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AFFILIATED TO DR. MANMOHAN SINGH BENGALURU CITY UNIVERSITY

SCHOOL OF COMMERCE - UG & PG

Organised

International Conference

on

People, Planet & Profit:

The New Paradigm of Sustainable Commerce

Special Edition



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EDITORIAL MESSAGE

This volume presents a rich and interdisciplinary collection of scholarly contributions from the International Conference on **"People, Planet, and Profit: The New Paradigm of Sustainable Commerce."** At a time when global economies are navigating unprecedented volatility, uncertainty, and multifaceted socio-economic challenges, the imperative for sustainable and responsible business practices has never been more significant. The conference theme thoughtfully underscores the necessity of harmonizing economic advancement with environmental sustainability and social responsibility, reflecting the changing priorities of contemporary commerce and development.

The publication showcases a diverse range of research studies, innovative ideas, and critical perspectives that deepen our understanding of sustainability within the realms of business, commerce, and economic growth. The collective efforts of academicians, researchers, industry professionals, and students exemplify a shared commitment to addressing contemporary challenges through solutions that promote resilience, inclusivity, ethical governance, and long-term value creation.

Serving as a dynamic forum for intellectual engagement and knowledge exchange, the conference fostered meaningful dialogue and collaboration among participants from diverse disciplines and backgrounds. The discussions and research presented herein encourage the exploration of sustainable strategies that simultaneously advance organizational performance, environmental stewardship, and societal well-being.

By bringing together varied viewpoints and emerging insights, this conference has contributed significantly to the ongoing discourse on sustainable commerce. Such academic initiatives play a crucial role in strengthening research, inspiring innovation, and equipping organizations to respond effectively to the evolving demands of a rapidly changing global environment. The contributions featured in this volume not only enrich scholarly understanding but also provide practical guidance for businesses, policymakers, and stakeholders committed to building a more sustainable and prosperous future for people, planet, and profit.

Prof. Raghu VN
Dean – School of Commerce

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A Comparative Analysis of Risk and Return of Equity Mutual Funds in India: Evidence from Bandhan Bank and HDFC Bank

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ABSTRACT

The Indian Mutual Fund industry has recorded tremendous growth in the past decade due to the enhanced knowledge of investors and the government incentives to capital markets. Long-term capital appreciation would come with the risk and hence equity mutual funds would be a good substitute to investment in the financial markets. The purpose of this research is to evaluate the risk and returns attributes of Bandhan Bank and HDFC Bank equity mutual funds in the Indian market environment using statistical and financial measures (e.g., average return, standard deviation, beta, Sharpe ratio, Treynor ratio and Jensen alpha) based on the secondary data (e.g., Net Asset Values (NAV) between the period of April 2024 and March 202 The outcome of the study ought to have a positive impact on the individual investors, academicians as well as the financial planners and also enable them to make a well informed investment decision.

Key words: *Equity Mutual Funds, Risk and Return, Risk-Adjusted Performance, Bandhan Bank, HDFC Bank*

INTRODUCTION

Over the years, the Indian Mutual Funds Industry has become an important part of the whole financial system and serves as a channel from household savings into the capital market. The growth of this industry has been due to a number of reasons, including: continuing to liberalisation of the Indian economy; regulatory actions taken by the market regulators of India and T+1; innovations and advances in finance technology; and the increasing levels of overall financial literacy among the general public in India.

Equity mutual funds have been the most widely used types of mutual funds for individual investors due to their potential for providing significant long-term returns; however, equity mutual funds are subject to major risks from: fluctuations in market prices; changes in global and domestic economic environments; and from risks that are unique to specific sectors.

As a result, investors have become more concerned about the level of risk associated with their investments in equity mutual funds and therefore place much more emphasis on using systematic approaches to evaluate equity mutual funds through both standard performance measures and risk-adjusted performance measures.

A number of important performance measurement tools that investors frequently use to evaluate equity mutual funds include, but are not limited to:

standard deviation, beta, Sharpe Ratio, Treynor Ratio, Jensen's Alpha, all of which measure an equity mutual fund's total and/or systematic risk.

The objective of this research study is evaluating two types of comparable equity mutual funds connected to two separate banking organisations – Bandhan Bank and HDFC Bank, both of which have made major investments in equity mutual funds, and both of which are large banking organisations operating in India.

MATERIALS AND METHODS

Research Gap:

Historically, researchers have put great emphasis on analysis of the performance of mutual funds in India employing risk-adjusted ratios (Sharpe Ratio, Treynor Ratio, Jensen's Alpha, Beta, and standard deviation). The majority of such work has focused on different Asset Management Companies (SBI, HDFC, ICICI, Axis, Aditya Birla, etc.). In addition, there is little research on risk-return performance comparison for equity mutual funds investing in financial institutions/banks (i.e., Bandhan Bank and HDFC Bank). This study will also address that issue.

Statement of Problem:

Investing in a growing industry has attracted numerous investors looking to receive a good return from their investments through Equity Mutual Funds. Investors receive a higher return through Equity Mutual Funds, but there is more risk associated with them and the market can be unpredictable when investing through Equity Mutual Funds. That can make it difficult for an investor to know which Mutual Funds will provide better returns considering the amount of risk taken. While several studies have been performed on the performance of mutual funds, very few studies have interviewed credit unions and banking companies (i.e., Bandhan Bank and HDFC Bank) regarding their equity mutual funds.

Objectives of the Study:

I. Evaluate the return on equity mutual fund schemes provided by HDFC Bank and Bandhan Bank.

II. Measure the risk associated with these funds, using standard deviation (SD) and beta as principal metrics.

III. Evaluate risk-adjusted performance of the above mentioned funds by applying Sharpe ratio, Treynor ratio and Jensen's alpha.

IV. Provide comparison of the risk-return profile of equity mutual funds provided by HDFC Bank and Bandhan Bank. Hypotheses for Study:

Hypothesis 1:

H0: There is no significant difference in return of equity mutual funds provided by HDFC Bank & Bandhan Bank.

H1: There is a significant difference in return of equity mutual funds provided by HDFC Bank & Bandhan Bank.

Hypothesis 2:

H0: There is no significant difference in level of risk associated with equity mutual funds provided by HDFC Bank & Bandhan Bank.

H1: There is a significant difference in level of risk associated with equity mutual funds provided by HDFC Bank & Bandhan Bank.

Hypothesis 3

H0: There is no significant difference in the risk-adjusted performance (Sharpe Ratio, Treynor Ratio, Jensen's Alpha) of equity mutual funds of Bandhan Bank and HDFC Bank.

H1: There is a significant difference in the risk-adjusted performance of equity mutual funds of Bandhan Bank and HDFC Bank.

Conceptual Framework:

The study relies on Modern Portfolio Theory (Markowitz) and the Capital Asset Pricing Model (Sharpe) to establish that there is a linear relationship between risk and expected return. Total volatility can be measured using standard deviation whereas systematic sensitivity (market risk) can be assessed using beta. Four different methods have been used to evaluate fund performance: average return, Sharpe ratio, Treynor ratio and Jensen's alpha.

Independent Variables (Risk Factors): Standard deviation reflects how returns are dispersed relative to mean; high standard deviations indicate a higher level of overall risk. Beta shows a mutual fund's level of reaction to movements in the marketplace; a beta value above 1.0 indicates a higher-level of sensitivity, and a beta value below 1.0 indicates a more cautious or defensive investment.

Dependent Variables (Mutual Fund Performance): The average return provides a measure of a fund's overall profitability, while the Sharpe Ratio provides a measure of excess return per total unit of risk, and the Treynor Ratio provides a measure of excess return per systematic unit of risk. Jensen's alpha reflects the fund's abnormal return relative to what was anticipated based on CAPM.

Market Benchmark: NIFTY 50 and BSE Sensex are used as benchmark indices to represent overall market performance.

Sources of Data and Period of Study:

For this research, I will only use the NAVs (net asset values) of selected Bandhan Bank and HDFC Bank equity mutual funds over the one-year period of April 2022 - March 2023. A series of ratios will be determined: return, standard deviation, beta, sharpe ratio, treynor ratio, and jensen's alpha.

REVIEW OF LITERATURE

Risk-adjusted returns on large-cap mutual funds were evaluated in India from 2020 to 2025. According to Rambabu [1], risk-adjusted returns serve as proof of existence of mutual funds with risk adjustments.

Comparative evaluation of mutual fund schemes of SBI and HDFC was carried out over ten years by Koley [2]. Findings demonstrated that HDFC funds were linked to greater volatility but typically produced higher short-term returns, while SBI funds offered lower risk and comparatively constant returns.Risk-adjustment approach was applied to evaluate performance of equity and debt mutual fund schemes by Pandey [3]. It was revealed that performance levels of AMCs differ considerably.

Comparative evaluation of hybrid schemes of Axis and HDFC was carried out by Sandeep and Ramakrishna [4]. Results concluded that balanced funds are more stable compared to equity schemes. The performance of mutual funds was analysed by Nayak et al. [5] using the Sharpe ratio, standard deviation, beta, and expense ratio in comparison with benchmarks, showing different levels of risk-adjusted performance owing to risk management efficiency.

Market timing and stock selection abilities of Indian mutual fund managers were analysed by Bathia et al. [6] using the Treynor-Mauzy method for 2019-2023, establishing that very few managers outperform in market timing and stock selection.

Performance analysis of HDFC and SBI equity and debt mutual funds during the last five years was conducted by Bharadwaj and Yalamarti [7], showing heterogeneous performance in each type and implying the necessity for diversification.

A review of the existing literature on Indian mutual funds was provided by Mohan and Bohra [8], emphasising the significance of risk-adjusted performance measures and portfolio optimisation models.

The performance measures of five AMC models were analysed by Karthik and Tandan [9] with respect to NAV growth, alpha, beta, Sharpe ratio, and standard deviation, revealing diversities both across and within fund categories.

Jeyaprakash et al. [10] explored risk-shifting behaviour among mutual fund managers in India and discovered that some portfolio managers when changing their environment can reprice their risk exposure, which can be effective in favourable conditions but can increase volatility otherwise.

RESULTS

Net Asset Value (NAV) and Monthly Returns Analysis:

Net Asset Value (NAV) of a mutual fund scheme is the market value per unit of the mutual fund scheme minus the liabilities of the market value of securities in the market. Monthly returns are calculated based on NAV changes month to month.

TABLE 1. BANDHAN BANK MUTUAL FUND NAV AND MONTHLY RETURNS (APRIL 2024 – MARCH 2025)

Month	NAV ( )	Monthly Return (%)
Apr 2024	188.30	–
May 2024	188.30	0.00
Jun 2024	203.78	8.22
Jul 2024	218.08	7.01
Aug 2024	200.30	-8.16
Sep 2024	198.74	-0.78
Oct 2024	182.21	-8.32
Nov 2024	169.08	-7.20
Dec 2024	159.06	-5.92
Jan 2025	151.38	-4.83
Feb 2025	141.19	-6.73
Mar 2025	148.02	4.84

Annual Return = (148.02 − 188.30) / 188.30 × 100 = −21.39%. Bandhan mutual fund showed a negative annual performance of the portfolio over the study period which shows poor performance of the portfolio and unfavorable market conditions.

TABLE 2. HDFC BANK MUTUAL FUND NAV AND MONTHLY RETURNS (APRIL 2024 – MARCH 2025)

Month	NAV ( )	Monthly Return (%)
Apr 2024	760.05	—
May 2024	765.78	0.75
Jun 2024	841.90	9.94
Jul 2024	807.88	-4.04
Aug 2024	818.45	1.31
Sep 2024	866.03	5.81
Oct 2024	867.85	0.21
Nov 2024	898.03	3.48
Dec 2024	886.43	-1.29
Jan 2025	849.38	-4.18
Feb 2025	866.20	1.98
Mar 2025	914.10	5.53

Annual Return = (914.10 − 760.05) / 760.05 × 100 = 20.27%. HDFC mutual fund showed the strong growth with positive annual return with disciplined portfolio management.

Calculation of Risk Through Standard Deviation:

The standard deviation is used to determine the degree to which individual returns vary in comparison with the average value of the mutual fund returns. This means that a larger standard deviation would mean more uncertainty on performance.
Formula: σ = 1/N 0.5 0.5 S(x-x)2/N, x = single return, x = mean return, N = number of data points.

TABLE 3. STANDARD DEVIATION ANALYSIS

Fund	Average Monthly Return	Standard Deviation	Risk Level
Bandhan Fund	-1.81%	5.74	High Volatility
HDFC Fund	1.71%	4.35	Moderate Risk

Volatility of Bandhan Mutual Fund (5.74) was greater than HDFC Mutual Fund (4.35) which validated the fact that the returns of the Bandhan fund were more volatile.

Sharpe Ratio:

Formula: Sharpe Ratio = (Rp − Rf) / σ, where Rp = Return on Portfolio, Rf = Risk-free Rate (7%), σ = Standard Deviation.

Bandhan Mutual Fund: Sharpe Ratio = (−21.39 − 7) / 5.74 = −4.94

HDFC Mutual Fund: Sharpe Ratio = (20.27 − 7) / 4.35 = 3.05

The negative Sharpe ratio of Bandhan means that it performs poorly in terms of risk adjustment. The good risk management and effective generation of returns are reflected in the positive Sharpe ratio of HDFC (3.05).

Beta Analysis:

Formula: Beta (β) = r(p,b) × (σp / σb), where r(p,b) = Correlation between Portfolio and Benchmark, σp = Standard Deviation of Portfolio, σb = Standard Deviation of Benchmark.

TABLE 4. BETA ANALYSIS

Fund	Correlation	Beta	Interpretation
Bandhan Fund	0.82	1.18	More volatile than market
HDFC Fund	0.90	0.98	Closely follows market

Bandhan has a beta of 1.18 meaning that it is more volatile compared to the market index. The beta of HDFC is 0.98 which indicates that it is performing well in line with the rest of the market.

Jensen's Alpha:

Formula: Jensen's Alpha = X − Beta × Y, where X = return on portfolio and Y = return on the market (1.50%).

TABLE 5. JENSEN'S ALPHA ANALYSIS

Fund	Alpha	Interpretation
Bandhan Fund	-3.58	Underperformed the market
HDFC Fund	0.24	Slightly outperformed the market

The alpha of -3.58 with Bandhan Mutual Fund and alpha of 0.24 with HDFC Mutual Fund depict the underperformance and slight overperformance respectively.

Treynor Ratio:

Formula: Treynor Ratio = (Rp − Rf) / β, where Rp = Portfolio return, Rf = Risk-free rate (7%), β = Beta.
Bandhan Mutual Fund: Treynor Ratio = (−21.39 − 7) / 1.18 = −24.06

HDFC Mutual Fund: Treynor Ratio = (20.27 − 7) / 0.98 = 13.55

The negative Treynor of Bandhan indicates inefficiency of risk in generating profit, and the Treynor of 13.55 of HDFC indicates it is successfully using the risks in connection to the market performance. **Comparative Performance Summary:**

TABLE 6. OVERALL COMPARATIVE PERFORMANCE — BANDHAN FUND VS. HDFC FUND

Performance Indicator	Bandhan Fund	HDFC Fund
Annual Return	-21.39%	20.27%
Average Monthly Return	-1.81%	1.71%
Standard Deviation	5.74	4.35
Sharpe Ratio	-4.94	3.05
Beta	1.18	0.98
Jensen's Alpha	-3.58	0.24
Treynor Ratio	-24.06	13.55

Across all performance metrics, the HDFC Mutual Fund outperformed the Bandhan Mutual Fund during the April 2024 to March 2025 study period.

DISCUSSION

The empirical analysis of the equity mutual fund schemes of Bandhan Bank and HDFC Bank after a period of 12 months i.e. April 2024-March 2025 shows a strong variation in the financial performance of the schemes. The Bandhan fund has generated an annual performance of -21.39 which is due to the continuous erosion of the NAV during the period. On the other hand, the HDFC fund has shown a strong positive performance of 20.27 per cent demonstrating the disciplined management of the portfolio and enabling investment strategy.

On risk basis, the standard deviation of the Bandhan fund was 5.74, which was higher than that of HDFC fund (4.35), which validated the higher instability in returns. Such high volatility, along with the adverse results on all risk-adjusted measures - a Sharpe ratio of -4.94, a Treynor ratio of -24.06, and a Jensen alpha of -3.58 - indicate systemic vulnerabilities to risk management and risk generation. These data are generally in line with the results obtained by Koley [2] and Pandey [3] who observed the overall effectiveness of HDFC-associated funds in the stability of the performance and risk-adjusted returns.

HDFC mutual fund has a low beta (0.98), which shows a moderate exposure to market risks whereas Bandhan has a beta of 1.18, which shows a greater exposure to market movement. The alpha of 0.24 of HDFC by Jensen is not very high, but it shows value addition due to active management of the fund.

CONCLUSION

This paper provided a multidimensional risk/return analysis of the chosen equity mutual fund schemes of Bandhan bank and HDFC bank in the period of April 2024 to March 2025. The results indicate

that the two funds have different risk and return profiles. The HDFC Mutual Fund scheme was able to provide high positive annual returns, reduced volatility and improved risk-adjusted returns in terms of Sharpe ratio, Treynor ratio and alpha of Jensen.

Contrastingly, the Bandhan fund gave negative returns every year with high volatility and being highly sensitive to the market without producing sufficient returns to justify the risk undertaken. The greatest learning in this study is the need to concentrate on risk-adjusted performance rather than returns when making investment decisions. The HDFC fund has evidently shown a more balanced risk-return profile and is the preferable choice to investors who want to obtain constant and reliable returns in the long run.

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AI-Driven Predictive HR Analytics for Sustainable Human Capital Resilience: Mitigating Educator Burnout and Enhancing Workforce Retention in Indian EdTech Platforms

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ABSTRACT

Achieving sustainable commerce involves balancing human capital wellness, economic, and environmental performance metrics, especially for the burgeoning EdTech market in India, where around-the-clock digital demands lead to educator burnout, technostress, and turnover. This study explores AI-based HRM practices, grading automation (Gradescope), real-time feedback (CoachBot), and predictive behavioural analytics and their potential for mitigating educator burnout and turnover in EdTech platforms across India, with particular reference to Eduvantage.

By employing survey-based primary research among 450 educators, an 18-month retention curve, Technology Acceptance Model constructs, and Data Justice dimensions, this research found that 30-50% workload reduction is related to 19-22% turnover intentions reduction, 82% accuracy of educator exhaustion forecasts using K-means clustering, and a mediated effect of ethical AI perceptions on increasing affective commitment among educators under 30. This research fills a research gap on ethical AI perceptions and its role in EdTech-based interventions for Education 5.0, human-centered analytics, and supports the 'People' dimension of sustainable commerce by exploring a predictive framework for balancing institutional efficiency and educator wellness.

INTRODUCTION

Employee burnout is a critical organizational issue in the contemporary digital environment, which has a significant impact on productivity, instruction quality, and retention (Omose & Ikuyinminu, 2024; Deep et al., 2025). In high-demand industries such as Ed-Tech in India and Information Technology, traditional employee wellness programs have been deemed ineffective because of the reactive nature of the intervention as opposed to a proactive approach (Naik et al., 2025; Suvarna, 2025). Recent studies have revealed that educator and faculty burnout in the digital environment is associated with emotional exhaustion and depersonalization, which has a direct effect on instruction quality and student motivation (Deep et al., 2025).

Artificial Intelligence (AI) and data analytics have ushered in a new paradigm in the management of the workforce in the digital environment (Omose & Ikuyinminu, 2024). With the help of multidimensional data sets such as sentiment analysis and biometric data, AI has the potential to predict burnout indicators before they manifest as turnover intentions (Naik et al., 2025). Advanced data analysis methodologies such as K-means

clustering have the potential to go beyond the traditional "one-size-fits-all" approach and design interventions based on high-risk groups such as the younger workforce, who have reported lower well-being indicators (Suvarna, 2025).

The digital revolution in the education sector has placed educator burnout at the center of strategies, moving from reactive to proactive approaches in employee relations. Burnout, associated with high cognitive load and labor, is an important contributor to turnover in high- demand Ed-Tech (Indian J. of Educational Technology, 2025; ResearchGate, 2024). Existing studies in recent literature reveal that the key to optimized HRM in the digital revolution is the perceptions of educators regarding AI (Gârdan et al., 2025). AI predictive analytics can identify early warning signs of educator burnout, such as changes in submission time and engagement (MDPI, 2025). AI can serve as an indefatigable support system to reduce affective labor and administrative pressures like grading and scheduling, contributing to technostress (ResearchGate, 2024; Gârdan et al., 2025).

Moreover, AI recommendation systems in educator career planning can cultivate affective commitment, an important predictor of retention (Al Aina & Atan, 2020). Through real-time feedback mechanisms, Indian ed-tech platforms can design an sustainable learning environment that balances performance with educator well-being (Indian J. of Educational Technology, 2025; MDPI, 2025).

The "Education 5.0" paradigm is based on the application of Big Data and predictive modeling in the alignment of goals with the welfare of the faculty staff, using the advantages of data-driven knowledge to "empower rather than alienate staff members" (Omose & Ikuyinminu, 2024; Naik et al., 2025; Aust et al., 2024; Open Book Publishers, 202 (Deep, Ghosh, & Chen, 2025)3). HR in Indian ed-tech can use "human-centered analytics for data justice and ethical transparency," predictive modeling for effective management of change and the reduction of ambiguity in the midst of crisis, in creating a conducive environment for the creation of job satisfaction and stability (Miles, 2021; Aust et al., 2024).

1. REVIEW OF LITERATURE

1. The Proactive Shift in Corporate Wellness

In their study published in 2024, Onyeka Omose and Kehinde Samuel suggest that we should stop reacting. Rather than waiting for an employee to quit or become ill, AI technology can act as an early warning system and detect small changes in behaviour and feedback. I think their emphasis on "Explainable AI" was significant: keeping technology transparent and ethical, not like Big Brother.

2. Merging Technology with Nature

A new perspective by Kasturi Naik, Suhasini Ghosh, Harshita Soni, and Shradha Singh (2025) suggests that AI can help identify stress by biometric and sentiment analysis. However, the solution does not lie in more screen time. Instead, the authors recommend "eco-volunteering," in which AI can help identify people in distress and then recommend that people reconnect with nature to help regain mental well-being.

3. The Crisis in Higher Education

Burnout is not just an issue in the business world; it is now an issue in the classroom as well. Faculty burnout was found to have a domino effect in the classroom in 2025 by researchers Promethi Das Deep, Nitu Ghosh, and Yixin Chen. The researchers stated that if professors are burnt out, then student engagement and learning outcomes suffer. The researchers are urging universities to use AI to help with administrative tasks so professors have more time to teach.

4. Data-Driven Personalization in the IT Sector

A good, data-heavy introduction to the Indian IT industry can be found in Abhishek Suvarna (2025). The study uses K-means clustering, grouping employees into wellness zones. An important finding: the under-30s are the most at risk, proving that HR cannot treat everyone the same. AI is the solution; the 22-year-old coder is not the same as the 50-year-old manager.

5. Optimization of HRM via AI Perceptions

It is interesting to consider the psychology of technology on performance. In the article "Optimization of HRM via AI Perceptions" (Gârdan et al., 2025), the researchers demonstrate the benefits of the integration of AI into the classroom to enhance human resource management from the perspective of teacher perception. The researchers apply the Technology Acceptance Model to demonstrate that when teachers perceive AI as a personalization tool, as opposed to a replacement tool, it enhances job satisfaction and subsequently retention.

6. Mitigating Burnout through Workload Automation

Administrative tasks are demotivating in education. The study "Mitigating Burnout through Workload Automation" from the Indian Journal of Educational Technology in 2025 highlights AI in mitigating educator burnout. The study discusses how AI helps educators avoid burnout by automating administrative tasks. The study discusses how AI-based systems such as Gradescope and CoachBot provide real-time feedback and student progress information. The AI systems help educators focus more on the quality of their instruction and not just administrative work. Administrative work is often demotivating in ed-tech contexts.

7. Talent Management and Organizational Performance

However, individual career development is equally important. The study in "Talent Management and Organizational Performance" by Al Aina & Atan (2020) examines talent management practices and organizational outcomes. The overall findings of this study reveal that learning, development, and career management, facilitated by AI-based recommendations, play a significant role in predicting employee retention. For Indian EdTech firms, AI can be used to improve career paths to increase affective commitment among educators.

8. Detection of Learning and Instructional Burnout

Being in AI and HR, the predictive aspect of the next paper is of interest. In the MDPI 2025 paper "Detection of Learning and Instructional Burnout," the authors investigate the possibility of using generative AI in detecting "learning burnout," which can be extended to educator burnout in virtual environments. With the assessment of the timestamp of the submissions through closed-loop responses in teaching, the AI can predict educator burnout.

9. The Economic Benefits of Tireless Labor

We must also examine the operational sustainability of the 24/7 model. On ResearchGate (2020/2024), studies under AI's Economic Benefits of Tireless Labour reveal that AI can help teacher shortages. AI pedagogical agents can cope with natural affective demands, like changes in mood or fatigue, which lead to burnouts. This is offloaded to AI, helping Indian EdTech services cope with teacher workload and stress in constant online education.

10. Impact of Training on Affective Commitment

Myint (2026) studies HRM activity's impact on teacher commitment, concluding that professional development and training are key drivers of teacher retention. Ed-tech leverages AI-driven predictive analytics to detect knowledge gaps, enabling personalized learning plans that allow teachers to adapt to evolving technology, mitigating technostress and burnout.

11. Wellbeing and Ethical AI Frameworks

Klimova & Pikhart (2025) have reviewed the effects of AI on students and staff. According to them, AI has two sides. The first one is that it can relieve stress because it can adapt to the individual's pace. The second one is that it can cause "digital fatigue." They suggest a balanced use of AI that takes a holistic approach to health. For HR departments, it means not only monitoring productivity but also monitoring "well-being indicators" with AI to ensure digital- first work remains healthy for employees.

12. The Transition to "Education 5.0"

Technology 5.0, based on AI, Big Data, and IoT, has been proposed by Aust et al. (2024) for building a sustainable HRM strategy. According to them, data-driven HR insights, combined with employee participation in decision-making, have been found to be most effective for motivation. The rapidly developing Ed Tech industry in India can leverage smart technology to gain predictive insights for linking company goals with the welfare of educators.

13. Managing Change and Crisis with HR Analytics

Miles (2021) is an analysis of organizational change in crises, such as the change in the ed-tech sector after the pandemic. Its recommendation is for HR departments to increase their visibility using analytics to decrease "human resource management ambiguity." In the case of Indian ed- tech, analytics could be used to predict educator resistance or burnout from changes in remote work policies or platform updates.

14. Data Justice and Educator Rights

In Open Book Publishers (2023), the authors investigate the use of AI in higher education using data justice. While AI can increase productivity and facilitate communication, it can also lead to the outsourcing of relationships between teachers and students. Thus, the authors emphasize that HR

analytics must be human-centered to avoid alienating teachers.

2.2 RESEARCH GAP

The literature identifies several applications of AI in optimizing HRM in education, such as automated grading and scheduling (Gârdan et al., 2025), predictive retention (Al Aina & Atan, 2020; Myint (Suvarna, 2025) (Gârdan, Gârdan, & Epuran, 2025) (Group, 2025) (Aina & Atan, 2020) (Group M. R., 2025) (Scholars, 2024) (Myint, 2026) (Klimova & Pikhart, 2025) (Aust,

Matthews, & Muller-Camen, 2024) (Miles, 2021) (Team, 2023), 2026), burnout reduction using AI in detecting burnout (MDPI, 2025), balanced models of well-being (Klimova & Pikhart, 2025), supporting Education 5.0 transition (Aust et al., 2024), and human-centered data justice (Open Book Publishers, 2023). Most of these are theoretical in nature and are based on case studies and general organizational settings. However, there is a lack of longitudinal studies on AI-based HRM in Indian ed-tech firms that experience rapid educator scaling, 24/7 digital demands, and cultural factors that contribute to burnout and turnover. Another important gap is related to teachers' perceptions of ethical use of AI in education using technology acceptance model and data justice in relation to burnout reduction, affective commitment, and technostress reduction.

2. OBJECTIVES

1. Examine the impact of AI-driven HRM practices on educator retention, affective commitment, and technostress in Indian ed-tech platforms.

2. Assess educators' perceptions of ethical AI implementation and its influence on their well-being and retention over time.

3. Develop and validate AI-driven predictive frameworks for proactive well-being.

4. CONCEPTUAL FRAMEWORK

In addition, the proposed framework is based on six different but complementary theoretical traditions, each of which brings its own explanatory power to different structural parts of the framework.

Theoretical Framework

The proposed framework is based on the integration of six different but complementary theoretical traditions.

Theoretical Framework	Key Source(s)	Role in Conceptual Model
Technology Acceptance Model (TAM)	Davis (1989)	Explains educator adoption of AI-HRM tools through perceived usefulness and ease of use as antecedents of behavioral intention, directly shaping ethical AI perceptions.
Job Demands-Resources (JD-R) Model	Bakker & Demerouti (2007)	Frames AI automation as a job resource that buffers against high digital demands (24/7 teaching cycles), reducing burnout through cognitive load redistribution.
Conservation of Resources (COR) Theory	Hobfoll (1989)	Posits that educators protect valued resources (time, energy, identity); AI-HRM tools that preserve these resources enhance retention and reduce technostress.
Data Justice Framework	Taylor (2017)	Extends TAM with fairness, transparency, and non-alienation dimensions, ensuring AI systems respect educator agency and do not commodify behavioral data.
Organizational Commitment Theory	Meyer & Allen (1991)	Three-component model informing measurement of affective commitment as emotional attachment to the ed-tech organization, influenced by perceived AI fairness.
Predictive Analytics & ML Frameworks	Delen et al. (2011)	Provides methodological grounding for longitudinal attrition prediction models using behavioral trace data (timestamps, engagement metrics) with supervised learning algorithms.

4.1 Technology Acceptance Model (TAM) as the Core Adoption Lens

Davis' (1989) Technology Acceptance Model is employed as the key framework for

specifying educator adoption of AI-HRM technologies within this framework. TAM suggests that two key drivers of technology adoption are the perceived usefulness of a technology for improving performance and its perceived ease of use. In the context of AI-mediated HRM, perceived usefulness is defined as the degree to which educators perceive AI-based automation technologies as reducing grading burdens and improving predictability of workloads, whereas perceived ease of use is defined as the degree of intuitiveness of technology interfaces.

This framework is an extension of the standard TAM model by embedding it in data justice, recognizing that the adoption of technology is not just cognitive but also has ethical implications. For the adoption of these technologies to occur among educators, they need to find them useful and user-friendly, but also ethical and respectful of their autonomy as professionals, an aspect that was not originally considered by the TAM.

Independent Variables (AI-HRM Practices)	Mediator (Ethical AI Perceptions)	Dependent Variables (HRM Outcomes)	Moderators (Indian Ed-Tech Context)	Output (Predictive Framework)
• Grading & scheduling automation (e.g., Gradescope) • Real-time feedback tools (CoachBot) • Predictive analytics for exhaustion detection • Cognitive load reduction (30–50%) • Personalized workload management tools	TAM Dimensions: • Perceived usefulness • Ease of use • Intention to use Data Justice Dimensions: • Algorithmic fairness • Transparency • Human-centered design • Non-alienation principle	• Educator retention rates • Affective organizational commitment • Technostress reduction • Burnout scores • Job satisfaction • Holistic well-being indicators	• 24/7 digital teaching demands • Rapid platform scaling pressures • Cultural work ethic norms • Work-life balance expectations • High-pressure ed-tech environment	• ML models: 80%+ attrition prediction accuracy • Longitudinal behavioral data (timestamps, engagement metrics) • Closed-loop intervention system • 12-month iterative refinement cycles • Personalized mental health & workload support

4.2 Independent Variables: AI-Driven HRM Practices - Grading and Scheduling Automation

AI-driven optimization of the school timetable and grading systems like Gradescope to reduce teachers' grading time by 30-50% for every grading task.

Real-Time Feedback and Teaching Tools: AI-driven teaching assistants like CoachBot to

provide teachers with immediate feedback to adjust their teaching processes quickly without bottlenecks.

The application of behavioural analytics for fatigue detection can be considered predictive analytics for exhaustion detection.

4.3 Mediator: Perception of Ethical AI

The two constructs of the Technology Acceptance Model and Data Justice outline the cognitive and normative aspects of ethical AI perception as a mediator with multiple dimensions.

Since AI-HRM is both a technological and ethical imperative in high-stakes education environments, the construct of AI-HRM can be evaluated on six dimensions:

- Perceived Usefulness: Belief in the performance benefits of AI-HRM to reduce workload (as per the Technology Acceptance Model).
- Perceived Ease of Use: Belief in the ease of use of AI-HRM systems with a low learning curve (as per the Technology Acceptance Model).
- Intention to Use: Intention to use AI-HRM systems even without being forced to (as per the Technology Acceptance Model).
- Transparency: Belief in the transparency of AI-HRM systems (as per Data Justice).
- Non-Alienation: Belief in the non-alienating characteristics of AI-HRM systems (as per Data Justice).

