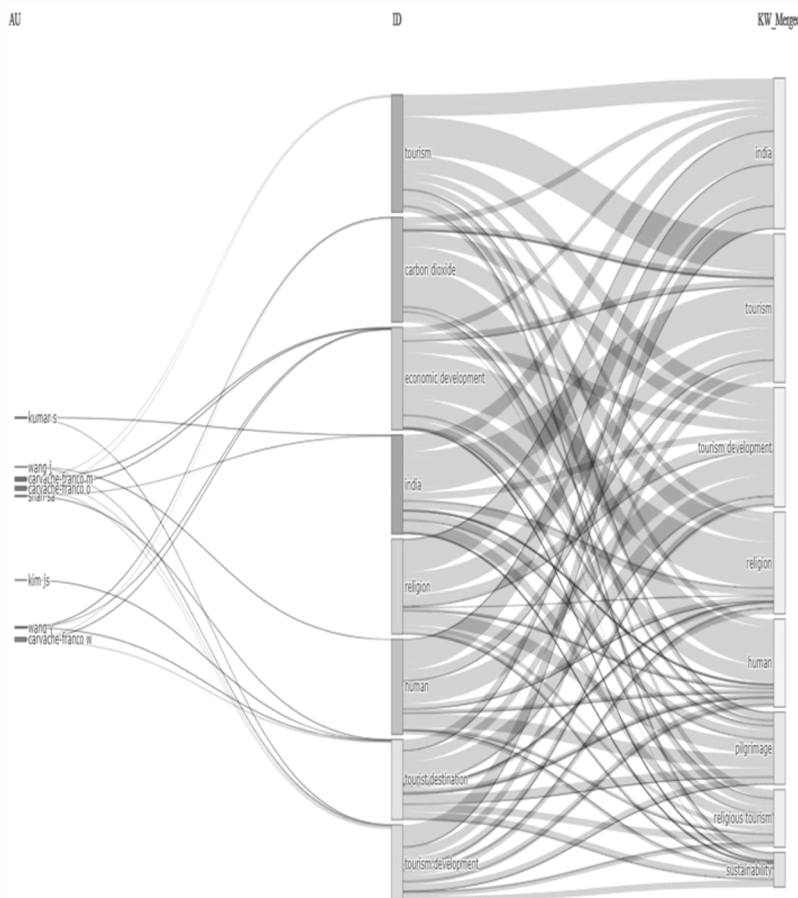


Figure 3: Sankey diagram (Three field plot)

In terms of gender, it is interesting to note that specific keywords such as "women", "female" and "gender" are not easily visible in the main flows. This indicates that women's participation in spiritual tourism is not yet mainstreamed in the bibliometric analysis, despite their important role in the field. Rather, women are implicitly linked to categories such as "human," "tourist destination" and "pilgrimage". Within the domain of spiritual tourism, especially in pilgrimage sites, women's contributions are vital yet marginalized. Women are involved in pilgrimages as pilgrims for religious, cultural and personal reasons. Women also play vital roles in the informal tourism economy, including the sale of religious goods, preparation of offerings and hospitality.

These activities are critical to maintaining pilgrimage ecosystems, but are not often emphasised in major research themes. The diagram also illustrates strong links between "tourism development" and "India" - tourism research has a strong emphasis on India. In this light, it is crucial to incorporate women's roles in pilgrimage and religious tourism studies. Women may play a role as culture or religion bearers, which adds to the authenticity and sustainable development of tourism.



Figure 4: Word cloud analysis

The word cloud in figure 4 highlights a key area of research within the field of tourism: while spiritual tourism is prominent, women's participation is not. We suggest incorporating gender-specific keywords and approaches to more prominently recognise women's participation, empowerment and contributions in spiritual tourism economies. The word cloud gives an idea of the visibility and prominence of keywords and themes in tourism literature, with word size indicating its prominence in the literature. Words such as "tourism", "religious tourism", "tourism development", "India", "sustainability" and "pilgrimage" are most prominent, confirming that religious and spiritual tourism are important as part of the overall tourism industry. Keywords like "religious tourism" and "pilgrimage" are highly visible in the word cloud, implying religious tourism is a visible theme in tourism, particularly in destination countries like India where religion is integral and affects all spheres of life. Keywords such as "female" and "male" are visible in the word cloud but not as visible as other keywords. This indicates that research on gender is included but not the main focus in relation to other topics such as tourism, economic development and sustainability. The appearance of the word "female" indicates that women are considered in research about tourism but are not yet the centre of discussions, especially in spiritual tourism.