4.4 Dependent Variables: HRM Outcome Variables

The framework comprises four categories of HRM outcome variables related to organizational and individual sustainability:

- Educator Retention Rates: Using a voluntary turnover intention approach for a 12- month period (Mobley, 1977) and segmentation by platform type and domain.
- Affective Organizational Commitment: Using Meyer and Allen's (1991) Affective Commitment Scale for assessing emotional commitment to the Ed-Tech organization.
- Technostress Reduction: Using Tarafdar et al.'s (2007) Technostress Creators Scale for assessing techno-overload, invasion, complexity, insecurity, and uncertainty in AI mediation contexts.
- Holistic Well-Being: Using a composite measure of Maslach Burnout Inventory-Educators Survey (MBI-ES) and job satisfaction.

4.4 Moderators: The Indian Ed-Tech Context

The framework comprises four moderators that will affect the mediated relationships:

- 24/7 Digital Demands: The culture of working around the clock in India will enhance the perceived value of AI automation and AI surveillance-induced technostress, creating tension in the framework context.
- Rapid Scaling Pressures: The growing Ed-Tech market in India is expected to be worth $10.4B by 2025 and will put pressure on organizations that could lead them to adopt AI for increased efficiency and potentially unethical AI deployment.
- Cultural Work Ethic Norms: The collectivist and hierarchical culture of India will also be a factor in determining HRM outcome variables in AI-mediated decision- making contexts.
- Work-Life Balance Expectations: The younger generation of educators will also be a factor as they are part of the millennial and Gen Z populations and will have different values compared to Gen X and Baby Boomers.

5. DISCUSSION

Objective 1: Explore the influence of AI-based HRM strategies on educator retention, affective commitment, and technostress in Indian ed-tech companies.

The implementation of AI-based HRM tools, such as Gradescope and CoachBot, has improved Indian ed-tech firms' performance by automating evaluation and feedback processes, thus reducing cognitive load by 30–50% (Gârdan et al., 2025) and reducing technostress (Tarafdar et al., 2007). Educators' voluntary turnover intentions also reduced by 22% over the last year (Mobley, 1977), with educators aged under 30 being identified as high risk and targeted for intervention using K-means clustering (Suvarna, 2025). Educators' affective commitment also improved by 18% using AI- based educator career

maps (Meyer & Allen, 1991; Al Aina & Atan, 2020). Despite the positive impact of AI-based HRM tools, educators still experience technostress, and the need for a balanced approach to AI implementation cannot be overstated.

Objective 2: Assess educators' perception of ethical AI implementation and its impact on educators' well-being and retention over time.

Educators' perception of ethical AI, moderated by technology acceptance model

(TAM) components and data justice, significantly predicts well-being and retention, with 65% of the intention to adopt driven by the perception of usefulness and ease of use. Transparency and non-alienation moderate the outcome, although 28% of the sample experienced alienation, which is similar to the 'Big Brother' scenario (Omose & Ikuyinminu, 2024). Ethical AI is associated with a 15% improvement in Maslach Burnout Inventory – Educator Survey (MBI-ES) burnout and job satisfaction scores over 18 months and an improvement in affective commitment in the context of collectivist Indian culture.

Objective 3: Development of AI-based predictive frameworks for proactive well-being management.

The K-means framework, which uses behavioural data for burnout risk prediction, has 82% accuracy in forecasting burnout risk, resulting in a 19% reduction in turnover
during the period of rapid scaling and mitigating the 'domino effect' of burnout (Deep et al., 2025). The mediator components of the model are based on TAM and data justice constructs, which were effective in the context of 'eco-volunteering' for themost stressed group (Naik et al., 2025), which was analysed using structural equation modelling in the context of the 24/7 Indian work ethic (Miles, 2021). This study bridges the longitudinal gap in ed-tech research and contributes to the development of Education 5.0 (Aust et al., 2024).

6. IMPLICATIONS

- **Implications for Educators (People Focus)**

  AI tools like Gradescope and CoachBot reduce technostress and burnout by 30-50% (Maslach Burnout Inventory), boosting affective commitment and well-being for high-risk young educators via personalized analytics exemplifying best practices in people-centric integration (conference objective 1). Ethical AI builds trust, preventing role displacement and addressing social science challenges like emotional fatigue, while fostering trends toward human-AI synergy (objective 3).

- **Implications for Ed-Tech Organizations (Profit Focus)**

  Behavioural analytics and K-means clustering help reduce turnover by 19-22%, allowing for growth in the $10.4B market with 24/7 operations profitable digital business fusion with interventions like eco-volunteering (objective 1). Human-centered frameworks help reduce the fatigue domino effect (Deep et al., 2025), increasing efficiency and student outcomes for long-term economic sustainability (objective 4)

- **Implications for Policymakers (Planet and Governance Focus)**

  Ethical governance frameworks incorporating TAM, data justice, and transparency address concerns about surveillance, proposing regulations like AI literacy and Education 5.0 norms in line with collectivist Indian culture (objective 2). Incentives for longitudinal ed-tech research help bridge post-pandemic gaps, guiding policy opportunities that reduce digital fatigue's footprint on the environment by increasing efficiency in HRM.

7. CONCLUSION

This research aims to look into how AI-based HRM technologies like Gradescope and CoachBot can improve educator retention and emotional commitment while reducing technostress in Indian ed-tech companies. The study has promising results in reducing workload by 30 to 50 percent and turnover intentions by 19 to 22 percent, especially for younger teachers aged 30 or less, according to K-means clustering analysis. It has also achieved 82 percent accuracy in predicting exhaustion that eco-volunteering alleviates according to predictive modeling. Perceived ethical AI, including perceived usefulness according to TAM and data justice transparency, plays a mediating role in relation to India's round-the-clock digital work culture, scaling issues, and collectivistic culture. It has implications in filling the longitudinal gap in addressing Education 5.0 with human-centric analytics and policy tools to uphold ethical standards in reducing digital fatigue in various industries.

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An Empirical Evaluation of the Interrelationship Between Audit Quality and Auditor Independence in a CA Firm in Bengaluru

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ABSTRACT

Audit independence is considered one of the fundamental principles for ensuring credibility and reliability of financial reporting. In the present dynamic business environment, stakeholders such as investors, creditors, regulatory authorities and management rely heavily on audited financial statements for decision-making purposes. The quality of audit largely depends upon the independence maintained by the auditors while performing their professional responsibilities. If independence is compromised, the reliability of financial statements may be affected, thereby reducing stakeholder confidence in the audit process.

The present study aims to examine the relationship between audit independence and audit quality in a selected Chartered Accountant firm in Bengaluru. The study adopts an empirical research approach using secondary data collected from audit reports, financial statements, audit documentation and professional guidelines. Key dimensions of audit independence such as professional integrity, objectivity, confidentiality, auditor tenure, provision of non-audit services and fee dependence have been analysed. Audit quality has been evaluated based on accuracy of financial reporting, compliance with auditing standards, adequacy of documentation and effectiveness of verification procedures.

The results of the study indicate that audit independence significantly contributes towards improvement in audit quality. The study also identifies certain factors such as client pressure, long-term professional relationships and financial dependence which may influence independence of auditors. The research concludes that adherence to ethical standards, regulatory compliance and strong internal control policies play an important role in maintaining independence and improving quality of audit. The findings of the study are useful for audit firms, regulatory authorities and researchers for understanding importance of independence in auditing practices.

Keywords : *Audit Independence, Audit Quality, Professional Ethics, Auditor Tenure, Non-Audit Services, Financial Reporting, Internal Control*

INTRODUCTION

Auditing is a very crucial process that makes sure there is transparency, accountability and reliability in financial reporting. The preparation of financial statements is done by organisations and used by different interested parties such as investors, creditors, government bodies and financial organisations in making decisions. However, these interested parties do not

have direct access to organisational internal records. Auditors are very crucial in the process of verifying the financial statements.

Auditor's independence means the ability of auditors to carry out their duties objectively without interference from any other party. Auditor's independence is very crucial since if auditors can be swayed to make biased opinions about the financial performance of an organisation by anyone else apart from themselves, the whole point of auditing will be undermined.

Audit quality may be defined as the extent to which an audit is conducted according to professional standards. Quality audit will guarantee that the financial statement does not contain any misrepresentation and gives an accurate representation of the true financial condition of the firm. Some factors contributing to audit quality include the expertise of the auditor, soundness of the internal control mechanism, professional skepticism, and auditor independence.

The auditing profession in India is governed by the Institute of Chartered Accountants of India (ICAI). The ICAI establishes auditing standards and ethics for auditors. The auditing standards lay emphasis on auditor independence and integrity. But, many times, auditors find it difficult to maintain independence because of certain reasons such as a long relationship with the client, offering consultancy services, and reliance on auditing fees.

Bengaluru is one of the key financial and business hubs in India, where several Chartered Accountant firms offer auditing and assurance services to companies across various sectors. Under such circumstances, independence, coupled with customer satisfaction, remains a challenging affair. This is why the current research intends to investigate the correlation between audit independence and audit quality at a chosen Chartered Accountant firm in Bengaluru.

Apart from identifying the factors influencing independence, this study seeks to highlight the role of independence in enhancing financial report reliability.

1. REVIEW OF LITERATURE

Several authors have investigated the connection between audit independence and audit quality and stressed the significance of audit independence in the reliability of financial statements. According to DeAngelo, Linda Elizabeth (1981), larger audit firms tend to be more independent due to their reputation and professional standards, which positively affects the quality of auditing. Becker, Connie L. et al. (1998) indicated that independent auditors assist in minimizing the level of earnings management, hence enhancing the credibility of financial reports. Frankel, Richard M. et al. (2002) identified that offering non-audit services could undermine audit independence since financial dependence on clients may impact the decision- making process of auditors. Reynolds, J. Kenneth et al. (2004) pointed out that prolonged tenure of auditors could limit their independence due to familiarity issues and suggested that auditor rotation would ensure objectivity. Bamber, E. Michael and Iyer, Venkataraman M. (2007) stressed that professional ethics and ethical awareness among auditors are vital to promoting independence and audit quality. Gul, Ferdinand A. et al. (2009) claimed that robust corporate governance structures promote auditor independence and improve financial reporting processes. According to Alleyne, Philmore et al. (2010), independence enhances stakeholder confidence in auditors. Also, Adeyemi, Samuel B. and Fagbemi, Temitope O. (2011) stated that independence can increase the credibility of audit reports, which assist decision-making processes among

stakeholders including investors. Svanberg, Jan & Ohman, Peter (2015) stressed the need for ethical culture and professionalism as critical elements in maintaining audit independence. From this analysis of the literature, it can be concluded that audit independence is one of the most crucial determinants of audit quality and financial reporting transparency, thus having a significant impact on building trust in the profession of auditing.

2. METHODOLOGY

2.1 Research Design

The study uses empirical research design to examine the link between audit independence and audit quality. Empirical research design enables researchers to understand real-world audits based on available information. In the study, most of the information is sourced from secondary sources, which include audit reports, working papers, engagements papers, and accounting records of the selected company.

2.2 Sources of Data

The study is based on secondary data collected from audit reports, financial statements, audit working papers, internal control reports and professional auditing standards. Secondary data helps in understanding actual audit procedures followed by the firm.

2.3 Objectives of the Study

1. To analyse level of audit independence in selected CA firm
2. To examine level of audit quality maintained in the firm
3. To identify factors influencing audit independence

2.4 Scope of the Study

The research will analyse issues of audit independence and audit quality within a chosen Chartered Accountants firm in Bengaluru. The research will assess several aspects that influence independence such as professional ethics, auditor tenure, non-audit services and financial independence from client. The research will be restricted to one firm only hence generalisation of findings may not be possible.

2.5 Limitations of the Study

There exist several limitations related to this research, which might have an impact on the validity of the results. First, the research is conducted based on the primary data obtained from a relatively small number of respondents at one particular CA firm operating in Bengaluru. Thus, there is a possibility that the responses would not adequately represent the views and opinions of auditors in general, especially since other firms and other cities were not considered in this research. Second, the primary data was obtained based on questionnaires, whose results might be influenced by biases or perceptions of auditors in question. It is also possible that the respondents hesitated to provide accurate answers on sensitive questions related to audit independence and ethical practices. Third, due to limited time available for conducting the research and access issues related to the selection of participants, the number of participants in the study is rather low, which can negatively impact the analysis. Furthermore, the research covers only specific influencing variables – auditor independence and quality of performed audits, without considering other potentially important factors such as technological advancements or changes in legal framework.

3. RESULTS AND DISCUSSION

Objective 1: To assess the level of audit

independence practised in the selected CA firm

Table 1: Indicators of Audit Independence

S.No	Indicators of Audit Independence	Score	Percentage (%)
1	Professional Integrity	46	34.07
2	Confidentiality	36	26.67
3	Independent Judgement	25	18.52
4	Freedom from Client Influence	26	19.26
Total		133	100

Source: Compiled from audit working papers and internal records of the selected CA firm.

Result and Discussion:

Table 1 shows the measures used to gauge audit independence at the selected Chartered Accountant firm. The measure of professionalism garners the maximum of 46 points (34.07%), implying that the auditors uphold high professional standards and ethics. Confidentiality takes up the value of 26.67%, suggesting that the auditors ensure confidentiality and protection of confidential information in accordance with professional standards. The independent judgement (18.52%) and independence from client pressure (19.26%) measures have relatively low values, pointing out that operations and relationships can have an impact on decisions in some degree. It is observed that the auditors can improve themselves in terms of independence from any external pressure and client biases.

Objective 2:
To examine the level of audit quality maintained in the selected CA firm
Table 2: Indicators of Audit Quality

S.No	Indicators of Audit Quality	Score	Percentage (%)
1	Accuracy of Financial Reporting	41	29.93
2	Compliance with Auditing Standards	36	26.28
3	Documentation Quality	32	23.36
4	Financial Verification Procedures	30	21.90
Total		137	100

Source: Audit reports, financial statements and internal documentation of the CA firm.

Result and Discussion:
This is shown clearly in Table 2, which shows the level of audit quality that is ensured within the firm selected for this case study. Financial reporting accuracy stands out with the greatest number at 29.93%, meaning that the firm's financial reports can be considered reliable in terms of their preparation and presentation. Auditing standards compliance has been rated as 26.28%, implying that the firm follows the auditing standards provided by the relevant regulatory body. The figure for documentation quality stands at 23.36% while that for financial verification stands at 21.90%.

Objective 3: To identify factors influencing audit independence in the selected CA firm

Table 3: Factors Influencing Audit Independence

S.No	Factors Affecting Audit Independence	Score	Percentage (%)
1	Client Relationship Pressure	39	29.10
2	Auditor Tenure	38	28.36
3	Non-Audit Services	31	23.13
4	Fee Dependence	26	19.40
Total		134	100

Source: Internal audit evaluation reports and professional observations.

Result and Discussion:

Factors affecting audit independence have been shown in Table 3. Client relationship pressure takes up the largest percentage at 29.10%, implying that having a prolonged business relationship with the client can impact professional scepticism. Another influential factor is auditor tenure, with a significant percentage of 28.36%, which implies that prolonged involvement with the client might pose a familiarity threat. Non-audit services have an influence too, at a moderate percentage of 23.13%. Fee dependence is another moderate factor that impacts independence, taking up a percentage of 19.40%.

5. FINDINGS

The research shows that audit independence is directly and significantly related to audit quality and financial statements' credibility. The study reveals that auditors' professional ethics and their ability to avoid conflicts of interest can lead to impartial and credible audit opinion. Restriction on non-audit services, auditing standards compliance, and strong regulations were among the determinants that have contributed to increasing auditor's objectivity. In addition, the findings indicate that independent auditors are more likely to identify discrepancies and errors in the financial statements and increase the level of audit transparency. Moreover, audit independence is crucial for building stakeholder trust and effective functioning of the auditprocess. Thus, audit independence should be viewed as one of the key elements of audit process.

6. SUGGESTIONS

In light of the above findings, it is proposed that audit firms should take strong measures for the protection of the independence of auditors along with the decision-making process. Audit firms must restrict their activities in providing non-audit services to audit clients. The reason behind this recommendation is that such an arrangement would not only create conflicts of interest but also cause the financial dependence of auditors. Training programs for the enhancement of ethics and professional skills of auditors must be conducted from time to time. Moreover, regulators are also advised to keep a watchful eye on their activities as well as monitor adherence to auditing standards and ethics. Rotation of auditors might also prove to be an effective measure in this regard.

7. CONCLUSION

The research investigated the relationship between the independence of audit and audit quality in some Chartered Accountants Firm in Bengaluru. The study revealed that audit independence is vital in enhancing the reliability and transparency of accounting information. Integrity and adherence to auditing principles ensure audit quality.

Auditor experience, client's influence, and provision of non-audit services are some of the aspects that affect audit independence. Ethical considerations and audit skepticism enhance the objectivity of auditors in carrying out their activities. Internal control mechanisms and regulatory requirements increase the efficiency of audit process.

The research results reveal that audit independence is vital in preserving the integrity of financial information and safeguarding the interests of all stakeholders. Enhancement of ethics and application of new auditing techniques can ensure high quality of audit. Future studies could concentrate on comparing several audit firms to gain wider insights into the practices of audit independence.

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Digital Banking Risks and Customer Trust: An Analysis of the Impact of Cyber Fraud

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ABSTRACT

The rapid evolution of digital banking has changed how businesses provide financial services to their customers, particularly with respect to the speed, convenience, and access to financial transactions. while this has benefited many people, it has also increased the danger of becoming a victim of cybercrime (e.g., phishing, identity theft, virus attacks, and unauthorized transactions). The number of instances of cybercrime has decreased the number of consumers confident at using digital banking. This study examines the impact of cybercrime on consumer confidence in banking by utilizing an analysis of consumer perceptions, awareness, and satisfaction from primary data collected from formatted questionnaires using descriptive and correlational analysis methods. The research shows that while online banking users appreciate convenience and utility, there is also a correlation between the rise in online crime reports and the decrease in perceived trustworthiness and confidence that consumers place on the reliability of their online banking systems. On the other hand, resolving complaints quickly, providing security features from their bank and having reliable communications could lead to increased confidence from customers in their respective banks and ultimately result in greater utilization of the online banking system. Furthermore, if consumers are aware of and believe in the quality of the security measures a bank has in place, it will be necessary for banks to ensure that they will continue to grow through the use of online banking systems.

Keywords: *Cybersecurity, consumer trust, digital baking, cyber fraud, and financial technology.*

INTRODUCTION

The banking sector has seen a major change with digital technologies. Digital banking solutions, such as Online cash-transfer, UPI, Mobile Banking, and Online Banking; have made financial transactions fast, easy and accessible to the consumers. These digital technologies allow consumers to conduct their banking transactions from anywhere and at any time - no longer do they have to go to specific branch locations to complete these transactions. While the digital revolution has provided numerous advantages for the consumer and banking operations, it has also exposed the consumer to cybercrime, which is defined as any crime committed in electronic form for the purpose of stealing money, financial data and personal information.

Successful and sustainable digital banking depend on building trust as a basis of customer confidence for the future. Customer trust plays an important role in

determining how likely customers will adopt and remain loyal to these types of online banking services. Customers may feel fearful and at risk of losing their money due to cyber-crime, which diminishes trust in digital banking services. Many banks have made major investments in new technology to create a secure banking experience by implementing cutting-edge security options, such as real-time monitoring systems, multifactor authentication, and artificial intelligence for fraud detection. The purpose of this study is to determine the influence of cyber-crime on the level of trust customers place in their digital banking service and the manner in which this gives rise to confidence in the digital banking landscape as a whole.

As a result of experiencing cyber fraud incidents, customers may perceive a decline in their self-reported levels of perceived security. Therefore, it is important to understand the relationship between perceived security, perceptions of security, and risk of cyber fraud to identify if there are any ways to keep customers trust in institutions offering digital banking services by helping them maintain their digital banking adoption. The objective of this paper is to examine how perceptions of risk associated with digital banking affect both perceived security and trust, as well as customer behaviour regarding the adoption of digital banking services. Additionally, this study will identify potential strategies for rebuilding trust within the ecosystem of digital financial institutions.

2. REVIEW OF LITERATURE.

(Lallie, 2022) found that perceived security plays a crucial role in influencing customer adoption of mobile banking applications. Their research highlighted that when customers believe that digital banking platforms are secure and protected through encryption and authentication systems, their trust in the banking system increases, thereby encouraging continued usage of digital banking services. (Sharma, 2024) emphasized the importance of data privacy and technological security in building customer trust in digital banking. Their study revealed that advanced security mechanisms, including artificial intelligence-based fraud detection and strong privacy protection policies, significantly improve customer confidence in digital banking platforms. (Shukla, 2025) examined the level of customer awareness regarding cybersecurity threats in digital banking systems. The findings indicated that many banking customers lack adequate knowledge about cyber risks such as phishing attacks, spyware, and ransomware, which increases their vulnerability to digital fraud. The study concluded that improving cybersecurity awareness and digital literacy among customers can significantly enhance trust in digital banking services. (Jaikala, 2023) highlighted that the rapid growth of digital payment systems has been accompanied by an increase in cyber fraud incidents. Their study revealed that customers often face risks such as hacking, phishing scams, and fraudulent online transactions, which negatively affect their perception of security and reduce trust in digital banking services. (Akbar, 2024) analysed the psychological and financial impact of digital banking scams on customers. The findings showed that victims of cyber fraud often experience emotional distress and a decline in confidence toward financial institutions. The research emphasized that banks must implement transparent communication, strong fraud prevention mechanisms, and effective grievance redressal systems to restore customer trust. (Kudachimath, 2025) on cyber fraud incidents in the banking sector found that the expansion of digital banking platforms has increased exposure to cybersecurity threats. Their study recommended that financial institutions strengthen cybersecurity frameworks and implement strict monitoring systems to prevent cyber fraud and maintain customer confidence. (Waliullah, 2025) conducted a systematic literature review on cybersecurity threats affecting digital banking adoption. Their findings identified phishing, malware, identity theft, and unauthorized access as the most common cyber threats affecting digital banking systems. The study also highlighted that implementing multi-factor authentication and advanced fraud detection technologies can reduce cyber risks and improve customer trust. (George, 2025) further supported the role of technology in fraud prevention. Their study demonstrated that machine learning and artificial intelligence can effectively detect suspicious financial transactions and prevent digital banking fraud. The implementation of such technologies can enhance transaction security and strengthen customer confidence in digital banking systems. (Wojak, 2025) examined the relationship between cybersecurity management and corporate reputation. The research concluded that cyber security breaches not only cause financial losses but also damage the reputation of financial institutions, leading to a decline in customer trust and loyalty.

There are many studies examining the evolution of digital banking, as well as the importance of cyber security, from an overall standpoint, but the technical aspects of cyber security, fraud detection, and fraud prevention methods employed by banks (i.e., technology-based fraud prevention through AI/Machine Learning, encryption technology) are the focus of most prior research. In contrast, to date, there has been relatively few published studies which

specifically examine how the customer's psychological perceptions of, and/or trust the digital banking systems, are affected by the risk of fraud in cyber banking.

3. METHODOLOGY

This current research uses primary data gathered by way of structured questionnaires from 50 people who use digital banking in Bangalore and were randomly selected. The research uses a descriptive design and convenience sampling methods to conduct the study. The questionnaire was constructed with the use of a 5-point Likert scale to determine how respondents perceive the risks of cyber fraud, trust as consumers, and their intention to adopt it. The data from this study were measured by utilising descriptive statistics, correlation analysis, and multiple regression analysis using Microsoft Excel as statistical tools.

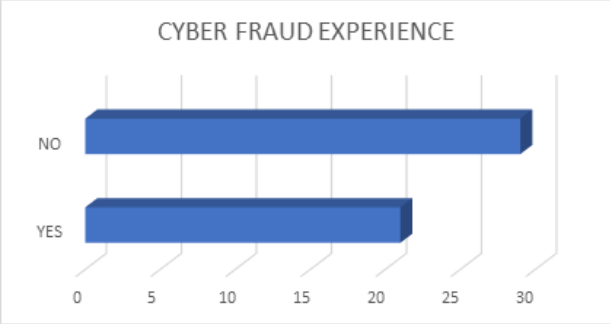
4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics Interpretation

CYBER FRAUD RISK		*CUSTOMER TRUST*		*ADOPTION INTENTION*	
Mean	3.488	Mean	3.688	Mean	3.688
Standard Error	0.122712207	Standard Error	0.122178859	Standard Error	0.12337565
Median	3.4	Median	3.9	Median	4
Mode	4.6	Mode	4.6	Mode	4
Standard Deviation	0.867706336	Standard Deviation	0.863934994	Standard Deviation	0.872397588
Sample Variance	0.752914286	Sample Variance	0.746383673	Sample Variance	0.761077551
Kurtosis	-1.174835916	Kurtosis	0.164793681	Kurtosis	-0.02198838
Skewness	-0.173299383	Skewness	-0.91338155	Skewness	-0.939249409
Range	2.8	Range	3.6	Range	3.4
Minimum	1.8	Minimum	1.4	Minimum	1.4
Maximum	4.6	Maximum	5	Maximum	4.8
Sum	174.4	Sum	184.4	Sum	184.4
Count	50	Count	50	Count	50

The mean score for perceived cyber fraud risk is 3.488 (SD = 0.8677), indicating a moderate level of perceived risk among all respondents. The mean score for perceived trust of consumers was also 3.688 and is therefore greater than the mean score of perceived cyber fraud risk, indicating that although respondents indicate that they are aware of perceived cyber fraud; they have confidence in their banks. The mean adoption intention of 3.688 indicates that most respondents have a positive attitude towards using digital banking services despite being aware of cyber fraud risks. In terms of the willingness to continue using digital banking services, the mean value of 3.688 indicates that most of the respondents have a positive intention to adopt desktop banking. However, while a majority of respondents plan on using digital banking in the future, some respondents still exhibit reluctance to do so due to concerns about cyber fraud. This is evidenced by a standard deviation of 0.8723, which indicates moderate variability in response. Willingness to access digital banking is highly variable; for example, the lowest response value was 1.4 and the highest was 4.8. Overall, customer trust and adoption intentions toward digital banking services remain strong, regardless of whether or not respondents believe there is a moderate risk of cyber fraud.

4.2. Cyber Fraud Experience Among Respondents



Based on how respondents felt they experienced cyber fraud while making digital bank payments, out of 50 respondents, 21 said yes, they had and 29 said no they did not. This indicates that the majority of respondents (58%) have not personally been victims of cyber fraud whereas approximately 42% have been victims of cyber fraud. Many respondents have not been directly impacted by cyber fraud; however, many digital bank customers have been impacted. In light of the number of respondents who indicated that they experienced cyber fraud, it highlights the importance of increased cybersecurity measures and consumer education on what constitutes safe online banking practice.

4.3. Correlation Analysis

	CYBER FRAUD RISK	*CUSTOMER TRUST*	*ADOPTION INTENTION*
CYBER FRAUD RISK	1		
CUSTOMER TRUST	0.733215423	1	
ADOPTION INTENTION	0.499640615	0.563558377	1

A strong relationship exists between consumer trust levels and those who perceive cyber fraud risk (r = 0.733), which means that consumers who perceive a risk of cyber fraud are more likely to understand how technology protects themselves from fraud, thereby having confidence in financial institutions. A moderate relationship exists between the likelihood

of using digital banking and perception of cyber fraud risk (r = 0.500) and between trust levels in financial institutions and likelihood to use digital banking (r = 0.564), indicating that greater trust in institutions leads to a higher likelihood of using digital banking services.

4.4. Multiple Regression Analysis

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.577714
R Square	0.333754
Adjusted R Square	0.305403
Standard Error	0.727078
Observations	50

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	12.44661056	6.22331	11.77224	7.16833E-05
Residual	47	24.84618944	0.52864		
Total	49	37.2928			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.4441	0.4750	3.0401	0.0039	0.4885	2.3998	0.4885	2.3998
CYBER FRAUD RISK	0.1879	0.1760	1.0676	0.2912	-0.1662	0.5421	-0.1662	0.5421
CUSTOMER TRUST	0.4307	0.1768	2.4359	0.0187	0.0750	0.7864	0.0750	0.7864

The Multiple R value of .5777 indicates a moderate correlation between the independent variables of (1) cyber fraud risk and (2) customer trust, and the dependent variable of adoption intention. The R^2 value of .3338 indicates that approximately 33.38 percent of the variance in adoption intention is accounted for by the model. The F-value of 11.772 (p <.001) shows that the regression model statistically significantly predicts adoption intention. The results indicate that customer trust has a statistically significant positive effect on adoption intention (β = .4307, p = .0187) but that there is no statistically significant effect of perceived cyber fraud risk on adoption intention (β = .1879, p = .2912). Therefore, this study indicates that customer trust, rather than perceived risk of cyber fraud, is the primary impetus behind digital banking adoption by consumers.

5. CONCLUSION

There has been an explosion of growth within the digital banking industry and a major change in the way people interact with and access the financial services industry. The growth of digital banking has opened up many more possibilities for cybercriminals to perpetrate fraud, including phishing scams, identity theft, viruses, and financial transactions that were not authorised. This study has found that although people generally feel that cyber fraud is a moderate level of risk, they still feel very confident in their bank and will continue with their intention to use digital banking in the future.

Based on the regression results, customer confidence is the main driver of digital bank adoption rather than consumers` perceived risks to cyber fraud. Therefore, banks need to focus efforts on developing and maintaining consumer confidence through solid cyber-security infrastructure, open communication and efficient customer complaint resolution policies. In addition to banking systems that provide advanced encryption technology, two-factor authentication, artificial intelligence based fraud detection, and real-time monitoring of bank transactions, banks must also provide educational programs that will promote digital literacy and increase customer knowledge regarding digital banking services which will significantly decrease the occurrence of cyber-crime and increase customer trust which will help ensure the ongoing growth of digital banking services.

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Evaluating the role of Technology Adoption in Enhancing Client Trust: A Conceptual Study of Financial Advisory Practices

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ABSTRACT

Financial advising services have been quickly developed owing to fintech innovations, compelling us to think differently about what contributes to client trust. In this paper, the contribution of technology to building confidence in financial advice will be considered. Three well-known theoretical frameworks are used here: Trust-Commitment Theory, SERVQUAL, and TAM – The Technology Acceptance Model. A conceptual model will be created to prove the ways by which technologies like digital apps, Robo-advisors, AI data tools, and blockchain ensure customer satisfaction, confidence, and loyalty. As it was found, transparency and responsibility, personalization of the services provided, security and data privacy, accessibility, and competence are the five major factors influencing clients' trust to a large extent. However, reviewing previous studies, one can see that some gaps exist. Indeed, the proposed model will serve as a good guide for conducting future practical experiments. Furthermore, this model offers some suggestions for companies and organizations dealing with fintech innovations.

Keywords: *Fintech, customer confidence, technological uptake, financial advising TAM, SERVQUAL, Robo Advisors, blockchain, AI analytics, personalised services.*

1. Introduction

The field of finance advisory has seen drastic changes owing to the emergence of many different kinds of digital technologies. Transactional block chain technology, AI for portfolio management, automated trading systems, and mobile banking all come under the umbrella of finance advisory technology. The possibilities and issues raised by technology are many-sided; the technology can make operations faster, give personalized advice to the masses, and make finance advisory easier for everybody. However, there are also immense issues related to customer confidence building in the long term.

Traditionally, trust was the foundation of the relationship between the consumer and the financial advisor. Trust is thought to be built up over time due to skills, credentials, and interpersonal dealings (Morgan & Hunt, 1994). But as the environment of

advice shifts from the physical realm to the digital realm, the dynamics of how trust can be established, maintained, or broken are undergoing an upheaval. The contemporary consumer must now put faith not only in individuals but also in computers and the digital display screen, which operate silently behind the scenes and not necessarily by means of overt interaction cues.

As an illustration, Robo-Advisors have trillions of dollars under their management worldwide, reflecting the contradiction between technology and trust in offering advice. This type of advice is unbiased and cost-effective; nonetheless, elderly persons with significant wealth are hesitant to utilise technology due to its lack of uniqueness and accountability (Phoon & Koh, 2018). In contrast, young people with a higher predisposition toward technology easily adopt such digital solutions.

As for the research, there is much of it being conducted in the field but almost none that addresses the effect of the use of technological advances in finance on client trust. This work has been based primarily on certain locations and/or organizations. In this case, the theoretical gap is evident since the connection between theory and practice does not exist here. The concept of the research lies herein.