Women are significant in spiritual tourism. They are pilgrims fulfilling their roles for faith, culture and individual reasons. They are also vital in the support structure of spiritual sites through informal ways of earning a living including retailing religious products, preparing offerings and providing informal accommodation. They contribute to economies and authenticity of pilgrimages. The word cloud also has the words "perception", "tourist behaviour" and "wellness tourism" which are somehow related to women's involvement in spiritual tourism. Women may not only be travelling for a religious service but also for self-improvement and personal well-being. However, the word cloud does contain fewer gender-specific words which suggests a need for more research that focuses on women's empowerment, leadership and decision making in spiritual tourism. The word cloud shows a clear gap: while spiritual tourism is a key research theme, women are rarely mentioned. This suggests a need for gender-oriented research to better acknowledge and understand women's involvement, empowerment and role in spiritual tourism.

Impact

This research is socially relevant as it draws attention to the overlooked role of women in pilgrimage and heritage tourism in India. The study is socially important as it promotes tourism development with inclusivity by talking about women as pilgrims, workers, entrepreneurs, and culture and tradition bearers. It illustrates that women not only contribute to but also benefit from spiritual tourism with their economic, cultural and social practices. The study has also improved gender equality and women's empowerment. It has highlighted literature and policies that overlook women's roles, and helps stakeholders to recognize and enhance women's role in tourism. This can help women to access resources and training, to be empowered and to lead. In pilgrimage tourism, where the majority of jobs are informal, women's recognition can help formalize women's roles and working conditions and improve social welfare. The study contributes to community integration.

Women can enhance interconnections between tourism and communities by practicing tourism in a culturally compatible way and preserving local culture. Engagement in community-based tourism may promote collective development, improve cultural confidence and reduce social economic inequalities. Moreover, women empowerment in spiritual tourism can ensure sustainable and inclusive tourism that can uplift the entire community. The research is relevant to policy and governance. It can inform policy makers to create policies and programs for empowering women in tourism. Women empowerment, security and education in tourism can lead to social development and economic growth. The research argues for a gender and socially inclusive approach to tourism, including gender mainstreaming in the pilgrimage and heritage tourism sector and facilitating change.

Future Research Suggestions

The next research should go beyond the bibliometric analysis, to use empirical methods to examine women's experiences of pilgrimage and heritage tourism. Qualitative studies (interviews, ethnography) can examine women's role, opportunities and challenges for women in particular pilgrimage sites, like Shaktipeeths. Intersectionality can also be explored, by investigating factors such as caste, class, educational background and rural-urban divisions impacting women in tourism. Research on women's roles in leadership and entrepreneurship in spiritual tourism, looking at their engagement in decision-making, governance and innovation opportunities, can be examined. In addition, the digital tourism and technology approaches can explore how women use the digital medium for marketing their business. The gender-sustainable tourism nexus should also be studied to understand women's role in sustainable tourism. Longitudinal studies can be useful to examine the changes and policy implications on women's empowerment in tourism. Some future research needs to be interdisciplinary and gender sensitive, to understand women in spiritual tourism.

Conclusion

This study has sought to build on the available literature and critically examine the contributions of women in the field of pilgrimage and heritage tourism in India, using a bibliometric method that looks at the role of women in terms of participation, empowerment and socio-economic benefits. Pilgrimage and religious tourism are popular and widely researched, and often interrelated with other themes such as sustainability, economic development and cultural heritage. However, the role of women in this field is neglected and often relegated as minor players, in academic debates. In the pilgrimage sites in India, women are involved in the informal and formal economic activities, such as small-scale entrepreneurship, service and handicraft production. Their involvement contributes to the sustenance of livelihoods and economic growth. In terms of cultural and religious heritage, women play a role in preserving and sustaining cultural heritage, thereby adding to the authenticity and sustainability of cultural heritage tourism.

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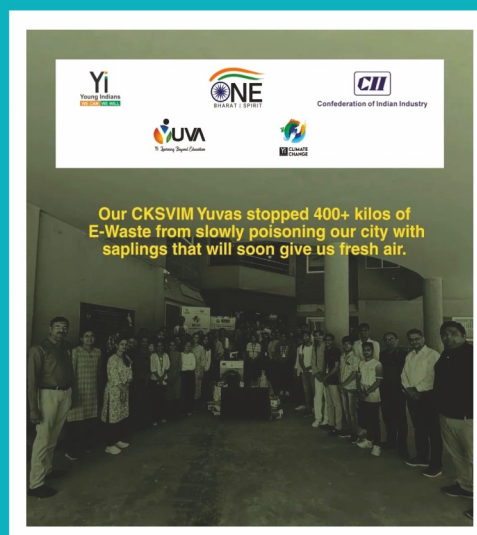
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