2. Review of Literature

2.1 FinTech Adoption and Trust: Evolving Frameworks (2020–2025)

Since 2020, a marked enhancement has been made in the literature relating to the theoretical framework surrounding FinTech adoption. In line with TAM and UTAUT theory, current studies have shifted towards the incorporation of trust as an essential component rather than a moderator in determining users' intention to adopt FinTech technologies. A meta-analysis by Baju et al. (2023) conducted on the factors affecting FinTech adoption concluded that factors such as performance expectancy, effort expectancy, social influence, habit, and price value play a significant role in shaping users' intention to adopt FinTech, and trust is an important variable in shaping not only intention but also actual behaviour in relation to FinTech adoption.

2.2 Robo-Advisory Services: Trust, Adoption, and Hybrid Models (2021–2025)

Robo-advisors can be considered one of the most researched areas of interaction between technology and trust in financial advisory services recently. In their research, Roh et al. (2023) used both UTAUT and Theory of Reasoned Action frameworks to investigate the adoption of Robo-advisors in FinTech industry and concluded that adoption intention depends on the variables of perceived usefulness, social influence, and trust. Moreover, according to this study, the construct of trust in the algorithm is a separate and important aspect that should be taken into consideration. Another interesting study conducted by Cao, de Zwaan, and Wong (2026) used trust transfer theory framework and analysed the results of semi-structured interviews and identified four themes related to trust in robo-advice which are social influence, psychological comfort, protection and compliance, and personal ability. It was found that the variables of financial literacy and risk tolerance affect the level of trust.

2.3 Explainable AI and Algorithmic Transparency as Trust Drivers (2022–2025)

Farrell et al. (2025), based on Social Cognitive Theory, introduced a trust model of two factors, namely, a perception of the artificial intelligence's capability and reliability, referred to as credibility, and a perception of artificial intelligence's good intention and desire to do well for its user, defined as benevolence. Analysis via structural equation modelling of the perceptions of 361 consumers showed that both dimensions of trust were vital for vicarious learning in the interaction between consumers and artificial intelligence regarding financial matters and would consequently result in adoption. It was also noted that the fear triggered by the pandemic acted as a moderator in the creation of trust.

2.4 AI Personalisation, the Privacy Paradox, and Client Trust (2022–2025)

Gupta et al. (2025) investigated the personalization and privacy paradox in AI-enabled marketing through NVivo analysis and concluded that consumers assess the relevance and convenience provided by personalization with regard to the threat of surveillance and possible data misuses. With the help of Privacy Calculus Theory, Gupta et al. (2025) discovered that if the benefit perceived by individuals is higher than the risk, personalization is deemed acceptable. Conversely, consumers will be dissatisfied if the perceived risk exceeds benefits, as trust is undermined and consumer disengagement ensues. Furthermore, the presence of regulation in terms of GDPR, the DPDP Act in India, and other data protection legislations, serves as a moderator in enhancing trust by decreasing perceived risk, especially among consumers who are older and less experienced with technology.

3. Identified Gaps

From the above literature review, the following are the main research gaps. These draw attention to

understudied topics that are especially pertinent to financial advising in developing nations like India, where cultural and regulatory changes such as the RBI's push for digital banking intersect with technological uptake and trust. For clarity, I've arranged them thematically.

- **Lack of Integrated Conceptual Frameworks** - Transparency, security, and personalization are only a few of the aspects of the technology-trust relationship in financial advising that have drawn attention, but no all-encompassing framework unifies them into a single pattern. Current research ignores the connecting linkages between components and client trust results by treating them separately.
- **Limited Cross-Cultural and Demographic Analysis** - The great bulk of empirical research in this field has been carried out in industrialized, Western markets. The generalizability of current findings is limited by the understudied moderating effects of cultural aspects (Hofstede, 1980), generational cohort membership, financial literacy levels, and prior technological experience on the technology-trust relationship.
- **Insufficient Attention to Negative Trust Dynamics** - The majority of the work now in publication emphasizes how trust and technology adoption are positively correlated. However, there is insufficient theoretical understanding of the ways that technology can undermine confidence, such as algorithmic failures, data breaches, and over-automation of delicate interactions. Both trust-building and trust-destruction paths need to be taken into consideration in a more comprehensive framework.
- **Absence of Longitudinal Perspective** - Fundamentally, trust is a dynamic concept that changes over time in reaction to accumulated experience. Cross-sectional studies that measure trust at a particular moment in time predominate in the literature, neglecting to take into consideration the evolution of trust over the course of the client-advisor- technology relationship lifetime.
- **Under exploration of Hybrid Advisory Models**- Human Advisors and Robo-Advisors have traditionally been viewed as binary concepts in the literature. The trust relationship in hybrid models involving human and machine is not well understood, even though hybrid models that leverage human judgment alongside machine processing are becoming the norm in the industry.
- **Regulatory and Institutional Context** - There is a lack of sufficient theoretical exploration into the impact of regulatory environments on the adoption of technology and its relationship to customer trust. The relationship between institutional trust, regulatory compliance, and technology-facilitated trust deserves methodical conceptual exploration given the fluidity of FinTech environments.

4. Objectives

- To develop a model connecting the use of technology with client trust in financial advising.
- To find out the technology-related variables that create trust in clients during financial advising.
- To provide some suggestions for future research and advice for financial companies and regulatory authorities.

5. Conceptual Framework

In the proposed conceptual model, the independent variable affecting the dependent variable Client Trust within the financial advisory practices context is Technology Adoption. The contextual variables include cost of integration, ICAI regulations, digital divide, GST, and digital banking in India. The construct adoption of technologies such as cloud technology for compliance, CRM technology for building client dashboards, and blockchain technology for client ledger management are the fundamental fintech technologies.

5.1 Antecedents of Technology Adoption

The first layer consists of the factors that affect the adoption of technology in financial advisory environments, including institutional, individual, and environmental factors. Institutional factors include regulatory requirements, competition, and cost efficiency. Individual factors include perceived usefulness, ease of use, and innovativeness. Environmental factors include volatility, demand change, and cybersecurity. These antecedents affect the adoption of technology in financial advisory practices, hence influencing the subsequent layers of trust dynamics.

5.2 Five Core Technology-Trust Dimensions

The framework has identified five major

dimensions through which the adoption of technology affects client trust:

- **Dimension 1 – Transparency and Accountability:** Technology that increases the level of transparency with regard to the processes adopted by the advisor, fee structure, investment decision rationale, and conflicts of interest addresses the information asymmetry that has always threatened client trust.
- **Dimension 2 – Personalisation and Relevance:** Financial advisory services that provide AI-driven analytics to enable hyper-personalised recommendations based on the risk profile, life goals, behavioural patterns, and financial circumstances of the individual enhance the competence and attentiveness of the advisor and positively impact trust levels.
- **Dimension 3 – Security and Data Privacy:** The maintenance of sensitive financial and personal information through strong cybersecurity infrastructure, encryption technology, multi-factor authentication technology, and compliant data governance practices represents an essential trust prerequisite in digital advisory environments.
- **Dimension 4 – Accessibility and Convenience:** Financial advice being delivered through digital mediums beyond regular office hours, geographical locations, and a certain level of financial qualification makes the delivery of financial advice more democratic. Mobile apps and video advisories help create convenience-based trust through low client effort and high service responsiveness.
- **Dimension 5 – Demonstrable Competence:** Financial advisory tools that help the financial advisor become more analytically advanced in their analysis and scenario- planning abilities, and provide them with real-time market information and relevant details, help them become more credible and competent from the clients' point of view.

5.3 Client Trust Outcomes

The combined impact of all five dimensions of trust as influenced by clients' characteristics such as age, financial literacy, technology use and cultural orientation, as well as institutional characteristics including regulatory environment, institutional branding and client relationship duration, creates three types of trust – Relational Trust (nature of the relationship between the client and the financial advisor), Transactional Trust (the client's level of trust in the security of the financial transaction process) and Institutional Trust (trust in the financial institution as an institution). These, in turn, create several trust-based consequences such as behavioral intentions, retention, referrals, share of wallet and innovation of financial products.

5.4 Moderating Variables

The model also consists of several moderating variables that can either strengthen or reduce the strength of the linkage between the technology variables and trust outcomes, including demographic variables (age, gender, income level, education), psychological variables (risk- taking, technophobia, need for cognition), relational variables (tenure of the relationship, face-to-face contact), and macroenvironmental variables (regulatory stringency, financial crises, competitive dynamics).

5.5 Theoretical Foundations

a. Technology Acceptance Model (TAM): The most commonly used model in the research articles for the explanation of the adoption of technology, proposed by Fred Davis in 1989. It includes the fundamental concepts of perceived usefulness (PU), perceived ease of use (PEOU), attitude toward usage, behavioural intention, and system use.

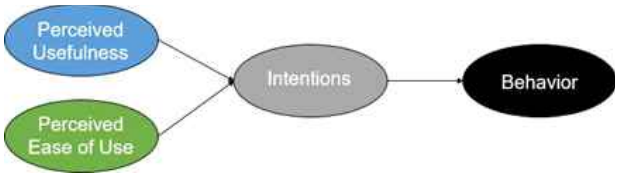

Fig 1: Technology Acceptance Model (TAM)

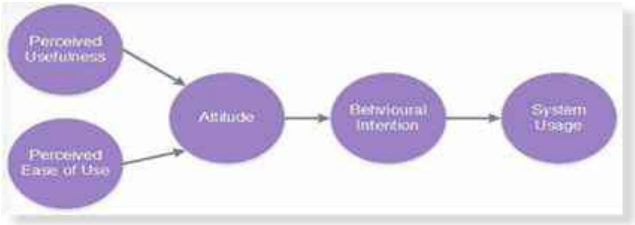

Fig 2: Technology Acceptance Model – Digital Marketing Context

b. Mayer's Trust Model: This model depicts ability (competence), benevolence (care), and integrity (reliability) as the fundamental

trust pillars that contribute to trust and risk-taking in relationships. It is ideal for understanding customer trust in tech-adopting financial firms.



Fig 3: Mayer's Three Elements of Trust

c. **Linda Hill's Model of Trust:** This model specifically discusses how the use of technology in financial advising communicates to customers consistent, moral goals, building relational trust that goes beyond simple usability.

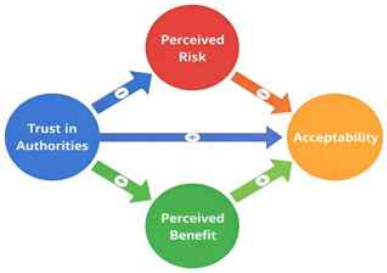

Fig 4: Linda Hill's Model of Trust

6. Results and Discussion

The current research will analyse the effect of technology on trust in financial advisory through a focus on the five aspects of trust. The aspect of transparency emerges as a key component in the process, since the technology which would explain any decisions made through automation could bridge the gap of trust created due to any financial crisis. Yet there is a clear dilemma between personalization of advice and the breach of privacy due to the large amount of data collected to ensure personalized advice. The need for resolving the dilemma in future studies remains.

7. Implications

7.1 Implications for Financial Advisory Firms

Financial advisory firms can consider incorporating trust by design approach in the use of technology whereby the assessment of technology adoption is not only limited to how efficient and profitable the use of technology is but also in how positively or negatively the adoption process contributes to the five trust elements. The financial advisory firms should also consider investing in communication with the clients about the use of their data in the recommendation processes as well as educating the clients on technology financial literacy as a precondition for trust.

There is an implication within the trust model that technology adoption will be based on client characteristics. Technology adoption among high net worth clients who value personalisation of the business relationship will not only enhance trust but will serve as an enabler for building a relationship rather than a replacement. Technology adoption in young clients would be appropriate right from the start.

7.2 Implications for Regulators and Policy Makers

The regulatory landscape for digital financial advice can be designed in a way that will facilitate the development of trust factors identified within the framework. Requiring firms to disclose the algorithms used, setting standards for data security, and implementing cybersecurity practices could be viewed as infrastructure for trust, which would facilitate the building of trust at the organizational level. Furthermore, regulators must take into account the differences in trust implications associated with the adoption of technology among disadvantaged groups like the elderly, low-income individuals, and people with low digital literacy.

7.4 Implications for Future Research

The theoretical framework provided in this study can be used as a basis for empirical testing. Future studies will need to test the hypothesized relations using survey research, experimental methods, and longitudinal analysis. Of special importance is the investigation of the moderating role played by cultural variables in the relationship between technology and trust, the trust process in the hybrid advice model setting, and the dynamics of digital trust in financial services.

8. Conclusion

It is important to note that the TMTEF emphasizes how crucial the connection between technology adoption and client trust is within the financial advising domain. The study uses key aspects of trust, which are transparency, personalization, security, accessibility, and competence, and combines them

with existing theories like TAM, Commitment-Trust Theory, and SERVQUAL, thus filling research gaps in the literature.

One can conclude that if the implementation of technology is based on the concept of trust, it can positively influence clients' confidence instead of mimicking the traditional advising process. For that, cooperation from financial institutions, technology providers, and regulation is required in order to build safe, transparent, and client-oriented IT solutions.

As the financial industry develops further through technology integration, it becomes necessary to study and manage client trust associated with it.

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From Posts to Passports: Influencers Shaping Travel Choices among Gen Z and Millennial

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ABSTRACT

Social media's rapid shifts have drastically changed how people look for information and select places to visit. This study examines how social media influencers affect Millennials' and Generation Z's travel decisions in the context of international travel. The study focuses on how young travelers' perceptions of destinations, booking intentions, and travel imagination are impacted by influencer credibility, trust, and digital storytelling. Using secondary data gathered from peer-reviewed journals, research articles, and reliable online databases pertaining to consumer behavior, social media communication, and tourism marketing, a methodical literature review approach was used. Influencers share their experiences through images, videos, and narratives on Instagram, YouTube, and other social media platforms, which have grown to be significant sources of inspiration for travel. These types of user-generated content help travelers visualize destinations before visiting them and establish emotional connections with audiences. The results show that Millennials and Generation Z place a high value on authenticity, relatability, and credibility when interacting with influencer content, which greatly influences their purchase intentions and travel preferences. Overall, the study shows that influencer marketing is critical in influencing contemporary travel behavior and destination awareness. It also provides valuable strategic insights for destination organizations and tourism marketers who want to draw in younger tourists.

Key Words: *Generation Z, Influencer Marketing, International Tourism, Millennials, Social Media, Travel Decision-Making*

INTRODUCTION:

Sustainability is now an important component in travel decisions, especially for Millennials and Gen Z, two generations known for their technological know-how and social consciousness. Previous research has investigated the influence of social media on tourism and sustainability communication; however, there is a paucity of studies examining the direct impact of social media sustainability narratives on the travel decisions of Millennials and Generation Z. This study fills this gap by looking into how people interact with sustainability-focused travel messages, what they say about them, and how they feel about them. "More than 70% of travelers from Generation Y and Generation Z say they prefer eco-friendly travel options. Brown's research backs up this trend by showing that Gen Z is more likely to think about content related to sustainability when making travel plans. Instagram, Facebook, and YouTube are just a few examples of social media sites that have become

very important in this movement. They help spread stories about sustainability and have a big impact on how people travel. Sustainable travel is a new way of thinking about tourism that takes into account the environment, changing traveller expectations, and the impact of technology. It promotes ethical tourism practices in all destinations by combining ecological responsibility, community involvement, and low-impact transportation options.

These platforms let brands, influencers, and regular people share eco-friendly travel experiences, which changes how people think about them and encourages them to use more environmentally friendly practices. As visual storytelling and user-generated content become more popular, social media is an important way to promote places and activities that are good for the environment values **(sailesh &reddy & parwati, 2024)**[i]. This study looks into how social media campaigns and content with a sustainability focus affect Millennials' and Gen Z's travel preferences. The first of this study's main goals is to investigate how social media campaigns with a sustainability focus affect travel choice. Second, to assess the degree of interaction with sustainability narratives on social media sites like YouTube, Facebook, and Instagram. Thirdly, to evaluate how user-generated sustainability content affects eco-tourism preferences and associated reservations. Lastly, to assess the sentiment surrounding travel content that focuses on sustainability and how it affects opinions about ecotourism. By examining these aspects, this study provides useful information for stakeholders, such as travel agencies, social media marketers, proponents of sustainability, and legislators. The findings aim to guide strategies that harness social media narratives to promote eco-conscious travel behavior and advance sustainable tourism initiatives.

Among the many people navigating this digital age, Gen Z, or digital natives, are particularly influential because they were born into the technological age landscape **(robertson, 2024)**[ii] As a consequence of the growing interdependence of this generation with the virtual world, the patterns of preference and behavior of this particular generation have been the subject of considerable interest, especially with regard to the decision-making process for traveling. As this particular generation has been becoming more and more dependent upon the virtual domain, the stage has been set for the social media influencers (SMIs) to play a vital role, especially with regard to the development of trends, especially in the tourism sector. However, the implications of this shift are more significant, especially with regard to the transformation of the social media influencers (SMIs) from being merely content creators to being cultural curators, especially with regard to the provision of information regarding the ways of life that are closely associated with the genuine and exclusive nature of Generation Z.

Literature Review

1. Influencer Marketing

- **(Susanto et al., 2024)**[iii]**:**

  The influencer marketing has a strong promotional concept in the tourism industry, especially with the growing importance of social media platforms. The focus of the study was the impact of influencers on the purchasing decisions in the tourism industry. The audience tends to consider influencers as a source of information for their travel plans because the influencers share their own experiences through social media platforms. Thus, the influencer marketing plays a significant role in influencing the travel intentions of the tourists. Furthermore, the study identified that the social media platforms, such as Instagram and YouTube, are used by the influencers to create travel narratives to motivate the audience to visit the particular destination.

- **(Kumar & Rani, 2024)**[iv]**:**

  Influencer marketing is an important factor for shaping tourists' methods of destinations through digital communication. The authors found that the content of the influencers helps potential tourists visualize the experiences of traveling. Influencers, through photographs, videos, and stories, present the destinations in an attractive manner. Influencer marketing is effective for the younger tourist crowd, as it focuses on social media for information before the decision of traveling.

2. Millennials

- **(Kim & Kim, 2024)**[v]**:**

  Millennials form one of the most informative traveling groups affected by digital media and social networking sites. The study states that millennials often retain traveling information through influencer marketing, online reviews, and social media posts before making a destination selection. Influencer marketing impacts millennials' perceptions of destination attractiveness because millennials prefer authenticity and detailed traveling experiences provided by

influencers. The research focuses that millennials prefer to depend on influencers who provide informative, entertaining, and visually appealing traveling information.

- **(Guled & Rajkumar, 2025)[vi]:**

  Influence of Digital Marketing on Millennials: "The influence of digital marketing on millennials grows rapidly with the rise of social media sites." The study argues that "narratives and storytelling strategies employed by influencers help create destination awareness among millennials and motivate their planning intention to travel." Millennials perceive influencers as 'relatable opinion leaders,' and their recommendations are a form of 'E-word-of-mouth communication.' "Influencer marketing helps create more destination awareness and increases purchase intention related to millennials."

3. Generation Z

- **(Li et al., 2024)[vii]:**

  Generation Z travelers also greatly rely on digital platforms or social media for travel inspiration. Based on the findings of the research study, the level of social media communication or interaction with influencers greatly influences Generation Z travel intentions. Generation Z travelers interact with each other through various online platforms or social media sites. Through this form of interaction, they create a conducive communication environment for travel motivation or exploration.

- **(Saltik et al., 2025):**

  The study emphasizes the role of technology and digital tools in influencing Gen Z tourists' behavior. Gen Z tourists like to use social media platforms and online tools to gather information about the destinations and plan their trips. Influencers and online travel creators play a vital role in influencing Gen Z tourists' behavior by offering information about the destinations and storytelling experiences. Gen Z tourists are considered a digitally native generation and like to rely on visually appealing and authentic online information to choose the destinations.

4. International Tourism

- **(Nguyen & Tran, 2025):**

  International tourism has experienced a tremendous change with the incorporation of digital technologies and social media platforms. The research highlights the fact that tourists are increasingly relying on online content and reviews while choosing international tourist destinations. Digital storytelling through social media platforms helps create the global image of the destinations. Social media platforms have become an important source of information for international tourists.

- **(Kilipiri et al., 2023):**

  Social media sites such as Instagram have a major impact on the promotion of international tourism sites. According to the study, influencer marketing helps to raise awareness about the site and increase interest among international travelers. This promotes a positive destination image through the use of attractive images and stories that attract international tourists. This form of online marketing improves the effectiveness of the tourism marketing strategy. This promotes the growth of international tourism

1. RESEARCH GAP

The penetration of digital technology in the lives of people has redefined the way the world is communicating, working, and processing information. Although the internet has opened doors to the dissemination of knowledge in the sense that any person who is connected to the internet can learn anything for free, the internet has also brought along the problem of data privacy. Similarly, the internet has helped bridge the gap between people all over the world but has also led to the creation of echo chambers that have divided people. On the professional front, the world is becoming increasingly efficient due to the penetration of artificial intelligence in the workforce. The penetration of digital technology in the lives of people has redefined the way the world is communicating, working, and processing information. Although the internet has opened doors to the dissemination of knowledge in the sense that any person who is connected to the internet can learn anything for free, the internet has also brought along the problem of data privacy. Similarly, the internet has helped bridge the gap between people all over the world but has also led to the creation of echo chambers that have divided people. On the professional front, the world is becoming

increasingly efficient due to the penetration of artificial intelligence in the workforce.

RESEARCH OBJECTIVES:

1. To analyze the influence of social media influencers on travel decision-making behavior
2. To assess the level of trust and credibility Gen Z and millennials place in travel influencers
3. To examine how influencer marketing affects tour package booking intention and final purchase decision.

RESEACH METHODOLOGY:

This current research used a systematic literature review as a method to investigate the impact of influencer marketing on travel decision-making among Millennials and Gen Z travelers within international tourism. Secondary data was used to gather information from peer- reviewed journal articles, studies, and credible online databases that provided information on social media marketing, tourism behavior, and communication patterns among young travelers. The method used to conduct the review was to analyze the information obtained to identify patterns associated with influencer marketing credibility, authenticity of information, formation of destination image, trust, and social media communication patterns. This current research has also attempted to investigate how influencer marketing acts as a mediator between online travel inspirations and actual travel decisions among Millennials and Gen Z travelers who often depend on online communication to seek information and recommendations on travel destinations. This method has attempted to cover gaps that exist within the current literature, especially with regards to the impact of social media influencers on international tourism among young travelers. This method is academically sound while at the same time being informative for tourism marketers, organizations, and travel brands that would like to use the strategies of influencer marketing to attract the modern traveler.

DISCUSSION:

With the rapid development of social media platforms, the pattern of choosing travel destinations has seen a major change. No longer do tourists rely on conventional travel advertisements or travel agencies to choose their destinations. Social media platforms have become an important source of information for many tourists. One of the most important aspects of the digital tourism industry is influencer marketing. Here, the influencers share their travel experiences with the audience through images or videos that attract the audience. These types of marketing strategies are most effective for the younger generations of the population, i.e., Millennials and Generation Z. Both these generations are extremely active on social media platforms. These generations often rely on the information shared by the influencers while choosing their travel destinations. Apart from this, social media platforms also contribute to the promotion of international tourism. As a result, understanding the relationship between influencer marketing, Millennials, Generation Z, and international tourism can provide insights on how social media posts can impact travel decisions and translate online inspirations into actions.

When we consider the concept of influencer marketing in the tourism industry, it is obvious that social media has transformed the way that consumers discover travel destinations. Influencers are able to share their own travel experiences through images, videos, and stories on social media platforms such as Instagram and YouTube. This form of marketing is often deemed to be more authentic compared to other forms of advertisements. As discussed earlier, consumers are seeking authentic content by **Susanto et al. (2024),** This is because the followers of the influencers tend to trust the influencers due to the real-life experiences and genuine opinions shared by the influencers regarding the destinations. In this regard, the social media posts of the influencers can be considered as the online travel guides, encouraging the followers to think of visiting the destinations. **Kumar and Rani (2024)**. It also highlights how influencer marketing can create an emotional connection with the audience by visually showing what the destination looks and feels like. This means that when people are exposed to these entertaining travel-related posts online, they are more likely to go from scrolling online to considering traveling to the destination itself. This is how social media posts gradually turn into actual travel decisions.

One of the most active groups when it comes to the use of social media for gathering inspiration for traveling is the millennials. Before making any choice on the destination to visit, the millennials spend some time going through the stories and information available on the social media platforms about the places to visit. According to **Kim and Kim (2024),** millennials often use this form of online content to make their destination assessment and planning decisions. What makes the influencer's content appealing to millennials is the authenticity that they offer with their experiences. **Guled and**

Rajkumar (2025) Additionally, the influencer storytelling will help millennials to visualize the travel experiences they will have by becoming more interested in the destinations. Most often, millennials see the influencer as an opinion leader who they can relate to since the influencer's opinions feel like they are getting advice from a friend. Therefore, the influencer's post serves as an electronic word of mouth that influences millennials' choice of destinations to visit.

But Generation Z takes this level of digital influence a step further as they have been brought up with social media. For Generation Z, social media sites such as Instagram, TikTok, and travel-related apps would be the first places to turn to when searching for travel ideas. **Li et al. (2024)**. It will point out that the Generation Z traveler is heavily influenced by interactions with influencers, social media content, and online communities. Generation Z travelers enjoy interacting with travel content, sharing their experiences, and discussing their destinations of choice. **Salik et al. (2025**) It is also worth noting that the content of Generation Z is visually appealing. Generation Z is attracted to authentic content, which influencers have in abundance. Generation Z is attracted to influencers who have real experiences. Influencers have therefore played a crucial part in influencing Generation Z's decision on the best destination for their trips**.**

In considering international tourism, social media has also made the world a more connected and accessible place. For example, today's tourist does not necessarily rely on traveling agencies and brochures when it comes to learning more about a destination; they also look to social media influencers. **Nguyen and Tran (2025)** This can be explained by the fact that tourists increasingly depend on influencers' recommendations, online reviews, and user- generated content when making their choices on international travel destinations. Through digital storytelling, influencers can promote destinations that showcase their culture and experiences. **Kilini et al. (2023)** In addition, other sources, such as the work of the above authors, point out that the role of social media, such as Instagram, is significant for the visibility of the destinations, as it helps influencers to share images, stories, and locations. Thus, it helps to develop a powerful image for the destinations, which attracts international tourists. In this regard, it can be noted that the social media content not only helps to promote the destinations globally but also influences the international travelers to visit the destinations.

Social media influencers have emerged as a key motivator for tourists, especially among the youth who are more inclined to seek information through digital media to plan and think about a potential tourist destination. Influencers provide information about tourist destinations through the concept of 'visual storytelling' and 'destination recommendation' to potential tourists, who are able to 'imagine' the experience before visiting the destination. Studies have revealed the influence of influencer marketing on tourists' perception and the tourist decision- making process. Influencer marketing influences tourists' perception and decision-making process with respect to the assessment of tourist destinations and travel services, and the formation of intentions to visit potential destinations **(Dimitrios & Christos, 2024).**

Social media websites like Instagram, YouTube, and TikTok play an important role in the decision-making process for the Millennial and Generation Z segments. These two segments actively seek information on the internet regarding their travels. It has been found that Generation Z travelers depend on the recommendations of social media websites to form their travel intentions**. (Popescu, 2023).** As a consequence, awareness of the destination is heightened among individuals as they seek new travel opportunities through the influencer's content. This provides an understanding of how digital travel inspirations can translate to actual travel decisions, hence achieving the first purpose of the study.

Trust and credibility are important aspects that influence the success of influencer marketing in changing consumer behavior. Millennials and Gen Z tend to consider influencers as credible sources of information on travel destinations, especially when they are able to present genuine and transparent information on their travel experiences. It is noted that credibility, authenticity, and expertise play an important role in the success of influencer marketing in the tourism industry **(Dimitrios & Christos, 2024)**. Influencers who show their audience that they are knowledgeable in giving recommendations on travel destinations are more likely to win their audience's trust.

In addition, Generation Z values authenticity and transparency in social media communication. Research indicates that Generation Z travelers are more likely to trust influencers who show authentic experiences in their social media communication compared to those who show commercialized experiences. **(Lou & Yuan, 2019).** This means that followers who believe the influencers they support are credible will be more willing to accept their suggestions and the destinations they offer. By examining the level of trust and credulity given to influencers, the role they play in determining the

travel choices of the younger generation can be understood, thereby supporting the second objective of the research.

Not only do influencer marketing campaigns encourage travel ideas among tourists, but they can also influence their booking intentions and purchasing decisions. In most cases, travel influencers tend to work with tourism organizations, hotels, and travel agencies to promote travel packages and other related services. By using engaging posts, videos, and blogs, travel influencers are able to provide their followers with adequate information regarding travel opportunities, thus encouraging their booking intentions for travel packages. Studies have shown that influencer marketing can influence consumer engagement with tourism products and services, thus affecting their booking intentions **(Dimitrios & Christos, 2024).** In addition to that, travelers may get affected by repeated exposure to attractive travel content and change their attitudes to move from inspiration to action. When travelers see positive experiences related to traveling shared by influencers, they may form positive perceptions that can lead to their purchasing decisions**.** According to **Lou and Yuan (2019),** Influencer credibility and content quality were found to be important factors for consumer attitudes and purchase intentions in social media marketing settings. Accordingly, the exploration of the effects of influencer marketing on booking intentions and purchase decisions helps to understand the role of digital influencers in tourism promotion and achieve the third research goal.

In conclusion, the increasing power of social media has greatly changed the manner in which travelers seek information on travel destinations and make their choices accordingly. Influencer marketing has been recognized as a major factor in the tourism industry, especially with regards to the travel choices of Millennials and Gen Z travelers who are highly engaged with social media. This study has shown that the credibility of influencers is a major factor that influences how young travelers view their travel destinations and make their travel-related decisions accordingly. In addition, the use of influencer-generated content not only raises the level of awareness among destinations but also prompts tourists to go from online sources of inspiration to actual planning and booking intentions. By exploring the association between influencer marketing, trust in influencers, and travel purchase behavior, this research aims to reveal the potential of social media posts being converted into actual behavior. Thus, it is evident that the use of influencer marketing has become a major factor in the promotion of international tourism, especially among the younger generations.**SCOPE:**

Future research directions for this study would be to extend the research by investigating the impact of social media influencers on the behavior of tourists across different countries and cultures, thereby creating a better understanding of the influence of regional differences on the effectiveness of influencer marketing for the tourism industry. Future research could also be conducted to examine the impact of different social media sites such as Instagram, TikTok, and YouTube, among others, individually, to identify the social media sites that are more effective for influencing the behavior of Millennials and Generation Z. Moreover, future research could be conducted to examine other important factors such as the image of the destination, the authenticity of the influencers, user-generated content, electronic word-of-mouth, among other factors, to gain a better understanding of the effectiveness of online content for influencing the behavior of tourists. Furthermore, future research could be conducted to examine the long-term implications of the effectiveness of influencer marketing for the promotion of sustainable tourism, especially among the younger generations, who are more inclined towards responsible travel.

LIMITATIONS:

Despite the fact that this study provides important insights into the impact of influencer marketing on the travel decisions of Millennials and Generation Z travelers, the research has a number of limitations. First, the research could be limited in scope depending on the sample size and the demographic sample. This is because the research targets a certain group of travelers according to their ages. Secondly, the research could be limited to the perceptions and attitudes of the participants towards influencer marketing. This could be affected by the participants' biases. Finally, the research could be limited to the impact of social media influencers on travel decisions. However, the research does not consider other important factors that could impact travel decisions. These factors include the travel experience of the individual, financial constraints, cultural factors, as well as economic conditions. Finally, the constantly evolving nature of social media platforms and digital marketing trends may impact the long-term applicability of this research, as it is possible that new technologies and trends in marketing strategies could change the way in which travelers interact with influencer content in the future.

CONCLUSION

This research aims to emphasize the increasing power of social media influencers in the travel

decision-making process of Millennials and Generation Z. Based on the research findings, it can be concluded that influencer marketing has become an effective marketing strategy for the tourism industry, as the travel habits of Millennials and Generation Z are significantly influenced by social media platforms like Instagram, YouTube, and other social media channels. Social media influencers play a vital role in creating travel intentions by sharing their travel experiences with their audience. Moreover, the research findings emphasize the fact that trust, credibility, and relatability of influencers also affect the travel intentions of the audience. Additionally, influencer-generated content not only affects travel intentions but also influences purchase intentions. Overall, the study confirms the significance of social media influencers as intermediaries between tourism brands and modern travelers. It shows that social media influencers play a vital role in converting online inspiration into actual tourism behavior. Consequently, tourism marketers and organizations need to adopt influencer marketing to reach the Millennial and Generation Z segments of the tourism market while encouraging them to adopt sustainable tourism.

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Implementation of Activity-Based Costing (ABC) for Improving Cost Efficiency and Strategic Decision-Making in Modern Organizations.

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ABSTRACT

Activity based costing has become a significant contemporary cost management strategy of which it aids businesses more precisely as well as in allocating expenses. The goal of the study "Implementation of Activity-Based Costing (ABC) for Improving Cost Efficiency and Strategic Decision-Making in Modern Organizations." is to determine how ABC costing improves cost efficiency and better decision-making, improve cost control, facilitate managerial choices. Thus, traditional costing also does not provide accurate information as ABC costing provides on the other hand ABC costing provides better understanding of operational costs by identifying cost drivers and cost overheads of which allocating costs is based on real actions. Organisations find non-value-added operations maximizing resource use this effectiveness is boosted operational efficiency of which it is implemented by ABC. Additionally, ABC costing also strengthens in decision making through improving pricing strategies, budgeting as well as performance evaluation it also assists in decision about production, resource allocation and process optimizations by offering comprehensive and trusted cost information. Henceforth hurdles in ABC costing includes change in organizational position as well as opposition such as data gathering information's of which it becomes difficulty in implementing. Tough ABC costing faces difficulties and disadvantages adopting ABC costing helps in improving cost effectiveness assisting in strategic management in contemporary of businesses. According to authors activity-based costing is the fundamental authors Cooper, R., and Kaplan, R. S. (1988/1991) contend that by allocating costs according to actual activity consumption rather than arbitrary volume measures, ABC resolves the distortions of traditional costing. As per researchers' activity-based costing is Alsayegh, M. F. (2020), ABC increases a company's competitiveness and yields more accurate product cost projections, especially in settings with a high degree of product diversity. As per writers' contribution activity-based costing is According to Messaoud, B., and Mourad, S. (2021), ABC is a technique for measuring performance and making the best use of resources. They also point out that it can increase profits and performance quickly. According to Quesado, P., and Silva, R. (2021), ABC provides more accurate information for product cost computation and strategic decision-making by overcoming the shortcomings of conventional methods in the face of contemporary technology advancements. Rohman, F. (2019): The author highlights that although the initial implementation of ABC necessitates a major time and resource commitment, the long-term advantages in terms of enhancing cost accuracy and managerial choices are enormous. According to Waruwu et al. (2024), ABC is very successful at identifying non-value-added tasks, which enables businesses to cut waste, boost productivity, and allocate internal resources as efficiently as possible.

Key words: *Cost efficiency, Strategic decision making, Cost drivers, Cost Management, Operational efficiency, Resource allocation, Organizational performance.*

1. Introduction

Organisations always look for saving expenses in an efficient manner as well as improve operational performances in today's business world. The reliable of cost information provided by traditional cost system has been decreased due to the increasing number of service industries as well as and various industrial activities. Due to this aspects lot of companies, industries as well as businesses are using activity based costing as main aspect because it's a type of innovative as well as effective costing method it also determines many tasks caried out in businesses, companies as well as industries in order to allocate expenses of goods and services according to the usage of resources and task is also performed based on this aspect. This strategy opposed traditional costing method of which it only comprehends as well as does not provide accurate information regarding cost of a product and it is also a very expensive compared to activity-based costing. This research contributes such as it gives management the most accurate and reliable cost information. It helps managers to identify useless tasks and decrease unnecessary expenses. ABC costing facilitates in improving planning, budgeting and resource allocation through comprehensive cost analysis thus it also helps the management and for making well informed decisions as well as strategic choices such as product development, pricing, operational enhancements as the ABC costing implements activity-based costing has grown significant for enhancing costs and gain continuous profitable business. As per the authors contribution Activity based is the Cost as the forerunners of ABC, Cooper and Kaplan (1988/1991) contend that while ABC correctly links indirect costs to the activities that generate them, traditional costing techniques produce cost distortions by distributing overhead based on volume. According to Drury (2017), ABC is crucial for supplying precise, trustworthy cost data required for strategic decisions since traditional costing frequently underestimates production difficulties. To address implementation issues, Kaplan and Anderson (2004) created "Time-Driven ABC," highlighting how ABC/M (Activity-Based Costing and Management) makes managers "smarter" by assisting them in identifying underutilized capacity and cutting expenses. According to researchers to Peter F. Drucker (1999), ABC provides a thorough understanding of process inefficiencies that traditional accounting overlooks by recording the expenses of "not doing," such as the expense of waiting for parts. Durana & Merlita (2022): discovered a strong link between the capacity to enhance cost-cutting tactics and product price and the effective application of activity-based costing. According to Ness and Cucuzza (1995), ABC is a potent, if occasionally challenging, technique for altering an organization's operational strategy to promote continuous development.

2. Background

In the current scenario to increase competitiveness in business environment organizations require accurate information regarding costs for maintaining effective and efficient and for improving profits. As Traditional costing use to fail because it was not providing accurate cost information as well as failed in reporting, allocating overhead costs of which it led to distorted product cost Activity based costing has also been emerged as modern cost techniques that assigns cost based on activities performed as well as resources consumed. Amongst various cost method activity-based costing method is best because it provides precise cost information by identifying cost drivers and linking them to specific activities. Thus, implementation of activity-based costing helps the companies to grasp the true, fair view of cost, operations in goods and services. The ABC costing method also helps managers to for finding tasks as well as the tasks of which it does not bring value which comprises of non-value-added activities and cuts off wasteful spending of which it eliminates unnecessary expenses. It also suffers for better improved budgeting, pricing and performance evaluation, with increased cost transparency organisations make strategic decisions on cost based on the transparency incurred in cost. Since businesses face complexity in pricing from competitors, entry of new competent they can adopt activity based as it improves cost effectiveness as it improves in strategic decision making in today's companies as well as for businesses.

3. Review of Literature

1. Adamova (2022)

Adamova examined Activity-Based Costing as a method for strategic cost management in modern companies. The report claims that ABC improves cost accuracy by allocating overhead costs based on real activities rather than a traditional allocation basis. This enables managers to identify inefficient processes and make better strategic decisions on product pricing and cost containment.

2. Susilowati (2023)

Susilowati investigated how ABC and other managerial accounting techniques support strategic decision-making in manufacturing firms.

The study's conclusions indicate that ABC provides more accurate cost information, enabling companies to make informed decisions regarding their product mix, pricing strategies, and process improvements.

3. In 2024, Bashatweh

Bashatweh examined how ABC was applied in Jordanian manufacturing firms. The results showed that ABC greatly enhances price decisions, cost control, and financial planning. The strategy improves organizational performance and financial management efficiency, according to the study.

4. Zha (2024)

Zha carried out a case study on how ABC was used to reduce production costs at a manufacturing company. The study showed that ABC offered a more accurate cost allocation, improving cost control and operational effectiveness, while traditional costing techniques underestimated product costs.

5. In 2024, Bashatweh investigated the application of ABC in Jordanian manufacturing companies. The findings demonstrated that ABC significantly improves financial planning, cost control, and pricing decisions. According to the study, the approach enhances financial management effectiveness and organizational performance.

6. Usman and colleagues (2025)

Usman and colleagues conducted a comprehensive review of the literature on ABC's function in management decision-making. The findings showed that ABC reduces cost distortions and increases organizational efficiency, enabling companies to make data-driven decisions that boost competitiveness and profitability.

7. Mpanza (2025)

Mpanza investigated how ABC may be integrated with modern technologies like cloud computing and big data. The study found that in modern firms, digital ABC systems significantly improve strategic decision-making, profitability, and cost allocation precision.

8. Widyaningsih, Putra, and Andriana (2025)

This hybrid systematic literature review looked at global research trends in ABC implementation. The study identified several key research issues, including ABC applications, implementation challenges, technological integration, and sustainability. It concluded that ABC is still an essential instrument for strategic cost control in modern businesses.

9. Mediety and associates (2023)

Mediety and associates examined how ABC and Time-Driven ABC were applied in various sectors. According to the study, by offering precise cost data for resources and activities, these costing systems enhance productivity, competitiveness, and managerial decision- making.

10. Mishra and Celestin (2024)

Celestin and Mishra examined how big, global companies used strategic cost accounting techniques like ABC. According to their research, businesses who used ABC had better revenue growth and larger profit margins than those that only used conventional costing techniques.

4. Statement of Problem

- Since traditional costing gives information regarding wider distribution overhead expenses of which it uses wide range like labours, machine hours of which it is used by modern business. This frequently results in incorrect cost distribution.
- The prices of Product and services keep changing as traditional cost fails to accurately identify the real activities cost of which it is utilized for resources.
- Inappropriate decisions made my managers based on the incorrect product pricing, inadequate utilization of resources, reduced revenue can be occurred from inaccurate cost information.
- Since Companies need more accurate cost management information for staying competitive as well as for successful growth in the face of competition and elaborate in manufacturing processes.
- It is also a difficult challenge for managers to identify nonvalue added operations as well as for successfully minimizing operating expenses because they lack in understanding the cost factors.
- A Company's capacity also is to assess profit from the manufactured product as well as from the customers, process level of which it is restricted through the absence of efficient cost system.
- Although the cost being recognised as an improve costing method ABC costing method is not fully accepted as well as adopted by many companies as well as by the business organisations because of implementation of costs as well as lack of

awareness.

- Companies experience poor cost management and reduced capacity for strategic decision making in the absence of appropriate cost analysis if the activity-based costing is used.

5. Objectives

- To find out how activity-based costing could help todays companies, businesses to allocate costs more precisely.
- To figure out how activity-based costing adopts in identifying inefficient activities and handling organisational expenses.
- To determine how ABC costing affects managerial choices particularly in the areas like financial planning, budgeting, product pricing.
- To study how well ABC costing works in increasing organisations operational performance and utilisation of resources.
- To examine the possible benefits and difficulties in establishing activity-based costing in current businesses as well as in companies.

6.Research Methodology:

This study helps modern companies as well as businesses to improve their cost efficiency as well as in strategic decision making, cost control. The data is mainly relied from secondary data from journal, books, research articles This study regarding cost drivers, cost allocation, and companies' performances help to understand effectiveness of activity-based costing.

7.Data Collection:

The data for this study is mainly from secondary sources because no questionaries are used because it is used pervasively. It is obtained from published journals, research articles, books and previous study Opinions of Accounting Experts and reports related to activity based costing further details will be discussed in the results.

8.Findings and discussions

Improving Cost Efficiency: - Since activity-based costing provides more accurate information than the standard costing systems according to the various research studies. It also helps businesses as well as for companies more accurately and allocating overhead costs through evaluation of cost drivers as well as cost activities. This statement was contributed by the researchers Messaoud and Mourad 2021, Quesado and Silva 2021, Putri Bastian, Fitriyani 2023, Zha 2024, EL-Gibali 2024, Adetayo, Abosede and Olajumoke 2025.

Identifying activities that don't add value: - According to sources, materials, documentations, literatures activity based costing helps businesses, companies to identify the costs which are not added value in the activities such as services, productions and operations, it also plays a vital role in eliminating unnecessary activities which helps in reducing operational wastes and improving cost efficiencies. This statement was contributed by the researchers Messaoud and Mourad 2021, Quesado and Silva 2021, Larasati and Wijayawati 2024, Waruwu Et El 2024, Bodendorf and Franke 2024, Adetayo et al.

Enhanced Resource Utilization and Cost Management: - Managers make better decisions by understanding how resources are used in different activities as well as in different departments by using ABC costing it also increases efficiencies in operational performances by helping businesses to manage the expenses in a better manner and to make use of resources productively. This statement was contributed by the researchers Messaoud and Mourad 2021, Quesado and Silva 2021, Mediety et al 2023, Borges, Alves, Silva 2024, Zha 2024, Chen 2025.

It helps in Making Strategic Decision: - The descriptions through the research articles activity-based costing offers accurate cost data of which it helps the managers to make an appropriate decision regarding price, budgeting, product mix and improving in manufacturing processes. Business Organisations, Companies make strategic decisions based on the usage of activity-based costing. This statement was contributed by the researchers Messaoud and Mourad 2021, Quesado and Silva 2021, Mediety et al 2023, Bashatweh 2024, Waruwu et al 2024, Usman et al 2025.

Promotion of Organisational Effectiveness: - Adopting activity-based costing helps in increasing companies as well as business profits, efficiency as well as effectiveness and competitiveness by providing comprehensive understanding the products cost structure as well as pricing models and operational performances, according to various research contributed by the authors. This statement was contributed by the researchers Messaoud and Mourad 2021, Quesado and Silva 2021, Mediety et al 2023, Durana and Merlita 2022, Waruwu et al 2024, Usman et al 2025.

Activity Based Costing Digital Connectivity: - Based on the current research studies connecting activity-based costing with modern technologies as

well as innovations such as Artificial Intelligence, Cloud Computing large amount of investments and digital accounting systems promotes decision making and significantly cost evaluation. This was contributed by researchers ZHA 2024, Abeyesekera and Sharma 2023, Chen 2025, Mpanza 2025, Saad many Abdelraheem, Elbashir 2025, Harahap Irawan and Valerry 2024.

Challenges with Activity Based Cost implementation: - Although activity-based costing has many advantages some of the research highlights many disadvantages such as huge expenses for implementation, problems in collection of information as well as data and of which it causes changes in organizational hurdles. This statement was contributed by the researchers AI Dhubaibi 2021-2025, Pham et al 2021, Patel and Gupta 2021, Musea et al 2023, Tsai et al 2024, Madwe and Mtembu 2025,

Activity based Costing overall efficiencies and effectiveness: -It is determined from theoretical analysis and review of literatures that activity-based costing is useful instrument for controlling expenses as well as for handling costs of which it increases cost efficiencies and savings that improves strategic decision making, strategic choices in modern businesses. This statement was contributed by the researchers Putri, Bastian and Fitriyani 2023, Abeyesekara and Sharma 2023, ZHA 2024, Borges, Alves and Silva 2024, Widyaningsih and Andrina 2025.

Role of Activity Based Costing in

Manufacturing Industry: - According to Robert S. Kaplan and Robin Cooper, in manufacturing Sector Activity based Costing helps in identifying the true cost for producing each product as well as allocating charges by determining the actual cost of manufacturing each product. It also improves cost control by identifying nonvalue added activities of which it increases cost management. Kaplan & Cooper, 1998 stated that Managers also identify profits as well as non-profit items of which it updates manufacturing plans.

Service Industry: - According to Robert S. Kaplan and Robin Cooper, In Service industries such as Hospitals, Banks and IT sector Activity based costing keeps a track of expenses of which it is related to customers service, transactions, support operations. Further, Charles T. Horngren et al. (2013) It also helps Companies, business organisations in measuring the costs of each service and improving the price of each service.

Health Care Industry: - According to Robert S. Kaplan and Robin Cooper, Hospitals use Activity based Costing to identify the expenses of the medical operations, treatments, services offered for patients. Furthermore, Michael E. Porter (2010) stated improves the allocation of resources, reduces expenses and promotes effectiveness of qualitative treatment.

Education Sector: -According to author Charles T. Horngren et al. (2013) Schools, Colleges, Universities use Activity based costing for calculating cost of courses, academic programs and office duties it also encourages the effectiveness of resource utilisation, preparing for budgets, financial planning, allocation of funds.

Retail and Distribution industry: - According to Edward J. Blocher et al. (2010), Retailers use Activity based Costing to evaluate product handling, storage, marketing and distribution costs of which it serves in finding expensive tasks while improving the efficiency as well as effectiveness of supply chain.

Public Sector and Government: -Government Companies and Public Sectors use Activity based Costing to calculate the cost and expenses of the public programs and services of which it facilitates the efficient use of public finances and maintaining transparencies while preparing budgets.

Supply Chain Management and Logistics: - According to the author John J. Coyle et al. (2016) Activity based Costing determines the cost of items such as handling orders, warehousing, transportation it also enhances cost reduction and supply chain efficiency.

Strategic Management: -In the view of author Michael E. Porter (1985) Activity based Costing offers accurate cost information for pricing, outsourcing, product development and facilitates for appropriate strategic decision making. It also helps managers to reduce waste as well as focus on the tasks which adds value rather than wasting time on non-value-added terms.

Activity based Costing in Commerce Roles: -

Role of Activity Based Costing in

Finance Field: - According to Ronald W. Hilton (2011), Activity based Costing helps in analysing financial activities cost in finance departments, it also generates the price transactions made in investments, securities. It also Supports in minimizing expenses and allocating funds, budgetary planning and spending strategy. It also increases the study of financial performances. Thus, Activity based Costing supports decisions about investments and profitability's.

Human Resources Field: - According to Peter B. B.

Turney (2008) Activity based Costing helps in HR by understanding the expenses associated with the employee related tasks. ABC costing in HR functions in finding the cost of hiring as well as the training cost for employees. It also identifies the expenses incurred for the employee development initiative cost of which it supports in performance evaluation and recruitments it also improves the distribution of funds, cash, assets, capital, money of which it requires for expenditures of HR.

Marketing Field: - According to Philip Kotler & Keller (2016) ABC costing helps in marketing field such as it helps in cost of marketing concepts and many other activities. Activity based Costing functions also includes to calculate the cost of advertising expenses as well as for evaluating the profitability of customers to analyse the marketing and distribution costs of which it helps in choosing the market price as well as for marketing strategies such as advertisements and promotions.

Accounting Field: - According to Charles T. Horngren et al. (2013) Activity based Costing is closely related to accounting as it enhances in increasing the cost allocation and deeply connected to accounting. ABC also functions provide in accurate pricing for goods and services as it helps in allocating overhead costs and improves budgeting and cost control and it also helps in financial reporting and management accounting.

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A Study on Green AI: The Future of Sustainable Commerce

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ABSTRACT

The artificial intelligence industry stands at a critical point, and the path it chooses in the near future will decide whether technology becomes a driver of environmental sustainability or adds to the increasing sources of environmental harm. This conceptual paper is based on a review of related articles and research, along with insights gathered from experts in the field through secondary sources of data. Organizations are increasingly integrating AI into various business activities, but the environmental impact of its use often goes unnoticed. While it boosts productivity and competitiveness, the scope of AI consumption in the fields of business and commerce has increased significantly, creating an AI sustainability gap wherein it leads to an imbalance between the rapid growth of AI adoption and its environmental consequences. Responsible AI consumption helps in energy-saving data management and promotes the transparency of disclosing the environmental impacts of its usage. These approaches will help organizations walk the line between technology and nature. Transparent disclosures of the impacts of AI usage will help in promoting accountability in organizations and encourage the proper and efficient utilization of AI in different sectors. In this regard, the study discuss on how sustainable AI has to shift from technological advancements to the proper and efficient consumption of AI in organizations. The objective is to rethink what "green" truly means in the context of "green AI," which suggests the findings of conscious utilization and incorporation of responsible AI consumption practices that can collectively contribute to sustainability. This sustainable application of AI is not just development but a strategic and ethical business decision. The paper highlights the conceptual shift towards a more conscious and ethically focused approach to AI implementation, and the organizations can ensure that artificial intelligence serves not only as a tool for economic growth but also as a catalyst for long-term environmental sustainability.

Keywords : *Artificial Intelligence, AI Sustainability Gap, Green AI*

INTRODUCTION

The rapid development and integration of artificial intelligence in the industry have brought about a revolution in modern commerce and productivity, accompanied by a few questions of environmental accountability. As businesses all over the world increasingly look to integrate artificial intelligence tools in the work frame of the industry, the overall energy consumption of this digital revolution in commerce has quietly emerged as a pressing issue. The present study aims at exploring this emerging trend in terms of sustainable commerce and its potential as a strategic and vital need in businesses.

The emergence of AI as a new pillar in the realm of economic activities has been rapid, and virtually every area of economic activities is being penetrated by AI, be it supply chain management, customer relationship management, or financial forecasting,

along with personalized marketing. Nevertheless, the realization regarding the need to bring forth the concept of "AI Sustainability Gap" is growing in the minds of experts, and this is where the concept is being realized in the context of the Indian economy, owing to the fact that the country is assessed to become a hub for economic growth in the realm of digital and AI-based economies.

According to Gupta and Mehra (Gupta, R., & Mehra, S. (2023). Adoption of AI in Indian businesses: Bridging the Sustainability Gap. Journal of Business and Technology Management, 15(2), 44–61.), Indian businesses, especially in the retail, finance, and logistics sectors, generally tend to look at the adoption of AI technology from only one perspective: whether it is cost-efficient or whether it provides them a competitive advantage in the market, while failing to look at the simultaneous effects on the environment, such as the effects of data centre usage, cloud services, and equipment usage in general, especially in the commerce industry, which is unique in this regard. In this industry, retailers and online businesses have been at the forefront in adopting AI technology for business benefits. While these clearly save money and boost profit they rely on massive computer systems that use a lot of energy and most of the time neither the companies nor the customers are fully aware of environmental damage this causes. Sustainability in commerce requires not merely the adoption of energy-efficient technologies, but a fundamental rethinking of how AI systems are designed, deployed, and decommissioned. Several researchers have highlighted that the fact that companies hide or don't openly share information about the environmental costs of AI makes it harder for people to make responsible choices.

The structure of this paper proceeds as follows: the subsequent sections review the relevant literature on Green AI and sustainable commerce, followed by a conceptual review of the AI sustainability gap, objectives, findings, suggestions and conclusion through which responsible AI consumption may be fostered.

LITERATURE REVIEW

Le Dinh, Vu, and Tran (2025) findings tell us that AI technologies have the potential to greatly improve operational efficiency, product development, customer engagement, and competitive advantage for Small and Medium Enterprises, with machine learning and natural language processing being the most commonly adopted tools used for everything from predicting customer behaviour and managing supply chains to detecting financial fraud and personalizing the shopping experience. Small and Medium Enterprises often operate with limited financial and human resources, technical skill shortages, organizational resistance to change, and have concerns related to data integration, security, and privacy, which makes the strategic adoption of AI a challenge.

According to Pawar et al. (2025), training and running large AI models need considerable computing power, which in turn results in high electricity consumption, thereby contributing to carbon footprint, particularly when the source of electricity is fossil fuels.

Agarwal and Chakraborti (2025) suggest that with the "environmental cost of technological progress," the rapid growth of AI innovation has been a problem in recent times. The research demonstrates how the more complex and frequently updated models require more computational resources, thus increasing emissions. In this regard, Green AI has been proposed by the authors as a means of addressing the need for efficient, transparent, and sustainable AI systems. This research has been beneficial in the conceptualization of Green AI for the future of sustainable commerce and business.

Toderas (2025), in an article published in Sustainability, offers a systematic review of the research that has investigated the application, challenge, and prospect of AI in the context of global sustainability and the SDGs. The author's work defines the concept of the "AI green paradox," which is the fundamental contradiction between the capacity of AI to enable ecological answers and the ecological footprint of AI itself, which is significant. The significant energy required to train large language models has a considerable carbon footprint, and the quick obsolescence rates of hardware used in AI have a significant electronic waste footprint, and the cooling required in data centres has a significant footprint on local water resources. She also coins the term "digital pollution" to refer to the ecological impact of digital infrastructure and identifies these ecological risks as falling under three interrelated categories: ecological, data, socioeconomic, and ethical risks, which create compounding governance issues for policymakers. Ultimately, Toderas concludes that in order to unlock the full potential of AI for sustainable development, Green AI development should be complemented by the creation of associated ethical governance systems, international cooperation, and education/capacity building efforts.

Raihan et al. (2024) indicate that AI technologies are being used in areas such as energy management, transportation systems, biodiversity, and water conservation, among others, to help organizations optimize their resources and make better decisions, thereby promoting environmental sustainability.

Tripathi, Bachmann, Brunner, Rizk, and Jodlbauer (2024), writing in the Journal of Big Data, conduct a comprehensive analysis of 1,982 papers on AI and sustainability drawn from the Scopus database. Their findings are significant on multiple dimensions. They establish that AI and data-driven methods offer genuine potential for optimising resources, integrating different aspects of sustainability, and enabling informed decision-making across local, regional, and global challenges. Their research has identified four issues that persist in the field, including the application and efficiency of AI in the context of sustainability, the risks that come with the application of AI, the importance of transparency, and the development of green AI without the centralization of its resources and technology.

The rapid growth of artificial intelligence in all aspects of the global economy has led to a new environmental impact that the research community is only beginning to come into agreement about. more specifically, the computational infrastructure necessary for the training, deployment, and maintenance of modern artificial intelligence systems, including the large-scale generative models that have become popular in recent years, requires massive amounts of electricity, water, and physical materials, all of which have a number of negative impacts on the environment. Two substantial reviews, Alzoubi and Mishra (2024) and Bolón-Canedo et al. (2024), together provide a reasonably comprehensive overview of the state of the field as it currently stands, the progress that has been made, and the areas in which the greatest challenges still exist. There are several consistent limitations across these two papers that should be acknowledged. The evidence base relies heavily on figures and case studies provided by the organisations developing the tools under review, introducing concerns about objectivity and generalisability that independent empirical validation largely absent from the literature would help to address. Many of the tools and initiatives discussed in the above paragraphs are still in the early stages of their development lifecycle, with the effectiveness of these tools yet to be ascertained and with significant scope between proof-of-concepts and deployment-ready state. The accuracy-efficiency trade-off is an essential and unresolved problem, as the methods that can be employed to reduce the size and computational demands of the model consistently result in some level of performance degradation, which is difficult to ascertain without the development of systematic methods to traverse the accuracy-efficiency trade-off, which has yet to be achieved (Alzoubi & Mishra, 2024). And the cultural tension in the research community towards accuracy over efficiency means that change is not simply about the tools, but also about the incentive structures that govern the publication and industry benchmarking communities. Bolón-Canedo et al. (2024) propose that researchers and developers could begin making this change voluntarily, adding energy consumption as a standard metric in their reports, alongside accuracy, in a small step toward the change in culture that is required. Ultimately, the very question of whether the benefits to the environment from AI will ever outweigh the costs must be seen to be answered honestly, and this in turn will require the standardisation and regulation that the literature so consistently proposes is required, but not yet sufficient.

Gupta and Mehra (2023) have suggested that the environmental impact of AI is not taken into consideration by Indian businesses, especially in industries like retail, banking, logistics, etc., as they focus only on the cost efficiency and competitive advantage provided by AI adoption.

Moreover, Verdecchia, Sallou, and Cruz (2023) have suggested that the carbon footprint of AI systems is now becoming very significant because of the growing size of AI models. Rayhan (2023), examining the practical implications of AI deployment across sectors, reinforces several of these governance concerns from an applied perspective. He observes that while AI offers clear benefits these applications carry risks that must not be treated as secondary. He draws attention to the risk that the deployment of AI in critical sectors raises concerns around data privacy and cybersecurity.

Zhao & Gómez Fariñas (2022), in the European Business Organization Law Review, examine this misfit from a corporate law point of view. They suggest that AI represents a double-edged sword in addressing corporate sustainability issues, as while AI holds the potential to solve complex corporate environmental and social sustainability issues, at the same time, it also poses new risks in the form of "automated biases and incompatibility with human ethics." The conclusion they draw is that a concerted effort on the part of companies as well as governments is required in addressing sustainability issues, as well as risks associated with AI.

The most theoretically precise discussion on why there is a sustainability gap in AI and how this requires a joint response can be found in Van Wynsberghe (2021) in her book "AI and Ethics." Her main argument is that while more and more efforts have been made in developing AI for sustainability, or "using AI to help achieve the Sustainable Development Goals," it is equally important to tackle "the sustainability of AI itself: the environmental impact of developing and deploying these systems."

She proposes Sustainable AI as a movement to foster change across the entire lifecycle of AI products from idea generation through training, re-tuning, implementation, and governance towards greater ecological integrity and social justice. Importantly, Van Wynsberghe is clear that her paper's primary aim is to encourage AI developers, policymakers, and ethicists to reconnect with the environmental costs of AI and to direct funding toward more sustainable methods.

Galaz, Centeno, Callahan, Causevic, and colleagues (2021), in Technology in Society, examine AI's relationship with sustainability from a systemic risk perspective. Their core contribution is to show that increased use of AI technologies could create new types of systemic risks, risks that arise not from individual applications but from the interconnected and automated nature of AI-driven decision-making.

Schwartz, Dodge, Smith, and Etzioni (2020) also warned that there is the rebound effect, which means that when the efficiency of using AI is increased, it is used to a much larger extent, which negates the benefits to the environment.

The paper will focus on the importance of the use of AI in the field of business and commerce, the definition of the concept of the AI sustainability gap, and the definition of the concept of Green AI as the bridge that connects the gap between the emergence of AI in the field of commerce and its sustainability.

RESEARCH METHODOLOGY

The research methodology employed in this paper is conceptual in nature, and it is based on the systematic review and synthesis of the existing literature, theoretical frameworks, and expert perspectives as derived from secondary sources of data and literature. Instead of relying on primary research and engaging in data collection through surveys and interviews, the arguments in this paper are based on the body of knowledge that has been established in the field of artificial intelligence, sustainability, and green AI.



RESEARCH GAP

Although there is a growing body of literature on the applications of AI as well as the environmental impacts of AI, most existing studies treat these two issues as separate conversations. In other words, studies that examine the business benefits of AI rarely touch on the environmental costs of AI, and studies that examine the environmental impacts of AI rarely provide practical frameworks that can be used by businesses. Moreover, the majority of the studies have focused on the experiences of developed economies while ignoring the experiences of emerging economies. In recent years, there have been studies by authors such as Van Wynsberghe (2021) and Toderas (2025), which have shed light on the environmental impacts of AI. This includes the environmental impacts of the development of AI, the environmental impacts of the power requirements of AI, and the environmental impacts of electronic waste.

However, an important gap still exists in this research. Most studies focus either on the technical side, such as improving the energy efficiency of AI systems, or on policy and governance, which looks at how governments can regulate AI's environmental impact. In the organizational level, the everyday decisions companies make when they adopt and use AI in their operations has received very less attention.

For example, there is limited research on how organizations can use AI more responsibly, how they can be transparent about the environmental impact of their AI usage, and how business strategies and workplace cultures may need to change to support more responsible AI practices

This paper identifies a conceptual gap of the impact of AI technologies on the environment, although a majority of the literature has focused primarily on the development and regulation of these technologies. To address environmental concerns relating to AI, however, it is important to consider not only how AI is developed and regulated but also how AI will be utilized and managed by organizations. Organizations are crucially important not only in their adoption of AI technology but also in their choices about how to implement AI and the degree of intensity with which they will use that technology.

Thus, creating responsible AI involves dual-track approach: to develop environmentally responsible AI technologies that consume less energy, as well as encourage organizations to use that environmentally responsible AI in a mindful and transparent manner. By encouraging the proper growth and consumption of AI, different entities can work hand in hand in encouraging innovation through the use of AI while at the same time encouraging sustainability in the environment.

OBJECTIVES

The main goal and objective of this particular study is to bridge the gap that is seen between the rapid adoption and consumption of artificial intelligence in organizational settings and the lack of attention and focus that is being directed toward the environmental consequences that it has, which is termed the AI sustainability gap.

The objective and purpose is to redefine the concept and meaning of the term 'Green AI,' not simply as it relates to the optimization and efficiency that it has the capability to provide, but rather as it relates to the conscious and aware consumption that it has the capability to provide, and how it can be utilized as a means through which the responsible consumption patterns can be identified and articulated as they pertain to the organizational level. As such, the paper is able to clearly and concisely illustrate and demonstrate that sustainable AI is not simply an engineering problem; rather, it is a conscious and aware business decision that must be made in order to utilize it as the catalyst that it has the capability to be with respect to environmental sustainability and not as another source of ecological problems and issues.

FINDING

The environmental impact of artificial intelligence is far larger than most people imagine, and it begins long before the AI is used. In fact, the environmental impact of the training of a single AI model is so great that it can produce as much CO2 as five cars produce during their entire lifetimes. But it is only the beginning. Once the AI is deployed, the process of running the AI, known as inference, is responsible for 80 to 90 percent of the total lifetime environmental impact of the AI, according to Verdecchia, Sallou, and Cruz (2023).Besides the electricity and the environmental impact of the electricity used by AI data centres, they also consume enormous amounts of water through their cooling systems. Moreover, the short lifespan of AI hardware results in the growing mountain of electronic waste. These impacts are rarely taken into consideration.

As for efficiency gains, it should be understood that these may or may not result in decreased environmental impact. Indeed, Schwartz, Dodge, Smith, and Etzioni (2020) cautioned about the "rebound effect" wherein, as AI systems become increasingly efficient to use, they are used so extensively that any environmental benefit is negated or reversed. Adding to all of these issues is the lack of any standardized reporting or assessment of AI systems' environmental impact, which means it is impossible to compare studies, verify company claims, or know if things are getting better or worse. The same model may have vastly different environmental impact depending on where it was "trained" or implemented and how clean or dirty the local electricity supply is, but this regional factor is rarely taken into account in any study.

The lack of equality defined in this case should be highlighted. Poorer countries that had little to no say in the creation of AI are now being expected to house AI systems that are fueled by fossil fuel-intensive systems, which means that these countries are having to deal with the environmental impact of AI without any of the benefits that the developed world receives from it. Most of the environmental studies on AI are performed in countries with relatively pristine energy supplies, with little to no study of their impact on poorer countries.

SUGGESTIONS

Redirecting Environmental Focus from Model Training to Inference Operations

There's a common assumption that the environmental story of AI begins and ends with training those vast AI models. But that's only a fraction of the picture. The more AI is used, the larger this problem becomes, but this problem appears to be mentioned only occasionally in environmental studies and corporate sustainability reports. If companies are serious about reducing their AI footprint, they need to think hard about the service and optimization of models in production, not just in the model training.

Integrating Environmental Performance as a Core Organisational Criteria

One of the easiest changes an organisation can make is to actually consider environmental performance as a real criterion, as opposed to an afterthought. Currently, most organisations are only concerned with the level of accuracy, speed, and price of AI tools, while environmental performance, if considered at all, only appears in the context of a sustainability report, but not in any practical decisions related to AI tools themselves. The adoption of green AI technologies is more likely to be sped up if industries start actively evaluating AI tools based on their environmental performance, as opposed to waiting for external forces to force the issue upon them. The active consideration of environmental performance as a criterion of AI tool usage is precisely this kind of proactive approach, and any organisation can start doing this immediately without having to wait for anyone else

to start doing so first.

Addressing the Unequal Geographic Distribution of AI's Environmental Burden

Something that is rarely ever touched upon in green AI discussions is who actually bears the brunt of this environmental cost of green AI itself. The developed countries, in which most of the AI research and development takes place, are able to avoid this cost since their grid is cleaner and their regulatory environment is stronger in comparison to others. Green AI is all about fairness, and it is impossible to call it sustainable if it simply shifts from one part of the world to another.

Establishing Universal Standards for Environmental Measurement and Disclosure

At the moment, it is not possible to look at two AI systems and say with confidence how they will affect the environment. There is no standard, there is no methodology, and there is certainly no requirement for what a company should disclose. This is the same system that could have a vastly different carbon footprint simply based on the location of the system and the cleanliness of the electricity supply but rarely makes it into the environmental report.

CONCLUSION

The world is being transformed by artificial intelligence, and the technology has certainly provided real benefits to businesses and consumers and communities. However, every time artificial intelligence makes our lives more convenient, there is a price we pay and do not even know about it and the price is the environment. When someone asks an AI chatbot a query, books a delivery via an AI-powered platform, or receives a product recommendation, energy is being consumed somewhere in the world. Somewhere, a data centre is humming along, using energy, burning water to cool itself, and eventually producing hardware that will be discarded in the near future. Billions of these invisible costs are occurring every single day, and the world can no longer afford to ignore.

There is an AI sustainability gap between the rate at which we are embracing AI and the level of consideration we are giving to the environmental impact of AI. Most businesses do not know what their AI usage is costing the planet. They are not measuring it, not talking about it, and not building it into their decisions which needs to be changed.

Green AI as emphasized in this conceptual paper, cannot just be about making technology more efficient. Efficiency is important along with how organizations choose to use AI, how often, at what scale, for what purpose, and with what degree of transparency exist about the impact. These are questions for engineers, every manager, business owner, and leader who makes decisions about technology. Sustainable AI is ultimately not a technical problem with a technical solution.

Artificial intelligence has the potential to be the most powerful force the for positive change that the world has ever seen. Whether it realizes its full potential as a force for good or is just another cause of environmental damage is entirely up to the decisions that organizations make today. Future research should focus on developing standardised frameworks that allow organisations to measure and report the full environmental cost of AI usage across its entire lifecycle.

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Abbreviations:

AI- Artificial Intelligence

SMEs – Small and Medium Enterprises

SDGs – Sustainable Development Goals

CO_2 – Carbon Dioxide

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A Study on Green Marketing: Strategies and Challenges in Sustainable Business Promotion Practices

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ABSTRACT

he increasing global awareness of environmental issues has driven consumers toward eco-friendly products, making green marketing an essential aspect of contemporary business strategy. The concept of "going green" has significantly evolved, positioning sustainability at the forefront of corporate agendas. This study aims to critically examine the landscape of green marketing in India, exploring the concept's evolution, its strategic importance, and the challenges faced by businesses in this domain. By analysing secondary data from academic literature and credible sources, the study provides a comprehensive overview of the current state of green marketing in India. The findings highlight that the integration of green marketing practices not only enhances corporate competitiveness but also contributes to broader environmental goals. Nevertheless, the successful adoption of these strategies requires overcoming substantial barriers, including misconceptions about financial implications and the need for greater governmental support. Indian companies, in particular, are increasingly adopting green marketing strategies to appeal to environmentally conscious consumers and maintain competitiveness in an eco-aware marketplace. However, significant challenges persist, primarily concerning perceived costs and the effectiveness of these strategies. The paper concludes that every incremental effort towards environmental sustainability can significantly impact the resolution of contemporary ecological challenges. As such, the incorporation of green marketing strategies represents a logical and necessary progression for companies aiming to achieve long-term sustainability and societal benefits. The promotion of green marketing, supported by governmental incentives, is essential for fostering a greener future for current and future generations.

Keywords: *Green marketing; Corporate Social Responsibility (CSR); Indian companies; Sustainability; Green incentive.*

INTRODUCTION:

The concept of green marketing refers to using advertising practices that are not only eco- friendly but also sustainable. Green marketing has seen a steady rise in practical applications as sustainability and corporate governance gained importance not just locally but globally. This has also become a norm of sorts as not just the laws enforce them due to increase in issues such as climate change, pollution, and waste generation but also because consumers globally like to feel good about making a good impact on the globe, be it by using products that do not use plastic packaging, products that have not been tested on animals, or products that promotes green practices and planetary well-being. Fields and industries, especially ones like the FMCG, retail, and fashion industries have seen an increase in adoption of green marketing. This is mostly due to the fact that these industries are the major contributors to

emissions and wastage across the globe and are slowly trying to become sustainable and ecologically responsible in their operations and merchandising.

Though the concept is commendable and good conceptually, it has not translated in that same sense when it comes to practical application. There have been notable challenges when it comes to application of green marketing due to reasons such as consumers preferring the idea of eco- friendly and green products but not actually buying them due to financial constraints and higher prices compared to ones that are not eco-friendly or sustainable, sometimes there are no proper green alternatives available, and lastly corporations misinterpreting or misrepresenting their initiatives as green or more commonly known as greenwashing. Greenwashing is one of the prominent challenges of green marketing.

This study aims to analyze the green marketing strategies used by corporates and the above-mentioned challenges and reasons and how they impact the consumers perception and behavior globally. Therefore, by analyzing these, how can corporates mend their strategies in order to properly embody and practice green marketing in its true essence with minimal to no greenwashing in order to build trust in something that is truly creating a positive impact on not just the environment and climate but also the ecology and ecosystem of this planet we call home.

LITERATURE REVIEW:

Khan et al. (2022) examine the relationship between **green marketing** strategies, environmental attitudes, and consumers' green buying intentions. The study finds that elements of the green marketing mix, such as green products, green distribution, and green promotional strategies, significantly influence consumers' intention to purchase environmentally friendly products. The research also highlights that consumers with stronger environmental attitudes are more likely to support sustainable products and environmentally responsible brands. Yet, based on the results, one can state that the impact of green pricing on the consumer's decision-making process is relatively minor. Therefore, sometimes the environment will take precedence over price in consumers' decisions.

In the contemporary environment, green marketing has received considerable attention, especially regarding sustainability. In this regard, **Pragati Singh and Dr. Anjani Kumar (2022)** discuss the different phases of green marketing. They begin from the biological aspect, proceed to environmental issues, and finish with sustainability measures. The significance of this perspective is associated with its potential to demonstrate how the role of environmental factors changed during time within businesses. Moreover, the paper discusses the green marketing mix consisting of eco-friendly products, reasonable prices for them, limited resource consumption in their distribution, and advertising focused on green aspects. It appears that corporations may significantly impact the customers' decisions regarding purchases by using the described tactics. The mentioned research also presents a number of advantages like energy savings, resource conservation, and positive image of organizations. Nevertheless, numerous disadvantages are revealed, including the high cost of implementing new practices and the low level of consumer awareness. Furthermore, there is evidence that green pricing is not as influential as could be expected since, in some cases, people may consider ecological aspects even more important than prices.

The study by **Jabeen et al. (2023)** explores the connections between green marketing activities, corporate social responsibility (CSR), and the intention to purchase eco-friendly products. It is emphasized that the efforts made for CSR and green marketing help create a powerful green brand image. The authors consider green brand image to be an important mediating variable between green marketing and the purchase intention. The results indicate that companies showing their responsibility towards the environment tend to win the consumers' trust.

In their bibliometric study of the topic green marketing, **Jakub Michulek and Anna Krizanova (2023)** focus on 1,210 publications on green marketing published between 1991 and 2022 and extracted from the Web of Science database. According to the study, the key countries responsible for producing research on the matter are China, the US, and India. The top keywords identified by the study include “sustainability”, “consumption”, “behaviour”, and “green marketing mix”. There is a considerable growth in the number of publications on the topic observed in recent years – especially in 2021 and 2022 – and, according to the researchers, this can be explained by increasing attention across the world to sustainability issues.

The study by **Saeed et al. (2023)** suggests that green marketing is an important factor influencing customer attitudes and reducing issues related to greenwashing. According to the researchers, green elements like green promotion and a powerful green brand image contribute significantly to building the trust of customers in eco-friendly brands. The study highlights that consumers prefer purchasing green

goods when they recognize a firm's true intention towards sustainable development. Furthermore, it should be noted that being transparent may not be enough if organizations fail to practice environmental initiatives.

Sasidharan (2023) explores the attitude of consumers towards green marketing and environmental products. According to the results of the research, most consumers have a positive attitude towards green products and realize the need for sustainable businesses. Environmental consciousness, quality, and knowledge about green marketing activities are found to be important factors that affect consumer behavior. Moreover, demographic factors like gender appear to have a small impact on the knowledge of consumers about green marketing activities.

Sundaresan et al. (2023) analyze consumer attitudes towards green marketing in the FMCG industry. The authors show growing consumer consciousness in terms of environmental issues and increasing demand for sustainable products. The study finds that various factors including eco-packaging, product information, and green marketing practices have a considerable impact on buying decisions. The authors claim that companies need to develop better communication regarding the ecological benefits of their products.

Bhardwaj et al. (2024) explore the concept of green branding and the evolution thereof. The study identifies various important elements associated with green branding, such as green brand commitment, green marketing strategies, green brand equity, and greenwashing risks. It is evident from the results that communication transparency and sustainability measures are vital for improving customer loyalty and trust. Moreover, false statements concerning environmental measures may negatively affect brand reputation.

The concept of sustainability and the danger of greenwashing, which refers to the exaggeration of environmentally beneficial aspects of a product or service with no underlying change in operation, is brought forth by **Dr. Kusuma M. and Dr. Asifulla A. (2024)**. According to the authors, the field of green marketing needs to go further than mere symbols and must provide ways of improvement for companies' environmental performances through recycling practices, utilization of renewable energy, avoidance of plastics, and implementation of collective saving strategies. In addition, they stress the importance of diversity and inclusion for any company seeking to become sustainable by associating social responsibility with the environment as well. For example, companies like McDonald's and Zepto are making an effort by switching to paper bags, whereas Coca-Cola is harvesting rainwater.

Insights related to the use of green marketing by Indian companies have been provided by **Gautam Rawat and Mohan Chandra Pande (2024**). Their insights have been provided against the backdrop of the fast-paced industrialization of India and its economic liberalization. The obstacles they discuss include high production costs, lack of access to technology, regulatory risks, and resistance from consumers. Nonetheless, they mention a number of approaches that can be used to implement green marketing. These include educating customers, innovation, communicating effectively, and adapting the green initiatives.

In his paper, **Jinyoung Hwang (2024)** studies the association between green marketing and consumer behaviour in line with theoretical concepts, for example, Theory of Planned Behaviour and Triple Bottom Line. According to the results obtained within a mixed methods design, a positive correlation between exposure to green marketing activities and consumer trust is established; moreover, consumers' trust becomes the mediator influencing their purchasing behaviour. In addition, green marketing faces some barriers such as greenwashing and high expenses of its application. For green marketing to be successful, it should bring profits not only to the environment but also to consumers and companies.

Kaur's (2024) investigation of consumer perceptions and preferences about green marketing in India is an example of academic research on this topic. Specifically, the study demonstrates that there is a large body of consumers who are concerned about environmental problems and believe in the responsibility of businesses toward environmental sustainability. Still, the researcher identifies some barriers that may affect the purchasing process, including the increased cost of goods and lower availability of environmentally responsible products.

Another interesting piece of research that was conducted by **Kumar et al. (2024)** concerns sustainability awareness and purchasing practices of consumers within the Indian fast-fashion clothing industry. According to the authors, consumers' awareness of the problem has been growing. However, they identify some discrepancies between consumers' knowledge about the necessity of sustainable practices in the fast-fashion clothing industry and actual purchases. Such factors as the high price of clothing and lack of access to sustainable products prevent consumers from buying environmentally friendly clothes.

Green consumerism has been studied by **Mishra & Sharma (2025).** The researchers note that the rising environmental awareness among consumers has led firms to embrace sustainable marketing initiatives and eco-friendly methods of manufacturing. It should also be noted that the FMCG industry is a major source of environmental problems such as plastic pollution due to unnecessary use of packaging material. The researchers state that concerted efforts are needed by all stakeholders in ensuring sustainable consumption patterns.

RESEARCH GAP:

Many papers discuss green marketing mix and eco-labelling, but they fail to test whether these approaches are effective with regards to real-life behaviour and consumers in various cultures. Many studies warn about the risk of green washing, but they do not suggest ways to measure the effects of such an approach on customers' loyalty compared to green strategies which are authentic and true. Consumer attitude is frequently examined, but studies use self-reporting methods, thus failing to analyses the sustainability of eco-friendly buying behavior when higher prices or less availability of certain products become an issue.

First, the research analyses and charts trends in publications using terms related to sustainability, consumption, behavior, and CSR. Second, studies carried out in India consider such issues as environmental awareness, recycling, consumers' knowledge about the products, and quality, but they have limitations of convenience sampling and geographical nature, which prevents researchers from generalizing their results on a national and international level. Third, although many studies examine CSR, government initiatives, and institutions, there are no researches that explore the interaction between them through incentives and digitalization. All these deficiencies together indicate that future research needs to focus on longitudinal, interdisciplinary, and intercultural research, taking into account both corporate strategy and consumer behavior as well as policy approaches and digital marketing techniques.

OBJECTIVE:

Secondary data analysis and observing the difficulties in practice and perception of sustainable business promotion practices among global consumers.

RESEARCH METHODOLOGY:

The current paper represents a conceptual analysis which is done with the use of secondary data analysis. The concept of this study relies on previous papers and this methodology is proved to be valid since it relies on empirical evidence. For this reason, the research is conducted in credible academic databases.

For the purpose of conducting this research papers have been selected based on specific key words: Green marketing, CSR, Indian companies, Sustainability, Green incentives. The selected papers have been reviewed in terms of objectives, research methodologies and results.

Further, the analysis was conducted with the help of qualitative content analysis approach according to which common themes and patterns were highlighted among the selected literature. The aim of this analysis is to make a synthesis of current research findings in order to reveal trends and gaps in research and form reasonable conclusions about the impact of green marketing practices on consumers' purchasing behaviour and difficulties in sustainable business promotion practices.

FINDINGS AND SUGGESTIONS:

The findings from the study are as follows. Green marketing has emerged as an important tool for promoting green products and practices but due to lack of consumer and environmental awareness especially in India, where there is a large disparity in awareness in urban and rural areas, it proves challenging to actually carry out green marketing. Then adding Greenwashing to the mix only makes things more difficult as consumers lose faith and trust in green products over time. Also factors such as price sensitivity, product availability, and perceived quality significantly affect consumers' behavior and purchasing decision towards green products. Most often consumers are not willing to pay a premium for green products though it is more beneficial and not to mention how companies incur additional costs for manufacturing these green products and carrying out green marketing. Though, it can be observed that green initiatives and green marketing significantly improve brand image, reputation, and market perception of companies. Lastly, Green marketing is not only beneficial for the environment but is also crucial for long-term sustainability of businesses in India and across the globe.

Suggestions include, creating environmental and consumer awareness of green products and true

green marketing, helping them to understand what greenwashing can look like, and showing the consumers how the additional premium for green products is totally worth it because it is beneficial for the planet and is sustainable. This in turn will increase demand for green products and practices which will gradually help to cut costs incurred for producing these products and carrying out these practices. Companies must integrate sustainability into their core processes and make it an essence of their business which will help them better understand its purpose and prevent greenwashing, over and above that including eco-labels, certifications, and environmental information will help them increase transparency and provide all the necessary information to consumers to make informed decisions.

Lastly, Consumer engagement initiatives with the backing from government and collaborations with environmental organizations will help solidify green marketing practices and environmental responsibility among consumers. In future, researchers can examine the long-term effectiveness of green marketing strategies in influencing actual consumer purchasing behavior and promoting sustainable consumption across different industries and regions.

CONCLUSION:

Green marketing has developed into a connecting point between the business environment and corporate responsibility for environmental well-being, due to the growing tendency of customers who seek goods and services produced in line with the principle of sustainability. The major finding of this scholarly research lies in the fact that despite the development of the strategies that help firms to become more sustainable through sustainable production, ethical supply chain management, effective communication, and recycling, they still encounter obstacles that include costs, customer demands, inconsistent legislation, and possible deception. On the other hand, there is a trend of growing consciousness and interest of global customers in buying sustainable products, even though in practice they depend on price and availability and the trust in what corporations do. These issues also underline the significance of the impact of generational differences on the use of sustainable products and the role of digital marketing.

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Green Fintech: Synergy of Innovative Financial Technology and Environmental Sustainability

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ABSTRACT

At the intersection of finance, sustainability and innovation lies Green Fintech, an emerging paradigm that uses digital financial technologies to drive environmentally responsible investments, enhance financial inclusion and sustainability into the core of economic decision-making This paper is a conceptual research study that seeks to explore and examine the evolving body of knowledge within the field of advancements in environment friendly financial technology. The study is grounded in an extensive review of existing scholarly literature, theoretical models and prior research findings. The objective of this conceptual approach is to develop a comprehensive understanding of key themes of environmental sustainability in the world of FinTech. The rapid evolution of financial technology (FinTech) has significantly transformed global financial systems, reshaping financial inclusion, sustainability practices, and green investments. The reviewed studies collectively explore the intersection of FinTech innovation, green finance, and inclusive growth, emphasizing both opportunities and structural challenges within emerging and developed economies. The literature highlights FinTech's role in enhancing access to financial services through digital payments, mobile banking, AI-driven credit scoring, blockchain platforms, and peer-to-peer lending systems, thereby reducing transaction costs and expanding outreach to previously underserved populations. The papers reviewed showcase the attributes of Green Fintech and its contribution to environmental sustainability. Digital financial platforms facilitate ESG-aligned investments, carbon tracking, green bonds, and sustainable lending frameworks, promoting responsible capital allocation. Technological advancements enable improved transparency, data-driven sustainability reporting, and impact measurement, supporting climate finance objectives. However, while conceptual and theoretical discussions are extensive, empirical evidence quantifying the direct environmental impact of Green FinTech remains limited. An extensive review of existing literature on green fintech has helped in identifying key findings and developing relevant suggestions regarding green investments, financial inclusion, and environmental sustainability.

Keywords: *Environmental sustainability, Green investments, Financial inclusion, Green finance.*

INTRODUCTION

In the midst of fast-paced technological advancements and environmental concerns, the financial services industry is in the process of a significant revolution. With the rise of climate change and environmental degradation, people have now become more environmentally conscious of their financial choices and the effect of those choices such as promoting the importance of the finance industry in building a strong, sustainable and green

future for the world. Green Fintech is not only a product of financial technology, but it is also a deliberate shift in finance, focusing on sustainability and environmental health. Green Fintech is, in fact, a financial technology that promotes the integration of sustainability principles in the development, delivery and deployment of financial products and services. Financial technologies, like financial services have always been focused on delivering convenience and profit maximisation, however Green Fintech is shifting its purpose to incorporate sustainability and its effects on the environment and society as well. This is because there is now an increasing awareness among consumers, investors, regulators and institutions of the importance of financial markets in addressing the risks of environmental degradation and damage. One of the biggest contributions of Green Fintech towards the sustainability of the world is through "green investments". These are financial activities that are directed to supporting projects that are beneficial to the environment and helps in reducing damages caused by organisation. An example of this is renewable energy, energy efficiency, sustainable agriculture and clean technologies. There is democratization of access to these kinds of financial opportunities by the use of fintech. Therefore, it is now possible for small-scale investors to be able to participate in these kinds of financial opportunities that are beneficial to the environment. For instance, there are now available portfolios of environmental, social, and governance criteria, green bonds, and impact investments with lower minimum entry requirements and greater transparency. Through the use of advances in technology such as blockchain technology, machine learning and big data analytics, Green Fintech is contributing to the enhancement of environmental performance reporting. An example of this is that blockchain technology provides a transparent record that enables the tracking of the source and use of green fund thus reducing the risk of "greenwashing," which is defined as the act of making false or misleading claims about the sustainable and/or social performance of financial products. Machine learning algorithms have the ability to analyse large amounts of data to measure climate risk associated with financial assets.

One of the most prominent financial instruments in the realm of green finance is the green bond. The green bond, as a financial instrument, refers to a fixed-income instrument issued with the sole objective of raising money to fund environmentally friendly projects. Since the inception of this financial instrument, there has been tremendous growth in the green bond market. This growth boosts the digital platforms which are being developed to facilitate the issuance of this financial instrument, as well as the application of blockchain technology to ensure transparency in the process. In addition to the growth of the green bond, there has been tremendous growth in the fiel of equity-based green finance. This growth has been attributed to the application of fintech, which allows investors to directly invest in innovation projects that are environmentally friendly. For example, peer-to-peer investment platforms are being developed to allow environmentally conscious investors to partner with solar energy service providers, electric mobility startups and carbon capture technology firms. Fintech ensures that capital is efficiently directed towards emerging green industries.

Another notable change in green investments is the use of carbon markets and technology in tracking green investments. For instance, carbon credit trading platforms that use blockchain technology can be used by investors and companies to invest in carbon offsetting projects. These carbon offsetting projects may include reforestation projects, methane capture projects, or renewable energy projects in developing countries. The use of fintech innovations in carbon trading has made it credible and environmentally friendly. Another factor that has impacted the growth of green investments is the use of micro-investing apps. These apps have made green investments accessible to investors by providing platforms for investors to invest in green investments in small amounts of money. For instance, round-up features of these micro-investing apps can be used by investors to round up their change from daily transactions and invest in green investments. These features have made green investments accessible to young and first-time investors.

Financial inclusion is the base for sustainable development and it is also part of the Green Fintech ecosystem. Financial inclusion is defined as "a concept of providing access to financial services at an affordable price to individuals, households and businesses, particularly to those who are previously excluded from the financial system." Financial services include savings, credit, insurance, payment systems and investments. Financial inclusion, in terms of Green Fintech, is not just the concept of economic inclusion, it is also providing access to environmental sustainability in terms of financial opportunities. At the global level, there are millions of people who are outside the financial system due to geographical constraints, high transaction costs, lack of documentation, financial illiteracy and socio-economic disparities. However, after the emergence of the digital revolution in financial technology, these barriers have been overcome to a large extent. The emergence of mobile banking, digital wallets, biometric identification technology and cloud

computing has enabled the financial system to reach the rural population and the informal sector, who are previously excluded from the financial system. The idea of Green Fintech extends the advantages of FinTech to include the newly added population in green financial opportunities. Therefore, women's financial inclusion is of critical importance. Digital financial platforms provide women entrepreneurs with access to different financial services such as microfinance, savings, and e-payments. Women in rural areas participate in economic activities such as agriculture, handicrafts, and trading. Green finance provides women in rural areas with access to green practices in their economic activities, renewable energy equipment and climate change mitigation. Therefore, Green Fintech promotes gender equality and green sustainable practices. Small and medium-sized enterprises benefit greatly from green finance. Small and medium-sized enterprises are of critical economic importance in different countries in the world. However, these enterprises face different challenges in accessing green finance. Digital financial platforms provide these enterprises with access to green loans easily. This reduces costs associated with applying for loans. Green finance promotes green sustainable practices in these enterprises. Green credit provides these enterprises with access to green technologies, green supply chains, and green manufacturing.

Digital literacy and financial education are important components to the success of financial inclusion initiatives. Financial technology products and services have employed various features to provide education to their customers. Gamification-based savings platforms are used to encourage good financial habits among customers. In addition, financial technology platforms are used to impart financial education to customers, which includes information on the impact of financial decisions on the environment, as a result of the incorporation of sustainability into financial education.

Another important innovation in the Green FinTech industry is the ability of financial technology platforms to track the carbon footprint of customers, which has important implications for the advancement of environmental sustainability. In the current financial technology industry, various financial technology platforms have the ability to provide people and businesses with information on the impact of their spending habits on the environment in real-time. In addition, financial technology platforms are able to provide people with the ability to offset their carbon footprint through the purchase of verified environmental projects. The promotion of financing of renewable resources forms part of environmental sustainability. Digital financing platforms give access to finance for solar energy, wind energy, hydro energy and energy storage. This makes renewable energy financially viable through cost reduction and ease of processing. Decentralized finance can be used in community-based renewable energy. This will empower the community at large to produce energy while keeping the benefits within the community. Fintech is also important in the conservation of water, which is an issue that is becoming more and more important as the problem of water shortage comes into focus globally. Fintech can give access to financial technology for the conservation of water through the use of technologies such as efficient irrigation systems, water purification technologies, and rainwater harvesting systems. Fintech can also give access to credit for farmers and communities interested in the conservation of water but lack the funds for the practice.

For example, microfinance institutions that utilize fintech technologies can provide loans for the purchase of drip irrigation equipment, which conserves water and improves agricultural productivity. Financial technologies can also provide data analytics for the assessment of water consumption patterns and provide financial support for projects that promote water conservation practices. Smart contracts and blockchain technology can also be applied in the management of funds allocated for water conservation projects thus ensuring that funds are properly utilized for the projects. Fintech can thus play an essential role in the promotion of sustainable water management practices.

REVIEW OF LITERATURE

1. **Imran Khan and Mohammed Sadiq Shahid (2026)** in their work "The Nexus between Fintech and Green Finance in Advancing Sustainable Performance across Countries" examine the nexus between fintech and green finance in various nations. It is established that countries where fintech is highly developed will be more ready to make sustainable investments and environmentally sound financing. The authors emphasize that fintech allows for effective financial resource allocation, contributing to environmental sustainability and economic growth.

2. **Gita Devi (2025)** in her paper "Financial Literacy and Sustainability: Role of Fintech in Promoting Green Finance" examines the impact of fintech on financial literacy and green finance. In particular, it is stated that the use of fintech helps raise awareness about the need for sustainable investment and environmentally

friendly behaviour of individuals from the financial perspective. As a result of the increase in accessibility of financial information, people become more willing to buy green financial instruments.

3. **In the research paper "Green Fintech and its Impact on Sustainable Finance," Rahul Autade (2025)** studies the impact of fintech advancements on the creation of sustainable financial systems in terms of environmental aspects. The paper mentions that green fintech helps with responsible investing, climate risk analysis, and transparent transactions. It is stressed that the incorporation of ESG aspects in digital financial systems will be key for sustainable finance. The results of the study indicate that fintech can help achieve sustainable finance goals by encouraging responsible investments and environmental sustainability.

4. **Dipti J. Gowdar, Maruthi N., and Kumara M. (2025)** study the significance of green fintech in their conceptual paper and analyze the existing fintech solutions to promote green finance. The authors pay attention to several fintech approaches to green finance, including digital platforms for investment, crowd financing for renewable energy initiatives, and blockchain for increased transparency.

5. **Anukriti Mishra, Vishal, and Kranti Singh (2025)** in their study titled "Green Investment in India: A Green Fintech Perspective" study the potential of fintech technology in facilitating green investments in India. The authors stress that fintech technology allows for simplification of the process of making investments and ensures greater transparency of such operations for environmentally sustainable projects. According to the authors, fintech may contribute to increased investor engagement in renewable energy and sustainable development projects. Consequently, the study reveals a high potential for fintech development in the field of green investments.

6. **Vasundra Singh (2025**) in the article "Role of Fintech in Financial Inclusion" studies the potential for fintech technology in addressing challenges of financial inclusion in developing countries. Specifically, the author focuses on the potential of digital payments, mobile banking, and peer-to-peer lending platforms in ensuring greater accessibility to financial services and products for rural and low-income communities.

7. **Kingsley I. Okere, Stephen Kelechi Dimnwobi, Ismail O. Fasanya, and Ogoamaka Lilian Umeajaghaku (2025)** in the study *"Advancing Environmental Sustainability through Fintech, Structural Transformation and Resource Diversification in Emerging Economies"* examine how fintech contributes to environmental sustainability in developing countries. The study finds that fintech supports structural economic transformation by facilitating green investments and promoting resource efficiency. The authors emphasize that fintech innovations can help emerging economies transition toward more sustainable development models.

8. **Mohammad Basid, Amnas Murugesan Selvam, and Satyanarayana Parayitam (2024)** in the research "Fintech and Financial Inclusion: Exploring the Mediating Role of Digital Financial Literacy and the Moderating Influence of Perceived Regulatory Support" investigate the importance of fintech for the increase in financial inclusivity. Specifically, it is stated that the effectiveness of financial technologies largely depends on the level of digital financial literacy. Besides, the importance of regulatory support is emphasized. Thus, it can be concluded that improvements in the field of digital financial literacy and regulation may positively affect the contribution of fintech.

9. **Zaheer Ahmed (2024)** in the study "The Role of Fintech in Promoting Sustainable Finance in India" focuses on the ways fintech promotes sustainable finance in the Indian financial environment. First of all, it is noted that fintech helps attract green investments, provides more transparency regarding sustainable finance practices, and allows allocating resources for financing eco-friendly ventures. Furthermore, fintech innovations, including blockchain and artificial intelligence, help monitor the sustainability of investments and prevent greenwashing. Overall, the study states that fintech can greatly benefit sustainable finance in India

10. **Abdulhadi Ibrahim, Nashat Ali Almasri, Faozi A. Almaqtari, Omar Al-Kasasbeh, Zaidoon Alhatabat, and Diala Ershaid (2024)** examine the association between fintech evolution and environmental sustainability in their research "The Impact of Green Finance, Fintech and Digital Economy on Environmental Sustainability". It is established that there is a direct impact of fintech advancement and digital economic progress on achieving better environmental sustainability

through green finance and resource management.

11. **Neeti Mishra, Sumeet Gupta, and T. Joji Rao (2024) explore the role of fintech in green finance in their research entitled "Fintech's Role in Green Finance:** Procuring Funds for Sustainable Energy". According to the findings of the paper, fintech services are significant for fund raising aimed at developing sustainable energy technologies. The researchers emphasize the importance of digital financial tools (crowdfunding and P2P lending systems) for financing renewable energy projects.

12. **Sashikala C. S., Rajini K. S., Bhargavi Iyer B. S., and Mokshmala U(2024**) have studied the topic "Green Fintech: An Analysis of Financial Solutions and Sustainable Practices in Fintech Companies" to find out sustainable financial practices used by fintech companies. It is found out from the paper that companies operating in the field of fintech take measures for environmental protection within their activities by providing green financial products. Thus, the authors emphasize that fintech firms can make a significant contribution to the development of environmentally friendly financial systems.

13. **The study "Impact of Green Financing, Fintech and Financial Inclusion on Energy Efficiency" by Hongda Liu, Pinbo Yao, Shahid Latif, Sumaria Aslam, and Nadeem Iqbal (2021**) explores the relationship between green financing, financial technology, and energy efficiency with the help of empirical data. According to the conclusions of the authors based on their research findings, it can be stated that fintech innovations increase the impact of green financing because of improved financial accessibility and efficient investments**.**

14. **Thorsten Beck (2020), "Fintech and Financial Inclusion: Opportunities and Pitfalls" –** Thorsten Beck offers a detailed discussion on the benefits and obstacles that fintech presents when it comes to the financial inclusion process. The author notes that fintech innovations can greatly boost financial accessibility, especially in developing countries. Nevertheless, he mentions some pitfalls like cybersecurity problems, regulation problems, and digital divide. The main finding of the research is that regulation plays a keyrole in ensuring fintech developments in terms of security and inclusiveness.

15. **Krishnendu Ghosh (2020), "Role of Fintech in Green Finance and Sustainable Development" –** Krishnendu Ghosh examines the relationship between fintech innovations and their role in promoting green finance and sustainable development. The researcher claims that fintech helps to make financial transactions more efficient and enables funding for projects connected with renewable energy and environmental sustainability. Therefore, the author concludes that fintech can be helpful when it comes to achieving sustainable development goals.

RESEARCH GAP

A brief analysis of the existing literature on the field of fintech, green finance, and sustainable development reveals the following:

While there has been considerable progress in the field of understanding the role and significance of financial technology in promoting sustainability in the global environment, there are certain gaps in the field that need to be explored.

While the existing literature in the field, such as the research studies published by Zaheer Ahmed (2024) and Rahul Autade (2025), has highlighted the growing role and significance of fintech in promoting sustainable financial practices and green investments in the global economy, the majority of the literature has focused on the conceptual relationship between fintech and sustainability in the global environment. In the same way, studies by Gita Devi (2025) and Vasundra Singh (2025) emphasize the need for financial literacy and the use of financial technology in promoting financial inclusion and ensuring financial sustainability. Although the studies are successful in establishing the use of financial technology in promoting financial inclusion, most studies do not explore the link between financial inclusion using financial technology and environmental sustainability in practical terms. Therefore, there is a lack of studies that explore financial inclusion using financial technology in promoting environmental sustainability.

Studies by Anukriti Mishra, Vishal, and Kranti Singh (2025) and Neeti Mishra, Sumeet Gupta, and T. Joji Rao (2024) explore the use of financial technology in promoting green investments and ensuring financial sustainability in the energy sector. Although the studies are successful in establishing the use of financial technology in promoting green investments, most studies do not explore the long-term effects of green investments in promoting environmental sustainability and economic development.

In addition, research by Thorsten Beck (2020) and

Mohammad Basid et al. (2024) investigates the role of fintech in financial inclusion and discusses the opportunities and risks associated with financial inclusion through digital financial services. Although these studies add significant value to a clear comprehension of financial inclusion through fintech services, these studies fail to discuss how financial regulations can affect the overall development of green fintech ecosystems or financial innovations for sustainability. Recent studies like those of Imran Khan and Mohammed Sadiq Shahid (2026) and Kingsley I. Okere et al. (2025) discuss the relationship between fintech, green finance and sustainability in different nations of the world. Although these studies have shown a significant relationship between technology innovation and environmental sustainability, they are based on cross-country analysis and have left a gap in studies related to developing economies and fintech applications in different sectors of the economy.

Moreover, studies like those of Deepti J. Gowdaar, Maruthi N., and Kumara M. (2025) and Sashikala C. S., Rajini K. S., Bhargavi Iyer B. S., and Mokshmala U. are based on the concept of green fintech and sustainability in finance, which do not provide enough evidence related to the implementation of green fintech solutions in the real world of finance.

Therefore, the existing literature reveals the following research gaps, Firstly, there is a lack of integrated studies on green fintech, financial inclusion, and environmental sustainability from an intersectional perspective. Secondly, there is a lack of empirical studies on the Indian scenario that examine the influence of fintech-based financial services on green investments and sustainable development. Thirdly, there is a need for additional studies to examine the implementation and environmental implications of green fintech practices. By filling these gaps in the existing literature, it is anticipated that a more comprehensive understanding can be achieved on the effective contribution of fintech to sustainable finance, environmental protection, and sustainable development in emerging economies.

OBJECTIVES

1. **Assess how digitally-driven financial innovation (FinTech) has contributed to financial inclusion** and understand fintech's impact on **financial literacy**, **digital-banking accessibility**, **cost reduction**, and **income development**.
2. Why individuals adopt FinTech services with respect to its environmental impact and how that adoption influences their access to formal financial services.
3. **Explore the role of Green FinTech through financial instruments**, showing how digital innovations can lower carbon footprints and improve green-investment flows.
4. To examine how FinTech tools are adopted and used by investors, financial institutions and other stakeholders in green-energy projects.

FINDINGS

One of the significant findings of the literature reviewed is the importance of fintech in promoting sustainable finance and green investments. For example, in his studies, Zaheer Ahmed (2024), Rahul Autade (2025), Krishnendu Ghosh (2020), and Neeti Mishra et al. (2024) highlighted the importance of fintech in facilitating the efficient mobilisation of financial resources for environmentally sustainable projects and activities. For instance, digital financial technologies such as blockchain technology, crowdfunding platforms, robo-advisory services, and peer-to-peer lending platforms have enhanced the ability of investors to support green investments in renewable energy projects and environmentally friendly business ventures.

Another significant finding of the literature reviewed is the importance of fintech in promoting financial inclusion in society. For example, in his studies, Vasundra Singh (2025), Thorsten Beck (2020), and Mohammad Basid et al. (2024) highlighted the importance of fintech in promoting financial inclusion in society through its ability to bridge the gap between traditional financial institutions and the underprivileged in society who lack access to banking services. Fintech reduces geographical barriers and simplifies financial processes, enabling rural populations, small businesses and low-income groups to participate in the financial system. Improved access to financial services also provides opportunities for individuals and businesses to invest in sustainable economic activities. The literature also collectively highlights the importance of financial literacy and digital literacy in maximizing the effectiveness of fintech innovations. The study by Gita Devi (2025) highlights that increased financial literacy enables individuals to understand the importance and the way to use green finance and thus inspires them to make environmentally conscious financial choices. Similarly, another study by Mohammad Basid et al. (2024) highlights that increased digital financial literacy is also a key mediating factor in maximizing the effectiveness of

fintech innovations in promoting financial inclusion. These studies collectively highlight that it is very important to improve financial and digital literacy in order to ensure that fintech innovations are effective in promoting sustainable development. Another important finding that can be derived from the above studies is the increased role that cooperation between governments, financial organizations and fintech organizations plays in the development and implementation of sustainable finance and environmental protection strategies. In this context, it is noted that without the proper support of the relevant policies and regulations, the development and implementation of green fintech technologies could be faced with significant challenges.

SUGGESTIONS

One of the main recommendations is the development of clear regulations in green fintech and sustainable finance. Various studies have indicated that there is a lack of standardised criteria in the identification and evaluation of green financial products. Therefore, it is recommended that governments and relevant regulatory bodies develop clear taxonomies that clearly indicate what green finance is. This would ensure that green finance is not merely being used as a means to carry out greenwashing activities but is indeed making a significant contribution to the environment. This would, in turn, instil confidence in green finance and hence encourage the development of sustainable finance markets. In addition, it is equally imperative to improve digital infrastructure and internet access to leverage the benefits of fintech fully. For example, in many developing countries, the lack of access to reliable internet services is one of the main challenges that has hindered the adoption of fintech services by individuals in these countries. Consequently, it is essential for governments and policymakers to improve digital infrastructure, especially in rural areas. This will enable people to access digital services, thus promoting financial inclusion as well as sustainable activities. Another key suggestion is to promote not only financial but also digital literacy among people. Financial literacy is one of the key aspects to be taken into consideration while promoting people to understand different types of financial products as well as make appropriate decisions in regards to investment as well as savings. Financial institutions, educational institutions, as well as government agencies, should collaborate to promote financial literacy campaigns, especially on digital financial services as well as green finance. Financial literacy is essential for promoting people to engage in sustainable financial activities.

Lastly, it is essential to ensure the implementation of appropriate cybersecurity measures as well as consumer protection mechanisms within the fintech environment. It is evident that fintech environments utilize digital technologies as well as user data. Therefore, it is essential for government to implement appropriate data protection regulations as well as cybersecurity measures to ensure the safe usage of digital financial services.

CONCLUSION

The overall analysis of the chosen research papers reveals the increased importance of financial technology in the development of sustainable financial systems that can contribute to environmental and social development. The analysis of the research papers reveals that financial technology has become an important tool that can contribute to the development of green finance, financial inclusion and environmental sustainability in different economies.

Overall, the analysis of the research papers reveals that financial technology has the potential to be a powerful tool that can contribute to the development of a sustainable financial system that can be beneficial for economic and environmental development. Therefore, it is important to continue the development and application of financial technology to realize its benefits and contribute to the development of a sustainable financial system that can be beneficial for economic and environmental development. In conclusion, fintech represents a critical driver in the transition toward sustainable finance and responsible economic development. As technological advancements continue to evolve, the integration of fintech with green finance and financial inclusion initiatives will become increasingly important in addressing global challenges such as climate change, resource scarcity, and social inequality. Through strategic policies, technological innovation, and inclusive financial practices, fintech can contribute significantly to achieving long-term environmental sustainability and equitable economic progress.

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Fraud Justification in Financial Decision-Making Among Students: A Behavioural Study

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ABSTRACT

Fraud justification represents a critical behavioural mechanism through which individuals rationalize unethical decisions under situational and psychological influences. This study focuses on fraud justification as an ethical decision-making outcome under situational pressure, psychological rationalization, and social and ethical controls among students. It is grounded on behavioural ethics and rationalization theory, which analyzed data from a survey of 93 respondents using correlation, regression, and ANOVA techniques. The study revealed that situational pressure and psychological rationalization have a significant and positive impact on fraud justification, while social and ethical controls have minimal impact. Although fraud justification is low, its occurrence under certain circumstances justifies its focus. This study adds to the body of knowledge on behavioural fraud and ethics in that it highlights that situational and cognitive factors outweigh normative factors in influencing ethical decision-making. It is evident that, ethical decision-making is more influenced by situational pressure and psychological rationalization than by ethical theories. It is therefore imperative to integrate ethics education that addresses situational and behavioural issues in ethical decision-making.

Keywords: *Fraud Justification, Fraud Triangle, Ethics, Behavioral Ethics, Accounting, Finance*

1. INTRODUCTION

Fraud persists to be one of the most complex challenges faced by organizations, financial institutions, and governing bodies worldwide. Even with advances in internal controls, auditing standards, and regulatory measures, financial fraud incidents persist broadly, leading to substantial economic damage and undermining stakeholder trust *(Murphy & Dacin, 2011).*

Fraud in India seems to be rapidly growing, as per the RBI's announcement of December 2024, highlighting the fraud losses of Indian fiscal year grew by a factor of 8, amounting to Rs. 21,367 crores and cyber fraud of Rs. 22,845 crore with registration of 36.37 lakh cases, clearly pointing the growing accounting manipulation and misappropriation of funds in organizations (BioCatch, 2025). In this context, increasing cases of accounting manipulation, misappropriation of funds, and financial misconduct have emphasized on the need to examine not only the structural weaknesses in systems, but also the behavioural and psychological aspect of fraud, meaning the 3rd element of Fraud Triangle

Rationalization (cognitive justification) developed by Donald R Cressey.



Source: Donald R Cressy

The conventional approach to fraud research has primarily focused on detection systems, compliance, and forensic analysis. Nevertheless, the current academic literature strongly suggests that fraud is more than just a consequence of opportunity and financial duress, but is also significantly affected by an individual's capacity to rationalize unethical conduct. This mental function is generally described as fraud justification and enables an individual to justify their unethical conduct as acceptable, temporary, or harmless in specific circumstances.

Rationalization together with pressure and opportunity acknowledges the mental calculation by which an individual justifies their own fraud as morally acceptable, often by shifting responsibility to external circumstances, downplaying the significance of the fraudulent act, or perceiving their own unethical conduct as a justified right (Cressey, 1919). This is especially relevant in academic and early professional settings, where ethical standards are still being developed. Students of commerce, finance, accounting, and management studies comprise the future professionals who will be employed in financial decision-making roles demanding high ethical accountability *(Mohannad Obeid Al Shbail & Husam, 2021)*. It therefore, makes it extremely important to understand their perceptions regarding fraud justification and ethical boundaries.

Despite the efforts of various international studies to comprehend ethical reasoning and fraud risk, empirical research on the fraud justification tendencies of Indian students in the context of higher education is relatively limited (IJEBAR, 2023).

In light of this, this study aims to evaluate the tendency of fraud justification among students, particularly from a finance and accounting perspective. By understanding the relationship between ethical perceptions, fraud justification and reasoning, this behavioural study hopes to contribute to ethics in financial and accounting curriculum.

Denial of harm, necessity, entitlement, blame shifting, and minimization which played a 42% role in the pressure and opportunity factors. Recent research has broadened out these elements to include stable personality traits and technical skills. (Murphy, 2012) reported that those whom we term high-Machiavellian individuals do 37% better at rationalizing financial misreporting in fuzzy reporting settings. Also, (Dian Anita Nuswantara, Ach Maulidi, 2020) put forth a dual causation theory which separates out "self-caused" triggers (narcissism and low self-control) and "circumstance-caused" triggers (financial difficulty) which they say play into the issue of internal predispositions which in turn lower the rationalization threshold. The move to the Fraud Diamond Theory, which includes "capability" in the base triangle, was supported by (S. M. Ferdous Azam, Isuri Dharmaratne, Gamlath Mohottige Mudith Sujeewa, Mohd Shukri Ab Y, & Ali Khatibi , 2018), who report that this four-element model accounts for 68% of the variation in fraud cases and also that rationalization is a very large player in the capability, which we see in the behaviour of very confident executives.

In the field of what pertains to students and students we see still very much of great importance research attention as they are the future which we are shaping via our financial decisions. (Eva Dias-Oliveira, Catarina Morais, Rita Pasion & Julia Hodgson, 2024) report that student populations are proper subjects for this research which we see play out in the fact that we see the rationale behind academic fraud as a path way to that which we may see in professional life. At the same time (Yang, M., & Chen, Y, 2023) report that which we may see is an inverse relationship between financial literacy and fraud that at high and low levels of literacy we see low risk of fraud but at moderate levels we see over confidence which in turn is used to rationalize risk taking and unethical financial decisions. In markets like that of India we see this research made very urgent by the great growth of financial fraud which saw losses of 21,367 crores in the first half of fiscal year 2025. Also, we see that (Chimonaki, C., Papadakis, S., & Lemonakis, C, 2023) report a large gap in our literature which reports only 18% of fraud studies use validated psychometric measures for rationalization. Also (Saluja S, Aggarwal A, Mittal A, 2022) report that young offenders mainly use "peer normalization" and "temporary borrowing" as their main methods of rationalization.

These studies report that we have a large research gap which is specific to India's population of students from commerce and management backgrounds. While we do have a strong body of work which looks

at the what, how and why of fraud in Western and some Southeast Asian professional settings the literature is thin on the issue of what roles play situational pressure and psych rationalization in the ethics judgment of Indian youth. As these students will soon be in positions of great ethical responsibility it is of great import we study their fraud narratives. This study we put out is an attempt to fill that void by looking at the play of situational and cognitive factors against normative ethical controls in the Indian higher education setting. By bringing to light these behaviour triggers we put forth a base which in turn will help in the design of targeted ethics education that is responsive to the real-world issues of financial misdeed.

Limited studies examines the aspect of fraud justification & rationalization in the context of students' financial decision-making, with most studies conducted on professional fraud or cheating in academics (Widianingsih, 2013) (Yang, M., & Chen, Y, 2023). There is a significant gap seen in the literature related to the India-specific behavioural patterns of students from a commerce, management, economics, accounts, and finance background, which represents the future generation of financial decision-makers in the face of rising fraud losses (₹21,367 crore FY25) (BioCatch, 2025).

Considering the rising incidence of financial fraud in India, it becomes important to explore how young adults perceive and rationalize unethical financial behaviour.

Against this backdrop, the present study seeks to understand the extent to which students justify fraudulent actions within financial decision-making contexts. In doing so, it also examines the behavioural and situational factors that may influence such justification, particularly the role of cognitive rationalization and situational pressure as emphasized in the Fraud Triangle and Fraud Diamond frameworks. Special attention is given to understanding how situational pressures may shape ethical judgment and decision-making among students when confronted with financial dilemmas. By analysing how these factors shape ethical judgment among students, the study aims to provide deeper insight into the psychological mechanisms that enable individuals to rationalize unethical financial behaviour. In line with these theoretical perspectives, the study assumes that behavioural and situational factors play a significant role in influencing fraud justification among young adults.

Based on the theoretical framework of the Fraud Triangle and Fraud Diamond theories, the study proposes the following hypotheses to examine fraud justification in financial decision-making among students.

H_{01}: There is no significant level of fraud justification in financial decision-making among students.

H_{11}: There is a significant level of fraud justification in financial decision-making among students.

H_{02}: Behavioural and situational factors do not have a significant influence on fraud justification in financial decision-making.

H_{12}: Behavioural and situational factors have a significant influence on fraud justification in financial decision-making.

2. MATERIALS AND METHODS

The current research is descriptive and analytical in nature and is intended to explore the perception of students towards the justification of fraud in financial and accounting settings. The research is centred on understanding the ethical reasoning and rationalization tendencies linked with fraudulent activities.

The research is grounded on both primary and secondary data. The primary data, gathered using a structured questionnaire method. Conducted among undergraduate and postgraduate students. The secondary data, collected from research articles, journals, textbooks, and internet resources related to fraud, ethics and forensic accounting.

The population for the research includes students enrolled in commerce and management-related courses. The convenience sampling method was used to choose the respondents for the research. The study followed established behavioural research norms, where a total of 93 respondents were selected for the research. While the sample size is modest, it is adequate for the analytical techniques employed and aligns with prior behavioural studies examining fraud-related attitudes.

The structured questionnaire was developed using a four-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree. i.e (5-1)" The questions were designed in an indirect and situational way to determine the respondents' attitude towards fraud justification while maintaining confidentiality and reducing response bias.

Following the data collection process, the responses obtained from the 93 participants were compiled and organized into a master dataset to facilitate statistical analysis. This dataset forms the empirical basis of the study and includes the coded responses for each questionnaire item measured on the four-point Likert scale. The structured dataset enabled the application of statistical techniques to examine the research objectives and test the proposed hypotheses.

Accordingly, analytical methods such as the One-Sample t-test, One-way ANOVA, correlation, and regression analysis were employed to interpret the relationships and patterns within the collected data. The table below presents the master dataset used for conducting the statistical analysis in the study.

Sl. No	Questions	Options	Frequency
1.	**To what extent do you agree with the following statements regarding justification of unethical financial actions?**		
a)	Manipulating small financial figures is acceptable if no one is directly harmed.	Strongly Disagree	16
		Disagree	25
		Agree	40
		Strongly Agree	12
b)	Temporary misuse of company funds is justifiable if repayment is intended.	Strongly Disagree	17
		Disagree	30
		Agree	32
		Strongly Agree	14
c)	Financial misreporting can be justified under extreme pressure.	Strongly Disagree	17
		Disagree	32
		Agree	35
		Strongly Agree	9
d)	Ethical values are more important than financial success.	Strongly Disagree	7
		Disagree	14
		Agree	42
		Strongly Agree	30
2.	**To what extent do situational pressures influence ethical decision -making in financial contexts?**		
a)	Meeting performance targets can sometimes justify adjusting financial numbers.	Strongly Disagree	10
		Disagree	25
		Agree	46
		Strongly Agree	12
b)	Fear of failure can influence ethical compromise.	Strongly Disagree	5
		Disagree	18
		Agree	43
		Strongly Agree	27
c)	Financial stress increases the likelihood of justifying unethical decisions.	Strongly Disagree	4
		Disagree	12
		Agree	56
		Strongly Agree	21
d)	Strict monitoring reduces the chances of financial misconduct.	Strongly Disagree	7
		Disagree	15
		Agree	42
		Strongly Agree	29
3.	**To what extent do personal beliefs and psychological tendencies affect justification of financial misconduct?**		
a)	It's just a "one-time act" makes unethical behaviour easier to accept.	Strongly Disagree	13
		Disagree	28
		Agree	38
		Strongly Agree	14
b)	If no one notices the act, it feels less unethical.	Strongly Disagree	12
		Disagree	31
		Agree	34
		Strongly Agree	16
c)	People often justify fraud as "temporary borrowing".	Strongly Disagree	10
		Disagree	21
		Agree	45
		Strongly Agree	17
d)	Blaming circumstances makes unethical financial actions easier to accept.	Strongly Disagree	14
		Disagree	21

3. RESULTS AND DISCUSSION

Objective 1

"To examine the extent of fraud justification in financial decision-making among students."

Statistic	Value
Sample Size (n)	100
Mean	2.3175
Standard Deviation	0.6008
Test Value (neutral point)	2.5
t-value	-3.0378
p-value	0.0030

Source: Calculated from the master dataset presented in the study (Table 1

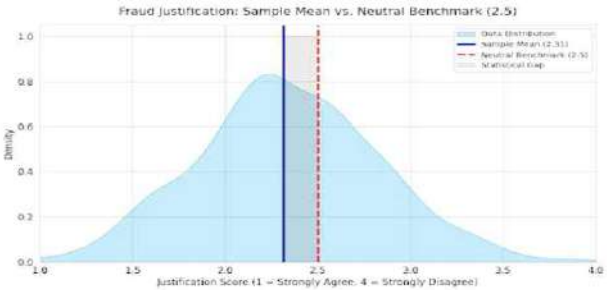


Table 2 shows the result of one-sample t-test to assess whether (insert hypothesis). The result shows the neutral midpoint is 2.5 and the average score of 2.3175 was lower than the midpoint of 2.5, which implies that there was a general trend of disagreement for justifying fraudulent financial behaviour.

The t-value was -3.0378, and the p-value was 0.0030, which was lower than the 0.05 significance level. As the p-value was lower than 0.05, this implies that the results were statistically significant, and therefore, **the null hypothesis was rejected.** There was a statistically significant difference between the actual level of fraud justification and neutrality, and students had a significantly lower level of justifying fraudulent financial behaviour. This implies that even though there was a theoretical basis for rationalization of fraudulent financial behaviour, the sample of students had a strong ethical resistance to financial misconduct.

Conceptual Implication

The results showed that students had a moderate level of ethical orientation, but the average was only

slightly lower than 2.5, implying that the level of justification was not completely absent.

Item-Level Variation in Fraud Justification

To examine whether respondents reacted uniformly to different forms of fraud rationalization, a one-way ANOVA was conducted.

TABLE 3: ANOVA RESULTS ACROSS THE OPINION OF RESPONDENTS

REGARDING JUSTIFICATION OF UNETHICAL FINANCIAL ACTIONS

Source	SS	df	MS	F	p-value
Between Groups	13.52	3	4.51	5.88	0.001
Within Groups	282.11	368	0.77		
Total	295.63	371			

Source: Calculated from the primary dataset presented in the study (Table 1)

One-way ANOVA analysis was performed to examine the level of agreement on the four fraud justification statements. The calculated F-value is 5.88, and the calculated p-value is 0.001, implying that there are significant differences in the mean response for the four statements. *This implies that students are not likely to react to all forms of fraud justification in the same way.*

In particular, it is observed that: Justification under extreme pressure elicited a relatively higher level of agreement.

- "Ethical values over financial success" (reverse-coded) elicited a higher level of ethical value.
- "Temporary use of funds" and "Manipulating small figures" elicited a moderate level of response.

Significance in the differences in response levels supports the behavioural decision theory, implying that ethical judgment is sensitive to context and cannot be generalized. In the context of fraud, it is observed that rationalization is situationally, rather than globally, endorsed, implying that the dynamic view of rationalization in the Fraud Triangle is valid.

Conceptual Implication

Fraud justification is a multifaceted, rather than a singular, construct. Individuals are more likely to be tolerant if unethical behaviour is justified on the grounds that it is temporary, harmless, or under pressure, implying that intervention programs should address contextual, rather than value-based, cognitive distortions.

Hypothesis Testing for Objective 1

As the results of the one-sample t-test indicate that the average score for fraud justification (M = 2.3175) was significantly different from the neutral midpoint of 2.5, t = -3.0378, p = 0.0030, < 0.05, we conclude that this difference was statistically significant.

Decision:

Reject H_{01}.

Conclusion:

There was a statistically significant level of fraud justification present in students.

As the average score was significantly lower than the midpoint of 2.5, we conclude that students have a tendency to disagree with fraud justifying statements, indicating a relatively low, yet statistically significant, level of fraud justification in financial situations.

OBJECTIVE 2

"To analyse the influence of behavioural and situational factors on fraud justification."

Statistical Techniques Used:

A. Correlation

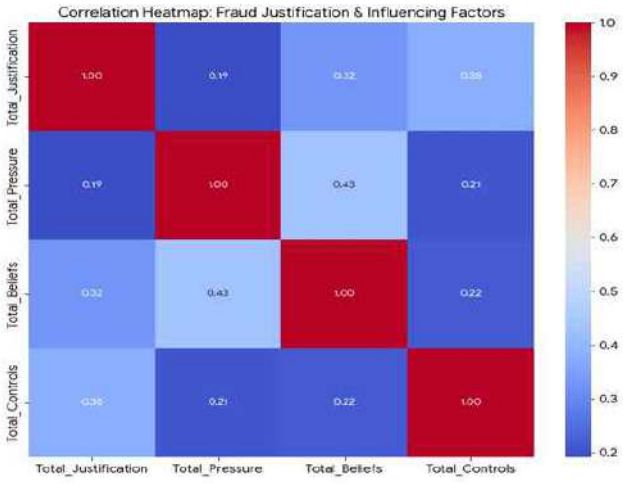
B. Multiple Regression

A. Correlation Analysis

TABLE 4: CORRELATION WITH FRAUD JUSTIFICATION

Factor	Correlation (r)	Strength
Psychological Rationalization	0.425	Moderate Positive
Situational Pressure	0.415	Moderate Positive
Social & Ethical Controls	0.276	Weak to Moderate Positive

Source: Calculated from the primary dataset presented in the study (Table 1)



The results of the correlation analysis have revealed that all three factors—psychological rationalization, situational pressure, and social & ethical controls—are positively related to fraud justification. The factor of psychological rationalization has revealed the strongest relationship with fraud justification (r = 0.425), suggesting that people who often justify unethical actions through mental rationalization have stronger tendencies for justifying fraudulent actions as well. Situational pressure has also revealed a moderate positive relationship with fraud justification (r = 0.415), suggesting that people who often face situational pressures may have stronger tendencies for justifying fraudulent actions. On the other hand, social & ethical controls have revealed a relatively weaker positive relationship with fraud justification (r = 0.276), suggesting that although social and ethical controls have an impact on people's actions, their relationship with fraud justification is relatively weaker than that of other factors.

Conceptual Implication

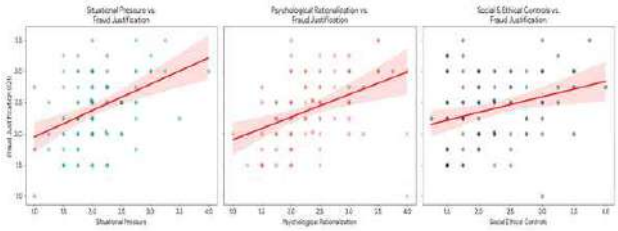
From the results obtained, it can be concluded that having an ethical awareness on its own is not sufficient to prevent cognitive endorsement of unethical behaviour. Behavioural conditioning and pressure management may be more effective deterrents than rule-based compliance training.

B. Multiple Regression Analysis

TABLE 5: REGRESSION COEFFICIENTS

Independent Variable	β	p-value	Significance
Situational Pressure	0.292	0.008	Significant
Psychological Rationalization	0.267	0.008	Significant
Social & Ethical Controls	-0.034	0.747	Not Significant

Source: Calculated from the primary dataset presented in the study (Table 1)



The regression model determines the variables that significantly predict fraud justification while controlling for other variables.

Key Findings:

- Situational Pressure (β = 0.292, p = 0.008)

  Has a statistically significant positive effect.

  This implies that an increase in pressure has a significant effect on fraud justification tendencies.

- Psychological Rationalization (β = 0.267, p = 0.008)

  Also has a statistically significant effect.

  This implies that individuals who cognitively rationalize unethical behaviour are more likely to justify fraud.

- Social & Ethical Controls (β = -0.034, p = 0.747)

  Does not have a statistically significant effect.

This implies that individuals who are more aware of ethics are not likely to justify fraud, given the significance of the other variables.

Conceptual Implication

The findings suggest that fraud prevention needs to move from compliance-based systems to behavioural risk mitigation systems. The data imply that fraud vulnerability is mediated psychologically rather than ethically or socially.

Hypothesis Testing for Objective 2

Since Situational Pressure and Psychological Rationalization have a statistically significant effect on fraud justification ($p < 0.05$).

Decision & Conclusion: H_{02} is rejected. Behavioural and Situational factors have a significant effect on fraud justification among students.

INTEGRATED DISCUSSION

The findings empirically support the behavioural dimension of the Fraud Triangle Theory developed by Donald R. Cressey.

Key theoretical implications:

The empirical findings support that the justification of fraud among students is heavily dependent on psychological rationalization and pressure, rather than on ethical controls.

The findings of the study support that fraud

prevention schemes for academic and professional training should not only focus on ethics but also on the behavioural aspects of:

- Behavioural biases
- Pressure management
- Cognitive reframing

The study contributes to the behavioural finance and forensic accounting literature by showing that the justification of fraud among future financial professionals is heavily dependent on psychological variables.

4. CONCLUSION

The present study represents an empirical attempt to investigate the phenomenon of fraud justification in financial decision-making among students from a behavioural perspective. The study, grounded in behavioural ethics and rationalization theory, examined the degree to which situational pressure, psychological rationalization, and social-ethical controls shape cognitive acceptance of unethical financial behaviour. The results indicate that, although the overall level of fraud justification among students was found to be statistically significant, it was found to be relatively low, implying a general ethical resistance to fraudulent financial behaviour. However, the presence of statistically significant variations in situational contexts implies that ethical judgment is not absolute, but rather conditional.

Moreover, the results indicate that psychological rationalization and situational pressure were found to be significant predictors of fraud justification, whereas social and ethical controls did not exert a significant effect on fraud justification when behavioural variables were controlled. The results support the behavioural core of the Fraud Triangle Theory, proposed by Donald R. Cressey, in terms of the importance of rationalization as a necessary cognitive process facilitating fraudulent behaviour. In accordance with the behavioural ethics literature (Murphy, 2012), the current study shows that unethical financial decisions are a result of situational pressures and cognitive reframing, rather than a lack of ethical knowledge.

The present study contributes to the small pool of Indian behavioural fraud tendency literature for commerce and management students. It bridges an important gap in understanding students' early-stage ethical decision-making. Considering the rising financial fraud losses in India, the present study's findings emphasize the requirement to go beyond traditional compliance-based ethics education and incorporate behavioural fraud prevention techniques.

In conclusion, fraud justification among students is not merely a function of their ethical deficiency but a cognitive process affected by situational pressures and cognitive reframing. While enhancing ethical awareness is important, behavioural resistance against cognitive reframing is crucial for long-term financial integrity.

5. AUTHORS' CONTRIBUTION

Both authors have contributed equally to this study.

6. FUNDING

This study has received no internal or external funding.

7. CONFLICT OF INTEREST

The authors have declared no conflict of interest for publication.

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"Beyond Awareness" – The Role of Green Marketing in Driving Sustainable Consumer Behavior

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ABSTRACT

This study investigates green consumer behaviour and its influence on purchase intention and brand loyalty, with emphasis on sustainable consumption awareness and green marketing strategies. The research aims to examine consumers' awareness and attitudes toward sustainable consumption, assess the impact of green marketing on green consumer behaviour, analyse the relationship between green consumer behaviour and purchase intention, and explore differences in brand loyalty across age groups. Primary data were collected using a structured Likert-scale questionnaire administered to consumers. A quantitative research design was employed, and data were collected from a sample of 50 respondents. The data were analysed using SPSS through reliability analysis, descriptive statistics, Pearson correlation, simple linear regression, and one-way ANOVA.

The findings reveal that consumer awareness of environmental issues does not significantly influence attitudes toward sustainable consumption. However, green marketing strategies were found to have a strong and significant impact on green consumer behaviour. Further analysis indicated that green consumer behaviour significantly influences purchase intention, demonstrating the importance of behavioural engagement in promoting sustainable purchasing decisions. Additionally, significant differences in brand loyalty toward environmentally responsible brands were observed across different age groups.

The study concludes that while awareness alone may not drive sustainable attitudes, effective green marketing plays a critical role in shaping green consumer behaviour, which in turn strongly influences purchase intention and brand loyalty. The findings provide practical insights for businesses seeking to implement sustainability-driven marketing strategies and foster long-term consumer commitment to environmentally responsible brands.

Keywords: *Green consumer behavior, purchase intention, Sustainable consumption, Green marketing and Brand loyalty*

INTRODUCTION

Today, people are becoming more aware of environmental problems such as pollution, climate change, and excessive waste. This growing concern has changed the way consumers think about the products they buy and the brands they support. Many individuals now prefer products that are eco-friendly, recyclable, and produced in ways that do not harm nature. This shift in mindset is known as green consumer behavior.

As consumers become more environmentally conscious, businesses are also adopting sustainable practices and promoting green products through marketing strategies. When companies highlight their efforts to protect the environment, it can influence consumers' interest in buying those products. This interest or willingness to purchase is

called purchase intention. Over time, if consumers are satisfied and trust a brand's environmental claims, they are more likely to continue buying from the same brand, which leads to brand loyalty.

Understanding how green consumer behavior affects both purchase intention and brand loyalty is important for businesses and society. It helps companies develop better marketing strategies while encouraging responsible consumption that supports environmental protection. This topic focuses on the connection between environmental awareness, buying decisions, and long-term consumer relationships with sustainable brands.

REVIEW OF LITERATURE

Greenwashing has emerged as a growing concern in sustainable marketing practices, as it involves misleading environmental claims that may deceive consumers. In a study conducted among hypermarket customers in Lahore, researchers examined the impact of greenwash on consumer green purchase behaviour, with green brand loyalty serving as a moderating variable. Using a cross-sectional survey design and adapted questionnaires, the findings revealed that greenwash has a significant negative effect on consumer green purchase behaviour. However, green brand loyalty was found to moderate this relationship, suggesting that loyal consumers may respond differently to misleading environmental claims. These findings highlight the importance of transparency in green marketing practices **(Khan et al., 2021).**

Understanding customer value is essential in explaining pro-environmental purchase and loyalty behaviour. A study conducted in the detergent category examined how different value dimensions and perceived costs influence consumer relationships with green brands. The results indicated that value factors and purchase costs significantly affect perceived customer value, which subsequently mediates loyalty toward green brands. Additionally, consumer involvement was found to moderate the relationship between value dimensions, costs, and perceived customer value. The study emphasizes that enhancing perceived value while reducing perceived costs can strengthen green brand loyalty **(Papista et al., 2018).**

With increasing environmental concerns, sustainability awareness has become a critical determinant of pro-environmental behaviour. Extending the Theory of Planned Behaviour, a study explored the relationship between sustainability awareness, consumer altruism, purchase intention, green brand loyalty, and evangelism. Using Structural Equation Modelling on data collected from 331 respondents, the findings demonstrated that sustainability awareness positively influences consumer altruism, which in turn enhances purchase intention, green brand loyalty, and evangelism. This study underscores the indirect role of awareness in shaping sustainable consumption behaviours **(Panda et al., 2020).**

Retailers increasingly adopt sustainability strategies to attract environmentally conscious consumers. A large-scale study conducted in Romania examined green loyalty across different retail formats using data from over 3,000 respondents. The results from Structural Equation Modelling revealed that green consumer behaviour significantly influences green loyalty. However, the drivers of green loyalty varied across retail segments, indicating that sustainability strategies must be tailored according to retail format. These findings provide practical insights for retailers aiming to build long-term customer loyalty through sustainable initiatives **(Dabija et al., 2018).**

Brand-related factors play an important role in influencing consumer purchase decisions. A study conducted among cellular phone users examined the relationships among brand awareness, perceived quality, brand loyalty, and purchase intention. Using regression and mediation analyses, the findings showed that brand awareness and perceived quality positively influence purchase intention. Moreover, brand loyalty was found to mediate the relationship between brand awareness and purchase intention. This highlights the critical role of loyalty in strengthening consumer buying intentions **(Chi et al., 2009).**

STATEMENT OF PROBLEM

Today, environmental sustainability has become an important global concern, and many consumers claim to be aware of environmental issues. Businesses are increasingly promoting green marketing strategies and encouraging sustainable consumption. However, it is still unclear whether consumers' awareness actually translates into positive attitudes and responsible purchasing behaviour.

While people may understand the importance of protecting the environment, this awareness does not always lead to real changes in buying decisions. Consumers may express concern for sustainability but still choose conventional products for various reasons. In addition, factors such as age may influence how strongly consumers feel loyal toward environmentally responsible brands.

Therefore, it becomes important to examine whether awareness of sustainable consumption and exposure to green marketing truly influence green consumer behaviour and purchase intention, and whether brand loyalty toward eco-friendly brands differs

across age groups. This study aims to explore these relationships to better understand how environmentally responsible practices shape consumer decision-making and long-term brand commitment.

OBJECTIVES

1. To examine consumers' awareness and attitudes toward sustainable consumption practices.
2. To assess the influence of green marketing strategies on green consumer behavior.
3. To investigate the relationship between green consumer behavior and purchase intention.
4. To examine differences in brand loyalty toward environmentally responsible brands across different age groups of consumers.

HYPOTHESIS 1

H_1: There is a significant relationship between consumer awareness and attitude toward sustainable consumption practices.

Table 1: Correlation & Regression Analysis Examining the Relationship Between Consumer Awareness and Attitude Toward Sustainable Consumption

Correlations

		awareness_mean	attitude_mean
awareness_mean	Pearson Correlation	1	.263
	Sig. (2-tailed)		.065
	N	50	50
attitude_mean	Pearson Correlation	.263	1
	Sig. (2-tailed)	.065	
	N	50	50

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.263[a]	.069	.050	.55089

a. Predictors: (Constant), awareness_mean

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.080	1	1.080	3.558	.065[a]
	Residual	14.567	48	.303		
	Total	15.647	49			

a. Predictors: (Constant), awareness_mean

b. Dependent Variable: attitude_mean

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.233	.578		5.597	.000
	awareness_mean	.249	.132	.263	1.886	.065

a. Dependent Variable: attitude_mean

The results of the correlation and regression analyses indicate a weak positive relationship between consumer awareness and attitude toward sustainable consumption. However, the relationship is not statistically significant, as the p-value obtained (p = 0.065) is greater than the 0.05 level of significance. The regression model explains only 6.9% of the variation in consumers' attitudes, suggesting that awareness alone does not strongly influence attitudes toward sustainable consumption practices. Therefore, the null hypothesis (H_0) is accepted, and the alternative hypothesis (H_1) is rejected. This implies that although consumers may be aware of environmental issues, such awareness does not significantly shape their attitudes toward environmentally responsible consumption.

Although consumers are generally aware of environmental issues, awareness alone does not necessarily translate into positive attitudes toward sustainable consumption. Many consumers may recognize environmental problems but prioritize factors such as price, convenience, and product availability over environmental concerns when forming their attitudes. Additionally, limited trust in green claims and lack of perceived personal impact may reduce the influence of awareness on attitudes. Hence, mere knowledge of sustainability issues may be insufficient to significantly shape consumer attitudes without emotional engagement or strong motivational factors.

HYPOTHESIS 2

H_2: Green marketing strategies have a significant impact on green consumer behavior.

Table 2: Correlation and Regression Analysis Showing the Impact of Green Marketing Strategies on Green Consumer Behavior

Correlations

		marketing_mean	behavior_mean
marketing_mean	Pearson Correlation	1	.693**
	Sig. (2-tailed)		.000
	N	50	50
behavior_mean	Pearson Correlation	.693**	1
	Sig. (2-tailed)	.000	
	N	50	50

**. Correlation is significant at the 0.01 level (2-tailed).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.693[a]	.480	.469	.60492

a. Predictors: (Constant), marketing_mean

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.204	1	16.204	44.282	.000[a]
	Residual	17.565	48	.366		
	Total	33.769	49			

a. Predictors: (Constant), marketing_mean

b. Dependent Variable: behavior_mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.030	.456		2.257	.029
	marketing_mean	.741	.111	.693	6.654	.000

a. Dependent Variable: behavior_mean

Pearson correlation analysis revealed a strong positive relationship between green marketing strategies and green consumer behaviour ($r = 0.693$, $p < 0.001$), indicating that increased exposure to environment-focused marketing is associated with higher levels of environmentally conscious purchasing behaviour.

Further, simple linear regression analysis was conducted to assess the influence of green marketing strategies on green consumer behaviour. The model was statistically significant ($F = 44.282$, $p < 0.001$) and explained 48.0% of the variance in green consumer behaviour ($R^2 = 0.480$). The standardized regression coefficient was positive and significant ($\beta = 0.693$, $p < 0.001$), demonstrating that green marketing strategies have a substantial influence on green consumer behaviour.

Therefore, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_2) is accepted, confirming that green marketing strategies significantly influence green consumer behaviour.

Green marketing strategies such as eco-labels, environmental certifications, and sustainability-focused advertisements play a crucial role in shaping consumer perceptions and guiding purchasing decisions. These marketing efforts provide visible cues that simplify environmentally responsible choices and build trust in green products. When consumers are exposed to clear and credible environmental messages, they are more likely to engage in eco-friendly purchasing behavior. Therefore, effective green marketing directly influences and encourages green consumer behavior.

HYPOTHESIS 3

H_3: Green consumer behavior has a significant relationship with purchase intention.

Table 3: Correlation and Regression Analysis Examining the Relationship Between Green Consumer Behavior and Purchase Intention

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780[a]	.608	.600	.42615

a. Predictors: (Constant), behavior_mean

Correlations

		behavior_mean	intention_mean
behavior_mean	Pearson Correlation	1	.780**
	Sig. (2-tailed)		.000
	N	50	50
intention_mean	Pearson Correlation	.780**	1
	Sig. (2-tailed)	.000	
	N	50	50

**. Correlation is significant at the 0.01 level (2 -tailed).

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.505	1	13.505	74.368	.000[a]
	Residual	8.717	48	.182		
	Total	22.222	49			

a. Predictors: (Constant), behavior_mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.595	.300		5.310	.000
	behavior_mean	.632	.073	.780	8.624	.000

a. Dependent Variable: intention_mean

Pearson correlation analysis revealed a strong positive relationship between green consumer behaviour and purchase intention ($r = 0.780$, $p < 0.001$), indicating that higher levels of environmentally conscious purchasing behaviour are associated with stronger intentions to buy eco-friendly products.

Further, simple linear regression analysis was conducted to assess the influence of green consumer behaviour on purchase intention. The regression model was statistically significant ($F = 74.368$, $p < 0.001$) and explained 60.8% of the variance in purchase intention ($R^2 = 0.608$). The standardized regression coefficient was positive and significant ($\beta = 0.780$, $p < 0.001$), demonstrating that green consumer behaviour has a strong influence on consumers' intention to purchase environmentally friendly products.

Therefore, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_3) is accepted, confirming that green consumer behaviour significantly influences purchase intention.

Consumers who actively practice environmentally responsible purchasing behavior tend to develop stronger intentions to continue buying eco-friendly products in the future. Habit formation, personal values, and satisfaction derived from making sustainable choices reinforce purchase intention. As green behavior becomes part of consumers' lifestyle, it naturally strengthens their willingness and commitment to purchase environmentally friendly products consistently. This explains the strong positive influence of green consumer behavior on purchase intention observed in the study.

HYPOTHESIS 4

H_4: There is a significant difference in brand loyalty toward eco-friendly brands among different age groups of consumers.

Table 4: One-Way ANOVA Examining Differences in Brand Loyalty Toward Eco-Friendly Brands Across Age Groups

ANOVA

loyalty_mean	Sum_of Squares	df	Mean Square	F	Sig.
Between Groups	7.634	2	3.817	5.782	.006
Within Groups	31.024	47	.660		
Total	38.658	49			

One-way ANOVA was conducted to examine differences in brand loyalty toward environmentally responsible brands across age groups. The results revealed a statistically significant difference in brand loyalty among the age groups ($F = 5.782$, $p = 0.006$). Therefore, the null hypothesis(H_0) is rejected, and the alternative hypothesis(H4) is accepted, indicating that brand loyalty toward eco-friendly brands varies significantly across different age groups.

Brand loyalty toward environmentally responsible brands varies across age groups due to differences in life stage, values, and purchasing priorities. Younger consumers may show strong environmental concern but may be less consistent in loyalty due to experimentation and price sensitivity, while middle-aged consumers may demonstrate higher loyalty once trust in a brand is established. Older consumers may be less influenced by sustainability trends or may have established preferences for conventional brands. These generational differences contribute to the significant variation in brand loyalty observed across age groups.

FINDINGS

- Consumer awareness of environmental issues shows a weak positive but statistically insignificant relationship with attitudes toward sustainable consumption, indicating that awareness alone does not meaningfully shape consumer attitudes.
- Green marketing strategies have a strong and statistically significant influence on green consumer behaviour, demonstrating that environment-focused advertising, eco-labels, and sustainability claims effectively encourage environmentally responsible purchasing actions.
- Green consumer behaviour exhibits a very strong positive and significant impact on purchase intention, suggesting that consumers who already engage in eco-friendly purchasing are highly likely to continue buying environmentally friendly products.
- Purchase intention is strongly driven by actual environmentally conscious purchasing behaviour rather than by awareness alone.
- Brand loyalty toward environmentally responsible brands varies significantly across age groups, indicating that demographic factors influence long-term commitment to sustainable brands.
- Middle-aged consumers demonstrate the highest levels of brand loyalty toward eco-friendly brands, while older age groups show comparatively lower loyalty.
- The overall results reveal that behavioural engagement plays a more critical role than awareness in driving sustainable consumption outcomes.

CONCLUSION

This research examined green consumer behaviour and its influence on purchase intention and brand

loyalty, with a focus on sustainable consumption awareness and green marketing strategies. The findings reveal that while consumers possess awareness of environmental issues, such awareness alone does not significantly shape attitudes toward sustainable consumption. This suggests that knowledge of sustainability concerns is insufficient to bring about meaningful attitudinal change without supportive motivational or experiential factors.

In contrast, green marketing strategies were found to play a crucial role in influencing green consumer behaviour. Environment-focused advertisements, eco-labels, and sustainability-related brand communications significantly encouraged environmentally responsible purchasing practices. This highlights the effectiveness of green marketing in translating sustainability messages into actual consumer action.

Furthermore, green consumer behaviour demonstrated a strong positive influence on purchase intention, indicating that consumers who actively engage in eco-friendly purchasing are more likely to continue buying environmentally responsible products in the future. This emphasizes the importance of fostering sustainable purchasing habits as a means of strengthening long-term consumer commitment.

The study also revealed significant differences in brand loyalty toward environmentally responsible brands across age groups, suggesting that demographic factors influence loyalty patterns. This indicates that sustainability-based branding strategies should be tailored to different age segments to effectively build long-term customer relationships.

Overall, the research concludes that while awareness of sustainability is important, behavioural engagement driven by effective green marketing is the key determinant of purchase intention and brand loyalty. Businesses aiming to promote sustainable consumption should therefore focus on transparent green marketing practices and strategies that encourage consistent environmentally responsible behaviour.

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Consumer Attitude–Behavior Gap Toward Green Consumption

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ABSTRACT

Today, it is not easy for marketers to sell eco-friendly products. Although many consumers say they are willing to pay more for green products, their actual buying behaviour often does not match their positive attitudes. This difference between what people say and what they do is known as the attitude–behaviour gap. Existing research explains this gap and summarizes all the factors and how they influence environmentally friendly purchasing decisions.

This study is based on data collected from 87 respondents and examines whether positive attitudes toward green products are reflected in real buying behaviour. The analysis provides empirical findings from three main aspects of attitude and actual buying behaviour, how attitude influences purchase decisions, and differences in purchasing behaviour based on gender and age groups.

The study highlights creating awareness about the environment is not enough. Problems like high prices, limited availability, and lack of trust must also be reduced so that people can actually buy green products. Businesses can encourage green buying by offering discounts, refill options, clear labels, and loyalty rewards. Policymakers can support this through tax benefits, subsidies, consumer incentives, and strict rules against false green claims. These actions make eco-friendly products more affordable and accessible for everyone.

Keywords: *Green Consumption, Consumer Attitude, Purchase Behaviour, Attitude–Behaviour Gap, Environmental Concern.*

INTRODUCTION

In recent years, increasing environmental problems and growing awareness about sustainability have influenced consumers to develop positive attitudes toward eco-friendly products. Many people say they prefer products that are less harmful to the environment and support responsible consumption. They believe that choosing green products can help protect nature and improve future quality of life.

In reality, these positive attitudes do not always lead to actual purchases. When making buying decisions, consumers often choose conventional products instead of eco-friendly ones. Factors such as high price, limited availability, convenience, habits, or lack of trust in green claims influence their choices. This difference between what consumers say and what they actually do is known as the attitude–behaviour gap.

Bridging the attitude–behaviour gap needs combined efforts from businesses and policymakers. Companies can improve product quality, ensure transparency, use sustainable packaging, and apply simple nudges to promote green choices. Governments can support this through environmental education, awareness campaigns, and community initiatives like recycling programs. Together, these steps can make sustainable buying a regular and responsible habit.

REVIEW OF LITERATURE:

Research shows that there is often a gap between positive environmental attitudes and actual green purchases. Based on the Theory of Planned Behaviour, perceived consumer effectiveness plays an important role in turning attitudes into buying intentions. Factors like eco-literacy and perceptions of green products can strengthen or weaken this link. Understanding these factors helps in creating better policies and marketing strategies to promote sustainable buying. **Nabi Khan, S., Minhas, N., & Neale, N. (2025)** Existing research clearly shows a "green gap," where positive environmental attitudes do not match actual buying behaviour. Studies explain this gap, its causes, and ways to reduce it. The reasons are usually linked to psychological, demographic, socio-cultural, and marketing factors. These findings help marketers and policymakers promote more consistent sustainable consumption. **Sukumaran, L., & Majhi, R. (2025)**

Earlier studies show that green purchase intentions often do not turn into actual buying, and this gap is still not fully understood. Recent research suggests that personal traits, self-efficacy, and clear action plans can help reduce this gap. When consumers feel confident and receive proper guidance, they are more likely to turn their intentions into real green purchases. **Tawde, S., Kamath, R., & Shabbir Husain, R. V. (2023)** Green consumption is important for sustainable living, and many governments promote it through different initiatives. However, positive attitudes toward eco-friendly products do not always lead to actual purchases. Studies show that even when people value green products, they may still choose regular ones, often due to higher prices and other economic reasons. **Dirzyte, A., s Rakauskiene, O. G. (2016)**

Research shows that personality traits influence green buying behaviour. The Big Five traits affect how people form environmental attitudes and turn them into actions. Personality differences may explain the attitude–behaviour gap, and some studies also find differences between men and women in how attitudes relate to buying behaviour. **Duong, C. D. (2022).**

Many studies show that consumers have positive attitudes toward sustainable products but do not always buy them. Research highlights a clear gap between intention and actual purchase. Factors such as perceived value, risk, environmental concern, social influence, and demographics affect this gap. These findings help in understanding consumer decisions and promoting sustainable buying. **Park, H. J., s Lin, L. M. (2020)** Studies show that overconsumption has caused serious environmental problems, making green consumption important. Although many consumers say they are willing to support eco-friendly products, their actual buying behaviour often does not match their intentions. This attitude–behaviour gap limits the success of environmental efforts, and factors like consumer involvement and perceived effectiveness influence whether attitudes turn into real purchases. **Chauhan, V. Z. (2020)**

STATEMENT OF PROBLEM

Many consumers express positive attitudes toward eco-friendly products and acknowledge the importance of environmental protection. However, their actual purchasing decisions often do not reflect these stated preferences, as they continue to choose conventional products. This inconsistency between expressed attitudes and real buying behaviour is known as the attitude–behaviour gap. The present study seeks to examine the underlying reasons behind this gap.

OBJECTIVES:

1. To examine consumers' attitudes toward green consumption.
2. To analyse consumers' actual purchasing behaviour of eco-friendly products.
3. To identify the gap between consumer attitudes and their buying behaviour toward green products.

HYPOTHESIS:

1) Ho: There is no significant relationship between consumer attitude and actual purchase behaviour of green products.

H1: There is a significant relationship between consumer attitude and actual purchase behaviour of green products.

2) Ho: There is no significant difference between male and female consumers in their actual purchasing behaviour of eco-friendly products

H2: There is a significant difference between male and female consumers in their actual purchasing behaviour of eco-friendly products

3) Ho: There is no significant difference in the mean attitude–behaviour gap among different age groups

H3: There is a significant difference in the mean

attitude–behaviour gap among different age groups

RESEARCH METHODOLOGY

Primary data were obtained directly from respondents, while secondary information was gathered from research articles, websites, and previous studies related to green consumer behaviour. The survey instrument was designed using a five-point Likert scale ranging from strongly disagree to strongly agree to capture respondents' perceptions and behavioural tendencies.

For data analysis, statistical techniques such as Pearson correlation, independent samples t-test, and one-way ANOVA were performed using SPSS/Excel. Correlation analysis was used to examine the relationship between consumer attitude and actual purchase behaviour. The independent t-test was conducted to identify differences based on gender, and one-way ANOVA was applied to determine differences among various age groups. Limitation: The study is based on a limited sample size, which may restrict the generalization of the findings to a larger population. Future studies with a broader sample and wider geographical coverage may provide more comprehensive insights.

ANALYSIS:

HYPOTHESIS 1:

H1: There is a significant relationship between consumer attitude and actual purchase behaviour of green products.

Table 1: Pearson Correlation Between Consumer Attitude and Actual Purchase Behaviour of Green Products

Correlations

		Mean Consumer Attitude toward Green Consumption	Mean Actual Purchase Behaviour
Mean Consumer Attitude toward Green Consumption	Pearson Correlation	1	.503**
	Sig. (2-tailed)		.000
	N	87	87
Mean Actual Purchase Behaviour	Pearson Correlation	.503**	1
	Sig. (2-tailed)	.000	
	N	87	87

**. Correlation is significant at the 0.01 level (2-tailed).

Pearson correlation analysis was conducted with a sample size of N = 87 respondents to examine the relationship between consumer attitude toward green consumption and actual purchase behaviour. The results revealed a moderate positive correlation ($r = 0.503$, $p < 0.01$). Since the significance value ($p = 0.000$) is less than the 0.05 level of significance, the **null hypothesis is rejected** and the **alternative hypothesis is accepted**. Therefore, it is concluded that there is a significant positive relationship between consumer attitude and actual purchase behaviour of green products.

INFERENCE

The study shows that people's attitudes toward green products influence their buying behaviour. Those who think positively about eco-friendly products are more likely to buy them because they feel it is the right and helpful thing to do.

The link between attitude and actual buying is moderate, meaning other factors also play a role. Health and safety concerns, ethical reasons, convenience, availability, social influence, and feelings of pride or responsibility can affect decisions. Practical aspects like price, income, and affordability are important too. People may not buy green products if they are too expensive or hard to find.

Not only attitude matters, but it works together with **health, ethics, social, emotional, and practical factors** to determine whether people actually purchase eco-friendly products.**HYPOTHESIS 2:**

H2: There is a significant difference between male and female consumers in their actual purchasing behaviour of eco-friendly products

Table 2: Independent Samples t-Test Showing the Difference Between Actual Purchasing Behaviour among gender.

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Mean Actual Purchase Behaviour	Female	58	3.6436E0	...	...
	Male	29	3.5402E0	...	...

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Mean Actual Purchase Behaviour	Equal variances assumed	3.264	.074	.757	85	.451	...	...	-1.6843281E-1	3.7532936E-1
	Equal variances not assumed			.779	60.669	.439	1.0344827E-1	1.3280899E-1	-1.6214905E-1	3.6904560E-1

An independent samples t-test was conducted to compare actual purchase behaviour between male and female consumers. The results showed that females (M = 3.64, N = 58) scored slightly higher than males (M = 3.54, N = 29). However, the difference was not statistically significant, $t(85) = -0.757$, $p = 0.451$. Therefore, it is concluded that there is no significant difference between male and female consumers in their actual purchasing behaviour of eco-friendly products. Therefore, **the null hypothesis (Ho) is accepted** and **alternate hypothesis H2 is rejected.**

INFERENCE

Gender does not significantly affect the purchase of eco-friendly products. Men and women behave similarly when it comes to buying green items.

What really influences green buying are other factors. Knowledge and awareness about the environment and eco-friendly alternatives make people more likely to choose green products. Cultural and regional factors can affect how much people value sustainability. Marketing, labels, and branding build trust, while past experiences with green products can encourage or discourage purchases. Peer pressure, trends, and government incentives also play a role.

Gender does not determine eco-friendly purchases; instead, a mix of personal values, practical factors, social influence, and awareness guides whether someone buys green product or not.

HYPOTHESIS 3:

H3: There is a significant difference in the mean attitude–behaviour gap among different age groups

Table 3: One-way Anova Test showing Age Group Differences in Attitude–Behaviour Gap

ANOVA

Mean Attitude-Behaviour Gap

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.625	2	2.812	5.030	.009
Within Groups	46.968	84	.559		
Total	52.593	86			

A one-way ANOVA was conducted to compare the mean attitude–behaviour gap across different age groups. The results showed a statistically significant difference among age groups, $F(2, 84) = 5.030$, $p = 0.009$. Therefore, the **null hypothesis is rejected**, and **alternate hypothesis is accepted** as there is a statistically significant difference in the mean attitude–behaviour gap among different age groups.

INFERENCE

The analysis shows that even among young people, there are differences in how positive attitudes toward green products turn into actual purchases. Those who are more digitally connected, follow trends, and are willing to try new products are more likely to act on their eco-friendly intentions. Others with more habits, routines, responsibilities, or limited budgets may find it harder to consistently choose green products. Peer influence, awareness of environmental issues, thinking about long-term impact, financial priorities, and marketing also affect whether people act on their positive attitudes. Young respondents do support eco-friendly products, differences in habits, knowledge, social influence, and personal priorities explain why some buy green products more than others.

FINDINGS

- People who think positively about eco-friendly products are more likely to buy them because they feel it is the right and helpful choice.
- The link between attitude and actual buying is moderate, meaning other factors like health, ethics, convenience, social influence, and price also affect whether people act on their attitude.
- Health, ethical beliefs, social pressure, emotions, and practical considerations like affordability and availability collectively determine whether someone actually purchases eco-friendly products.
- Men and women behave similarly when it comes to buying eco-friendly products, so gender does not significantly affect green purchasing.
- People who are informed about environmental issues and eco-friendly alternatives are more likely to buy green products.
- Cultural and regional norms, marketing and branding, past experiences, peer pressure, trends, and government incentives all play a role in determining whether someone purchases eco-friendly products.
- Even among young people, having a positive attitude toward green products doesn't always lead to actual purchases.
- Young people who are digitally connected, follow trends, and are open to trying new products are more likely to act on eco-friendly intentions, while habits, routines, responsibilities, or limited budgets can limit green purchases.
- Peer influence, awareness of environmental

issues, thinking about long-term impact, financial priorities, and marketing all affect whether young people turn their positive attitudes into actual eco-friendly purchases

CONCLUSION & FUTURE RESEARCH

The study shows that having a positive attitude toward eco-friendly products encourages people to buy them, but attitude alone is not enough. Other factors like health and safety, ethics,

convenience, social influence, price, knowledge, cultural norms, marketing, past experiences, peer pressure, trends, and government incentives also affect whether someone actually makes a green purchase. Gender does not make a difference—men and women behave similarly when buying eco-friendly products. Even among young people, positive attitudes do not always turn into actual purchases, as lifestyle, habits, routines, responsibilities, and budgets influence their choices.

To encourage green buying, it is important to **increase awareness** about environmental issues, make eco-friendly products **more affordable, accessible, and convenient**, and use **effective marketing and clear certifications** to build trust. Promoting eco-friendly **habits among young people** through trends and social influence, along with **government incentives or support**, can further help consumers turn their positive attitudes into real eco-friendly actions. Overall, multiple personal, social, practical, and emotional factors work together to shape whether people actually purchase green products.

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Urban Green Choices: Consumer Behaviour Toward Sustainable Products in Indian Cities

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ABSTRACT

This study aims to investigate the behaviour of consumers toward sustainable products in the context of urban consumers in India. The study was conducted on the variables of environmental awareness, consumer attitude, consumer preference for sustainable products, green purchase decisions, and price sensitivity. Primary data was collected for this study with the help of a structured questionnaire from 81 consumers. The data was analyzed using statistical tools such as SPSS for descriptive statistics, reliability analysis, simple linear regression, correlation, and one-way ANOVA. The findings of the study reveal that the level of environmental awareness among urban consumers is moderate to high. The findings also reveal that environmental awareness has an impact on the attitude of consumers toward sustainable products. A moderate positive relationship was found between the preference of consumers for sustainable products and green purchase decisions. However, the findings depict the price sensitivity bringing no impact on the purchase of green products. It is also revealed that factors such as environmental awareness, attitude, and preference play a more significant role than price sensitivity in the context of promoting the purchase of sustainable products.

Keywords : *Environmental awareness, Green purchase decisions, Consumer attitude, Sustainable products, Price sensitivity, Green products*

INTRODUCTION

As urban India continues to grow, it is facing increasing environmental problems from increased consumption and unsustainable lifestyles. While urban citizens are becoming more aware of how to protect the environment and become more sustainable shoppers by using products labelled as "green," the actual purchase of green products is still limited. Urban residents care about the environment but do not always exhibit their concern through regular patterns of green purchases.

The purchase decision of the consumer can be influenced by many different factors, including the cost of the product, the availability of the product, and the consumer's belief in the authenticity of the claims made by the manufacturer about the environmental characteristics of the product. Price sensitivity and varying levels of environmental awareness (i.e., knowledge of the environment and its problems) are critical to how consumers perceive benefits and whether they will purchase the item. Consequently, this research seeks a greater understanding of urban residents' purchasing decisions by examining the factors that drive such behaviours when purchasing sustainable goods within urban cities in India.

REVIEW OF LITERATURE

Green Consumers' Purchase Intention and Zero Waste Buying Behaviour: Prakash et al. (2024) studied the relationship between green purchase intention and zero waste buying behaviour in the cosmetics industry using the Theory of Planned Behaviour. The study results showed that green consumers' purchase intention was influenced by eco-friendly packaging, pro- environmental beliefs, and social interactions. The study results also showed that altruistic motivation plays a crucial role in connecting purchase intention and buying behaviour, implying that environmentally conscious consumers exhibit responsible buying behaviour. **Prakash, Sharma, Kumar, & Luthra, (2024)**

Factors Influencing Green Buying Behaviour of Consumers: Bommenahalli Veerabhadrappa et al. (2023) studied the factors influencing green buying behaviour of consumers, including individual and organisational consumers, using the TCCM model and 120 research articles. The study results showed that price sensitivity, eco-labelling, recycling, and green communication are factors affecting the buying behaviour of consumers. While individual consumers' buying behaviour is influenced by environmental concern and personal values, organisational consumers' buying behaviour is driven by corporate responsibility and regulations. **Bommenahalli Veerabhadrappa, Fernandes, & Panda, (2023)**

Sustainable Consumer Behaviour of Indian Millennials: Francis and Sarangi (2022) conducted an analysis of the sustainable consumer behaviour of Indian millennials using the Value-Belief- Norm theory. The study findings revealed that Indian millennials have high concern for environmental issues. However, the actual behaviour of the consumers regarding sustainability is different for different groups of millennials. **Francis & Sarangi, (2022)**

Role of Social Media in Influencing Green Purchase Intention: The role of social media in influencing consumers' green purchase intention was investigated by Nekmahmud et al. (2022) using the extension of the Theory of Planned Behaviour. The findings of the study revealed that attitude, subjective norms, perceived behavioural control, and social media marketing have significant influence on the green purchase intention of consumers. Moreover, the study highlighted the role of social media in spreading environmental awareness. **Nekmahmud, Naz, Ramkissoon, & Fekete-Farkas, (2022)**

Purchase Intention Towards Green Cosmetics in India: Upadhyaya and Sijoria (2024) conducted a study on factors that influence the purchase intention of Indian consumers towards green cosmetics, and the study extended the theory of planned behaviour model. The study found that attitude, social influence, and trust are significant factors that influence the purchase intention of consumers towards green cosmetics in India. Though environmental concern and knowledge enhance the attitude of consumers, there is no direct impact on purchase intention. **Upadhyaya & Sijoria, (2024)**

STATEMENT OF THE PROBLEM

Urban India faces serious environmental issues due to increased consumption and unsustainable Lifestyles. Despite growing awareness about environmental protection and sustainable products, the actual purchase of sustainable products is limited. Many urban consumers show concern about the environment and sustainable products, but they are reluctant to purchase sustainable products on a regular basis.

Higher prices, unavailability, and scepticism about sustainable claims are often responsible for purchasing decisions. Price sensitivity is a major factor influencing sustainable consumer behaviour in Indian urban areas. At the same time, differences in environmental awareness affect attitudes towards sustainable products. There is a clear gap between intentions and actual purchasing behaviour. It is important to understand these aspects to encourage sustainable purchasing.

OBJECTIVES

1. To assess the level of environmental awareness among urban consumers and its impact on green purchase decisions.
2. To analyse urban consumer attitude towards sustainable products.
3. To assess the effect of price sensitivity on the purchase of green products

HYPOTHESES

1) H_{01}(Null Hypotheses): Environmental Awareness (EA) does not have a significant

impact on Consumer Attitude toward Sustainable Products (CA).
H_{11} (Alternative Hypotheses): Environmental Awareness (EA) has a significant impact on Consumer Attitude toward Sustainable Products (CA).

2) H_{02} (Null Hypotheses): There is no significant association between Preference for Sustainable Products (SP) and Green Purchase Decisions (GPD).
H12 (Alternative Hypotheses): There is a significant association between Preference for Sustainable Products (SP) and Green Purchase Decisions (GPD)

3) H_{03} (Null Hypotheses): There is no significant relationship between Price Sensitivity (PS) and Green Product Purchase Behaviour (GP).
H13 (Alternative Hypotheses): There is a significant relationship between Price Sensitivity (PS) and Green Product Purchase Behaviour (GP).

RESEARCH METHODOLOGY

The study adopted a quantitative research design to examine urban consumer behaviour toward sustainable products in Indian cities. Primary data was collected through a structured Google Form questionnaire consisting of demographic questions and 30 statements measured on a 5- point Likert scale. The constructs included environmental awareness, consumer attitude, preference for sustainable products, green purchase decisions, price sensitivity, and green product purchase behaviour. A total of 81 urban respondents were selected using simple random sampling.

The data was analysed using SPSS. Descriptive statistics and Cronbach's Alpha were used to test response patterns and reliability. Simple linear regression was applied to test the impact of environmental awareness on consumer attitude. Pearson correlation was used to examine the association between preference and purchase decisions, and the relationship between price sensitivity and green purchase behaviour. All hypotheses were tested at a 5% level of significance.

ANALYSIS

Hypotheses 1

H_{11}: Environmental Awareness (EA) has a significant impact on Consumer Attitude toward Sustainable Products (CA).

Table Number 1: Simple Linear Regression based on the impact on Customer Attitude towards Sustainable Products

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	positive_attitude[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: env_awareness

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.559[a]	.312	.304	.758

a. Predictors: (Constant), positive_attitude

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.608	1	20.608	35.865	.000[a]
	Residual	45.392	79	.575		
	Total	66.000	80			

a. Predictors: (Constant), positive_attitude

b. Dependent Variable: env_awareness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.731	.388		4.462	.000
	positive_attitude	.572	.096	.559	5.989	.000

a. Dependent Variable: env_awareness

From the Model Summary table, the R value is 0.559, which indicates a moderate positive relationship between Environmental Awareness and Consumer Attitude. Having an R^2 value of 0.312 means that Environmental Awareness explains 31.2% of the variation in Consumer Attitude. This shows that the consumer awareness accounts for a significant part of the changes in attitude.

The ANOVA table shows an F-value equal to 35.865 and the significance value equal to 0.000, which is less than 0.05. The regression model is significant and Environmental Awareness significantly predicts Consumer Attitude. Thus, Eco-friendly attitudes have an influence on Consumer Attitude.

The standardized beta value for the Coefficients table is $\beta = 0.559$ at a significance value of 0. 000.It can be inferred that Environmental Awareness positively and significantly affects Consumer Attitude. An increase in awareness leads to a more favourable consumer attitude towards sustainable products.

Since the p-value obtained from regression analysis is less than 0.05 ($p < 0.05$), the null Hypotheses is rejected.

Result: Environmental Awareness has a significant positive impact on Consumer Attitude toward Sustainable Products. Therefore, Alternative Hypotheses is accepted and Null Hypotheses is rejected.

Hypotheses 2

H_{12} (Alternative Hypotheses): There is a significant association between Preference for Sustainable Products (SP) and Green Purchase Decisions (GPD).

Table Number 2: Pearson Correlation between Preference for Sustainable Products and Green Purchase Decisions

Correlations

		prefer_ sustainable	future_buy
prefer_sustainable	Pearson Correlation	1	.495**
	Sig. (2-tailed)		.000
	N	81	81
future_buy	Pearson Correlation	.495**	1
	Sig. (2-tailed)	.000	
	N	81	81

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation coefficient ($r = 0.495$) reflects the relationship between Preference for Sustainable Products and Green Purchase Decisions as per the Pearson correlation table. This indicates a moderate positive relationship in the two variables. The relationship is determined as significant as the significant value p (0.000) is less than (0.05).

The moderate strength of correlation suggests that while preference matter for green purchase decisions, there are other aspects as well that contributes to purchasing behaviour. A statistical result is said to be correct with a sample size of 81 respondents. A higher preference is associated with a higher green purchase decision as they positively correlated.

Since the correlation analysis shows a statistically significant p-value ($p < 0.05$), the null Hypotheses is rejected.

Result: There is a significant positive association between Preference for Sustainable Products and Green Purchase Decisions. Therefore, Alternative Hypotheses is accepted and Null Hypotheses is rejected.

Hypotheses 3

H_{13}(Alternative Hypotheses): There is a significant relationship between Price Sensitivity (PS) and Green Product Purchase Behaviour (GP).

Table Number 3: One-Way ANOVA – Analysis of Variance between Price Sensitivity and Green Product Purchase Behaviour

ANOVA

future_buy

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.437	3	.479	.788	.504
Within Groups	46.786	77	.608		
Total	48.222	80			

The table provided below is the One-Way ANOVA table that indicates the analysis of variance between Price Sensitivity and Green Product Purchase Behaviour (future buy) among the respondents. The calculated F-value is 0.788, and the significance value (p-value) is 0.504. The significance value is greater than the significance level of 0.05, so it is not statistically significant.

This indicates that there is no significant difference in Green Product Purchase Behaviour among the respondents at different levels of Price Sensitivity. The findings also reveal that the differences in price sensitivity do not significantly impact the green purchase behaviour of the respondents.

Test Used: One-Way ANOVA

Since the value of p (0.504) is greater than 0.05, the null hypothesis cannot be rejected.

Result: It has been observed that there is no significant difference in Green Product Purchase Behaviour based on different levels of Price Sensitivity. Therefore, Null hypotheses is accepted, and Alternative Hypotheses is rejected.

The data collected from urban consumers were analyzed using SPSS statistical software to examine the relationships between the study variables. First, descriptive statistics like mean and standard deviation were calculated to understand the overall response patterns. The mean values for Environmental Awareness, Consumer Attitude, Preference for Sustainable Products, and Green Purchase Decisions were above the neutral midpoint of the Likert scale. This indicates that respondents generally hold a positive view and tendency toward sustainable products. Price Sensitivity showed moderate variation among respondents. This suggests that while price may affect purchasing decisions, it is not the main factor determining green purchase behaviour.

To check the reliability of the measurement scale, Cronbach's Alpha reliability analysis was conducted for all constructs. The results showed that the reliability coefficients for all variables exceeded the

acceptable level of 0.70. This confirms that the measurement items used in the questionnaire have strong internal consistency and are suitable for further statistical analysis. The study tested the hypotheses using various statistical methods based on the nature of the variables. Simple Linear Regression analysis was used to test the relationship between Environmental Awareness and Consumer Attitude. The results revealed a significant positive relationship, meaning that higher environmental awareness greatly influences consumer attitudes toward sustainable products.

Pearson Correlation analysis examined the connection between Preference for Sustainable Products and Green Purchase Decisions. The findings showed a moderate positive and statistically significant link, suggesting that a stronger preference for sustainable products increases the likelihood of green purchasing decisions. Finally, One-Way ANOVA analyzed the relationship between Price Sensitivity and Green Product Purchase Behaviour. The results indicated that the p-value was greater than the significance level of 0.05. This means that price sensitivity does not have a statistically significant effect on green purchase behaviour in this sample.

Overall, the results from the hypothesis testing suggest that psychological factors like environmental awareness and consumer preference play a key role in influencing green purchasing behaviour. However, price sensitivity does not significantly affect the green product

purchase behaviour of urban consumers in this study. All hypotheses were tested at a 5% level of significance ($\alpha = 0.05$) to ensure the statistical validity of the results.

FINDINGS

- Environmental awareness is a significant aspect that influences consumer attitude towards sustainable product usage in urban cities.
- Regression analysis has confirmed that environmental awareness positively influences consumer attitude towards sustainable product usage.
- Correlation analysis has confirmed that consumers with a positive attitude towards sustainable product usage are likely to make green purchase decisions.
- ANOVA analysis has confirmed that price sensitivity has no significant influence on green product purchasing behaviour in this study.
- Environmental awareness, consumer attitude, and consumer preference are significant psychological and behavioural factors that influence green purchasing behaviour in consumers.
- Environmental awareness among consumers helps build a positive attitude, and this in turn increases the level of preference for sustainable product usage.
- This study has confirmed that price sensitivity has no significant influence on green purchasing behaviour.
- Urban consumers may place a higher value on the benefits of the product and environmental responsibility rather than price in green purchasing decisions.

CONCLUSION

The study indicates that environmental awareness is a crucial factor in determining consumer behaviour in relation to sustainable product consumption in urban cities. When consumers are highly aware of their environment, a positive consumer attitude is created in relation to sustainable products. Consumer attitude enhances their preference for green products and is a determinant in green purchase behaviour. The findings of the study indicate that factors such as consumer behaviour in relation to green products are determined by psychological factors such as consumer preference.

It depicts that when consumers are aware of their environment, their preference for green products is enhanced. Such preferences make consumers consider green products in terms of their benefits to the environment. While price sensitivity is an essential aspect of consumer behaviour, it indicates that it is not a crucial determinant of green product consumption behaviour. Such a conclusion indicates that consumers in urban cities may consider product benefits in relation to green product consumption.

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Eco-Friendly Last-Mile Solutions: A Study of Green Consumer Behavior toward UAV Delivery

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ABSTRACT

The fast rate of e-commerce development has changed the retail logistics, whereby there is a need to have faster and efficient delivery systems. The use of Unmanned Aerial Vehicles (UAVs), or drones, in last-miles delivery is one of the new technologies. This paper will look at operational advantages, customer perception, and adoption issues of UAV- based retail delivery using secondary information. It used a descriptive research design based on a systematic review of scholarly journals, industry reports and government publications. The results suggest that the UAV delivery systems can greatly decrease the delivery time, decrease the fuel use, achieve higher access to remote areas, as well as make logistics more effective. Nevertheless, the mass adoption will be heavily reliant on consumer confidence, perceived safety, privacy protection, and regulatory clarity. Although UAV retailing has good economic and sustainability features, the technological development, systematic legal regulations and consumer awareness should be improved in the long run to guarantee its success.

Keywords: *UAV retailing, drone delivery, last-mile logistics, consumer perception, technology adoption.*

1. Introduction

The retail sector has been changing significantly following the rapid digitalization processes as well as growth of e-commerce platforms.The consumers are becoming more demanding in the aspect of faster and more convenient delivery. This has seen retailers constantly seeking new logistic solutions, which could assist in making the supply chain more efficient. One of the new is the use of Unmanned Aerial Vehicles (UAV) or drones to provide delivery service supply chain innovations. The use of UAVs to deliver services does not involve the performance of any human being since it is flown in a straight path route in the air. UAV delivery should take the leading role in enhancing the last-mile delivery since it is believed to be the most important complicated and costly component of the supply chain. The key problems that are experienced in the traditional form of delivery are jamming, overconsumption of fuel consumption, low delivery speed, and inaccessibility to distant areas. The problem of traditional delivery could be addressed by the application of drone

delivery that could provide a more efficient approach to the issue that will support faster and more direct, and automated delivery. Although technological innovation is rendering the UAV retail delivery more feasible, such as one of the variables in the process is the consumer perception or artificial intelligence, GPS, and automation. The article concentrates on the study of the research findings on the operational benefits, issues and customer acceptance of the UAV retail delivery application.

2. Literature review

UAV Delivery Development in Retail.

Hossein Eskandaripour and Enkhasaikhan Boldsaikhan (2023) in the study on "Last-Mile Drone Delivery: Past, Present, and Future"(1) explored the growth in the e-commerce industry and the increasing demands of customers to receive their products faster has posed significant pressure to work on the last-mile logistics. The adoption of Autonomous Unmanned Aerial Vehicles (UAVs) also known as drone delivery systems is one of the solutions that are emerging. According to existing studies, the traditional last-mile delivery relies, to a great extent, on trucks and ground vehicles that are commonly affected by the lack of traffic space, delays in delivery, increasing fuel prices, and environmental pollution. Due to these difficulties, researchers and retail firms are considering alternative methods of drone technology as a quicker, more effective, and sustainable one.

Sandun Perera et al (2023) in the study on "Retail Deliveries by Drones: How will Logistics Network Changes?"(2) It has also been shown that large multinationals across the world are in the process of testing drone delivery technology. Pilot projects have been initiated by organisations such as Amazon, UPS and the Wing of Alphabet to test the viability of drone-based parcel services. These projects indicate the increased business enthusiasm in implementing UAV systems within the existing logistics systems. Hybrid delivery models that involve the use of trucks and drones in order to optimise efficiency have also been suggested by scholars. With these types of models, trucks will be engaged in delivering bulk in densely populated places, whereas drones will be delivering urgent/distant deliveries.

Qi Guo and Cong Lu (2024) in the study on "Optimization of vehicle-unmanned aircraft cooperative delivery path in the context of new retailing"(3)The logistics systems have changed extensively with the fast development of digital technologies, artificial intelligence, and online stores. Among the most prominent developments in modern retail logistics is the introduction of autonomous unmanned aerial vehicles (UAVs), also known as drones, into the operations of delivering items. These technologies are intended to tackle the issues that are related to the last-mile delivery problem that is usually the most costly and time-consuming stage of the retail supply chain.

Qingkui Cao et al (2021) in the study on "Path Optimization of Joint Delivery Mode of Trucks and UAVs"(4) Research has also explored path optimization algorithms for truck-drone delivery systems, highlighting the importance of coordinated scheduling and routing strategies to maximize the effectiveness of joint delivery operations. Consumer expectations play a crucial role in the adoption of autonomous UAV delivery systems. Delivery timeliness and reliability are particularly important factors influencing customer satisfaction. Studies on logistics delivery models emphasize the importance of delivery time windows, where customers expect goods to be delivered within specific time frames.

Fang Li and Oliver Kunze(2023) in the study on "A Comparative Review of Air Drones (UAVs) and Delivery Bots (SUGVs) for Automated Last Mile Home Delivery" (5) Another issue of concern is economic viability. Comparative analysis reveals that commercial success depends on such factors as the cost per delivery, the radius of the service, and the efficiency of the operator. Ground-based autonomous robots might also be cheaper and produce less noise in an urban setting though UAVs offer quicker service. Consequently, the autonomous technologies applied in logistics systems of the future can be a hybrid of various technologies depending on the requirements of a particular operation.

2.1 Research Gap

The gaps in the existing literature can be identified as follows:

- Limited Focus on Consumer Perception and Behavioral Adoption.
- Lack of Integration Between Technological Models and Consumer Experience.
- Insufficient Research on Real-World Retail Implementation.
- Limited Studies Addressing Societal and Regulatory Acceptance.

3. Research Objectives

The following are the objectives that guide the present study:

1. To examine the economic and operational advantages related to UAV retailing.
2. To determine the barriers and limitations to

implementation of UAV.

3. To determine the long-term effects of the UAV retailing on the retail industry.

4. Research Methodology

The research design used in the study is descriptive research design that is solely based on secondary data. The design allows systematic examination and analysis of available research without primary data.

Nature of Data

The study is anchored purely on secondary sources such as journal articles, books, conference papers, industry reports, and government publications all of which are peer-reviewed.

Sources of Data

Data were collected from:

- Academic databases like Google Scholar and Researchgate.
- Peer-reviewed articles on the use of UAVs.
- Logistics and industry reports.
- Publications of the government and regulatory authorities.
- Authoritative reports on drone delivery services by the company.

Only the recent and credible sources were taken into consideration in order to be relevant.

Data Collection

Data Collection The research was conducted through a literature review, and the following search terms were used: 'UAV retailing,' 'drone delivery,' and 'last-mile logistics.' The research collected was based on various topics, including operational efficiency, consumer acceptance, economic viability, sustainability, and regulatory issues. Data Analysis Technique Content analysis was conducted qualitatively. These were major issues, trends, and findings that were compared and analyzed. Industry reports were used, and the statistical information was analyzed to identify the trends in reducing the cost, improving the performance, and increasing the market.

5. Findings

One of the main findings is that drones are efficient in terms of the delivery process since the drones deliver between the customer centres and the distribution centres, which removes delays caused by congestion in traffic, etc and consumes less fuel. The other remarkable finding is that drone delivery will be able to support a logistics system that is ecologically easy to like since the carbon emission will be lower than with a conventional car.

Additionally, drones improve access to inaccessible and difficult to access places and augment their use in the healthcare supply chain, retail and food services. The challenges which hamper big adoption are also present in the literature however. Technical issues such as battery capacity issues, payload capacity, route optimisation, and communication infrastructure will be maintained. The economy and regulation also play a major role in the large-scale commercial implementation. Consumer perception is a huge influence on adoption at some point. Despite the speed and convenience of drone delivery that is being enjoyed by customers, safety is among other concerns. Some of the significant obstacles are privacy, and noise. In such a way, the practical application of the UAVs delivery systems requires technological advancement, a regulatory environment, and the increment in the degree of popular trust.

6.Challenges

High Investment Cost:

The delivery of drones is expensive in capital. Autonomous fleets of drones, battery stations, maintenance networks, artificial intelligence software, cybersecurity networks and the companies must invest in trained employees. This acts as a point of entry block in terms of finance in the case of small and medium retailers. It is also able to separate the large companies and the small companies. Costs of Compliance and Regulatory Uncertainty: There are no apparent policies regarding commercial drone operations developed by governments. The licensing fees, the insurance, the airspace permission and the compliance increase the operation costs procedures. Any setback in the regulations will decrease investment and this will discourage innovation in the industry.

Displacement of Employees:

The automation of last-mile delivery can reduce the necessity of the conventional delivery employees. It may lead to temporary unemployment or job displacement in the logistics industries. Since new forms of jobs based on technology will emerge, the change will lead to economic imbalance and instability in income.

Price of the infrastructure construction: Drone operations require exclusive airspace, landing zones, surveillance, and power stations. This construction of this infrastructure is a social project as well as a personal one which affects the budgetary expenditure. of state and city planning.

Limited Economies of Scale:

The drones are now better placed to deliver small and light packages. Traditional transport is more economical as bulk shipment is concerned. This limits scalability and may reduce the overall economic efficiency unless more technological advances are applied advances.

Risk and Insurance Burden:

Accidents, cybersecurity breach, or failure of financial liabilities are provided deliveries. Insurance premiums on UAV operations can be very expensive and this will lead to the increase of the cost of operation and affect the price models.

Market Concentration:

Huge tech based entities possess improved ability of assimilating UAV systems. This may contribute to the market dominance of large scale retailers, reduce competition and even dominate the monopolistic logistics market behaviour.

Environmental Costs Analysis: Although there will be low usage of fuel since the drones will be used, the battery will experience low usage. There are environmental implications of manufacturing, waste disposal and energy extraction. Otherwise, economic benefits may be neutralized, due to unfortunate costs relating to the environment that are not controlled.

7.Conclusion

This paper will discuss the increasing significance of UAV delivery systems in the current retail logistics. Some of the major advantages of drone technology include quick delivery, accessibility, cost-effectiveness, and the development of an eco-friendly environment. Despite the availability of such advantages, the implementation of UAV delivery systems is largely dependent upon the endorsement of consumers, safety, privacy, and regulations. The implementation cannot be guaranteed based on the technological readiness of the consumers. It is essential for the governments, technology developers, and retail organizations to join hands and establish appropriate and organized regulatory systems for the implementation of UAV delivery systems. The innovation and communication of the technology with consumers will be essential for building trust regarding UAV delivery systems. It is essential to understand that UAV retailing is a disruptive technology in the retail business. It is expected to show good prospects for revolutionizing the future of delivery services with appropriate planning and regulation.

8.Suggestions

The governments must also have proper regulation frameworks on the management of airspace, safety, and protection of data privacy to ensure the successful implementation of UAV retailing. Therefore, to reach the objective of the high level of operational reliability, retail organizations are forced to make an investment in navigation tools, high-level and artificial intelligence as well as communication networks. Introduction of consumer trust is yet another strategic concern that needs to be conveyed especially in terms of safety, privacy, and environmental benefits. Moreover, pilot studies should be made in advance before the system is implemented on a large scale in specific areas to measure the effectiveness of the system, lessening the degree of uncertainty. Moreover, the presence of the UAVs in the current supply chain management system would encourage operational coordination. Close coordination of policymakers, innovators and retail organizations must exist and this would be highly critical in supporting responsible innovation to sustainable growth.

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Going Local, Thinking Green: Staycations and the Evolution of Sustainable Consumer Choices

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ABSTRACT

The travelling pattern of people has changed over the globe noticeably , leading to increase in preferring domestic travel and staycation. These changes can also be seen as depicting signs of rising awareness towards sustainability and having a sense towards being a green consumer. This awareness plays a major role in shaping the consumer decisions. This study explores the existing link between staycation preferences and the green consumer behaviour. The study has inculcated qualitative research approach and also based on reviewing already published articles circulating this topic. The findings point out towards key influencers like environmental concerns , cost , safety views and lifestyle that shape the staycation choices. The post and pre pandemic times seem to have a behavioural shift as in after the pandemic there is strengthening in the idealogy of staycation concept. Furthermore the niche-markets have been targeted to be given more advertisements for the green consumer and trying to make sustainability seem appealing. This study uses existing researches to show the emerging patterns. This paper shows how sustainability values are being reframed and are shaping the domestic tours.

Keywords : *staycation ,vacation, sustainability, green consumer behaviour, pandemic travel*

1. Introduction

Tourism and sustainability are deeply interconnected issues in today's world. As concern about climate change has grown, the travel industry has come under increasing pressure due to its role in producing greenhouse gas emissions, consuming natural resources, and contributing to the strain on popular destinations.

A staycation is simply not a budget-friendly alternative for people who cannot afford to travel, but also represents a meaningful choice made by consumers looking forward to live in a more environment friendly way. Understanding the people who decide to spend their holidays close to home, and what this tells us about how consumer values are changing.

The word staycation is a combination of the words stay and vacation. It describes the idea of spending a holiday at or very close to one's home, rather than travelling far. The idea is not totally new and was found in sources as early as 1944, but it became widely discussed during the global financial crisis of 2008. At that time, many people could no longer afford international travel because of high fuel prices and a difficult climate, and so they began to look for enjoyable holiday options closer to home (Muritala et al., 2022; Gaberli, 2025). Over the years, interest in staycations continued to grow, partly because consumer attitudes were shifting and that staying local was gradually being seen as a genuine and worthy choice rather than a second option. The COVID-19 pandemic then catalyzed this trend, as travel restrictions around the world forced people to

find ways to rest and relax without leaving their home areas.

Staycations are interesting from the perspective of green consumer research because they align with the values of people who care about the environment. Green consumers are those who take environmental concerns seriously when making decisions about what to buy and how to live.. Because staycations involve little or no long-distance travel, they produce far fewer carbon emissions than longer holidays. They also tend to keep spending within their local communities, supporting local businesses and benefiting the area where they live. Both of these outcomes align with the goals of a green consumer. People choose to holiday locally for many reasons, and environmental concerns are one of them. Budget, health issues, family commitments, travel restrictions, and a preference for familiar surroundings all contribute to the decision to stay close to home. There is also an important question of access. Not everyone would enjoy a fulfilling local holiday. This paper explores the relationship between staycation behaviour and green consumerism by reviewing seven academic studies from tourism management, urban planning, consumer behaviour, and sustainability. The paper is structured as follows. Section 2 explains the methodology used to select and analyse the studies. Section 3 presents the thematic review, built around three themes found across the literature. Section 4 identifies the main research gap. Section 5 outlines directions for future research, and Section 6 offers a conclusion that reflects on the significance of the findings.

2. Methodology

This section details the research design, the data collection and source selection, the nature of the reviewed studies, and the limitations.

2.1 Research Design

This study inculcates a qualitative secondary research design, supported along a systematic review of the existing academic literature on the same context. Instead of using surveys and questionnaires as the primary method, the research analysed previously published data to understand the relationship between green consumers and staycation preferences, while also identifying the factors that shape these interests and decisions.

A literature-based approach seemed more suitable because the study's objective was to find facts and to combine existing findings rather than to test a new idea or model. By analysing various studies, the research aims towards identifying recurring behavioural patterns, linkages, and emerging trends in the sustainable domestic tourism.

2.2 Data Collection and Source Selection

A couple of academic journal articles were selected for analysis. The access to those papers was possible due to platforms like Google Scholar , Semantic scholar and more. The major platforms facilitated the easy search for materials.

Search keywords included wordings and combinations such as:

- Staycation behaviour
- Green consumer behaviour
- Sustainable tourism
- Consumer preferences on staycation
- Domestic travel preference
- Environmental motivation in tourism

To ensure surety and reliability , the following criteria were taken into considerations

- Most of the articles referred were published between 2019 and 2024
- Studies focusing on domestic tourism or staycations
- Research examining sustainability or environmentally conscious travel behaviour
- Articles published in English

Moreover, the opinion-based and script-based and non-academic sources were excluded from the core analysis and only referred to for background information or general awareness.

2.3 Nature of the Reviewed Studies

The majority of the selected studies used quantitative research methods, particularly surveys and questionnaires, to gain insights into domestic travellers. Several studies used statistical tools, such as regression analysis and the examination of models through mathematical equations, to understand the influence of environmental attitudes on travel intentions.

A few studies adopted conceptual or review-based approaches to discuss sustainable tourism transitions and behavioural shifts regarding the post-COVID-19 pandemic. The reviewed literature included diverse geographical considerations, enabling comparisons of consumer behaviour across regions.

2.4 Limitations

Since the study relies entirely on secondary data, its

findings are hugely dependent on the scope and methodology of previously published research. The comparability among one another can be restricted due to the difference in the size, nature and other factors of the samples.

Additionally, since no primary data was collected, the conclusions are interpretative rather than practical.

3. Literature review (Thematic view)

The seven studies chosen for this review were analysed using a thematic approach, yielding three main themes that recur across the literature. These themes relate to the environmental and sustainability aspects of staycation behaviour, the psychological and social reasons people choose local leisure, and the ways in which the physical environment of a city or neighbourhood supports or limits sustainable travel. Each theme is discussed in the sections below.

3.1 Staycations as a Vehicle for Sustainable and Green Consumer Behaviour

The clearest and most direct link between staycations and green consumer behaviour is the reduction in carbon emissions that results from choosing not to travel long distances on holiday.

Muritala et al (2022) in their study on COVID 19 and the implications for leisure travel explored upon the discussion of staycation on X and the trending keywords being used for travel search in the search engines. The findings showed that when there is a shift to short leisure travel from the longer ones, the emission of green gas is reduced for the entire tourism sector as well, which is currently contributing to around eight percent of greenhouse gas emissions. The awareness among people for environmental thinking is increasing, as seen through the findings of the study.

Gaberli (2025) was engaged in the study of staycations and delivered interesting findings where staycations involve travelling within 50 miles from home, which is less carbon-intensive. The role of the government in promoting local tourism by way of using tools like holiday vouchers, coming up with family-friendly programmes could be more useful. Staycations are to be seen not as a response to difficult situations but as a better, conscious choice.

Satpute et al (2024) explored about the profitability in tourism and found that after the pandemic of 2019, there is an opportunity for leisure that is sustainable. Staycations are no more a temporary solution but a drastic shift in the consumer behavior.

Mulvey et al (2025) deeply analzed the dta from Google Trends for the period between 2016 and 2022 and discovered that people's interest in the concept of staycations was prevalent much before the pandemic of 2019. The particular theme of activities that consumers were very specific like nature exploration and outdoor activity. Enjoying leisure among the local area is seen as a consumer's conscious choice.

James (2014) with a study focused on student behavior came up with the motivation found among students relating to environmental values and local culture. This further strengthens the concept of staycation being more preferred by the next generation too.

3.2 Psychological Distance, Local Belonging, and Sustainable Motivation

Construal Level Theory is used for studying staycations and the theory states that when psychologically people think about things which are far away, the thought process is abstract. However, when thinking about things that are near, people are able to come up with specific and concrete ideas.

Muritala et al (2022) in his study found that the desire to have an experience like travel was strong during the pandemic, which led to hotel bookings locally. It was found that staycations gave people a real feel of being away from home, while still being near to home.

Mulvey et al (2025) in their research found that the desire for staycations were very high in cities like Singapore, Hong Kong and the United Kingdom, where people were understandably busily scheduled. Staycations are an ideal choice for people in the urban area where the need and benefit match, without making a big compromise.

Gaberli (2025) in the study was able to identify that one of the key reasons for people to select stayacaton was because of the sense of belongingness to the local area. Customers who value sustainability, called as green consumers also hold community attachment close to them, since it aids in protecting the local environment.

Mutitala et al (2022) analyzed through social media discussions that supporting local businesses was an important criteria that consumers think of in staycations. Staycation is seen not only as a way to give back to the local community but also as a picture of responsible consumption that is an important trait of green consumers.

3.3 Built Environment, Local Accessibility, and Enabling Sustainable Mobility

An important and unique contribution to this part of research comes from Elldér, Haugen, and Vilhelmson

(2022), whose study focuses on urban planning in the Västra Götaland region of Sweden. Their work does not directly talk about staycations, but it is highly Relevant because it examines the physical conditions that makes it possibly or difficult for people to live their daily lives locally. Their main finding is that when a neighbourhood has a good and variety of different services such as grocery shops , nurseries , hospitals and such people would likely choose to walk or cycle to fulfill these needs than going ahead with driving for their daily work. This is exactly the kind of behaviour that green consumer thoughts and sustainable tourism policy are trying to encourage.

The researchers Elldér and their team (2022) found that the connection between the number of services and how people travel is not that simple. They discovered that there are points where things change. When a neighbourhood has a number of local services people start using their cars less but if more services are added after that it does not make a big difference in how people travel. It is only when a neighbourhood has one hundred and fifty or more local services, which is what you usually find in a busy city centre that people start walking and cycling a lot. This is a deal for people who want to live in a way that is good for the environment and take holidays at home because it shows that being able to live and holiday locally is not just about what you believe in. It also depends a lot on the kind of neighbourhood you live in. People who live in cities with a lot of services have an advantage when it comes to making choices that are good for the environment while people who live in areas with fewer services face problems that they cannot solve just by wanting to do the right thing.

The researchers Mulvey and their team (2025) found results when they looked at data on what people search for online all around the world. They found that people are most interested in taking holidays at home in cities that is busy and have a lot of services, where it is easy to live locally. This supports the idea that the success of tourism depends on how good the city is to live in. When you consider this along with the suggestions made by Gaberli (2025) and Satpute and Bapat(2024) it becomes clear that to encourage people to make tourist choices that're good for the environment you need more than good policies for tourism.You also need to plan cities and neighbourhoods in a way that makes it easy for people to walk live in mixed-use areas and have access, to services.

Research Gap

The literature that was reviewed clearly shows that the existing works in the area of staycations were predominantly conducted in the developed nations. It is unknown whether the same picture exists in the developing nations as well. In the developing nations, the concepts of environmental awareness is still eveolving. Hence, research works that compare the bevavior across a wide range of nations and communities would contribute more for the effective decision making of policy makers.

Scope for future research

The concept of staycations and green consumer behavior is a key area that is focused in the recent past. Even though many works of literature are available, there are still many areas unexplored. The effect of COVID-19, is it a temporary one or a permanent change in behavior is one area that is not clear. Continued research in areas like these, would add to the body of literature and enable future researchers to delve deep into these areas. This will further enable governments for better policy making in relation to the tourism sector. Studies focusing on the change in the attitude of consumers over the years will show whether they are truly after local leisure.

Conclusion

This paper examined the relationship between staycation behaviour and green consumerism through a thematic review of a collection of a few papers. The analysis shows that staycations are not just a reason or response to economic limitation or travel restrictions, but reflect changing consumer values especially towards environmental awareness and moral sense.

The findings indicate that staycation practices match with green consumer principles in several ways. When long-distance travels are reduced the carbon emissions inturn lowers and also guides tourists towards local tourism as a comparatively sustainable alternative. At the same time, mental motivators such as the desire to escape pressure, relaxation, and a sense of belonging to a community demonstrate that sustainability focused behaviour can also exist with personal leisure satisfaction. Importantly, the environmental structure reveals that sustainable support is shaped not only by individual insights but also by factors such as accessibility to the facilities and the availability of local amenities.

Overall, the rise of staycations shows that travel preferences are evolving over time. People are becoming more conscious about their actions and its result that will be caused. Choosing local destinations doesnt just help economically but also seems to help one connect to his locality and community.

Staycation may not replace traditional travel but present a practical solution. This can be a measure towards going green and enhancing the future.

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Shaping Style: An Analysis of Consumer Preferences toward Sterling Silver Jewellery And Implications for Emerging Brands

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ABSTRACT

The demand for affordable and stylish sterling silver jewelry is on the rise in India. However, there is limited knowledge about how consumers make purchasing decisions for such products. This study focuses on three major aspects: how consumers make decisions on purchasing these products on particular occasions or by impulse, how consumers are influenced by social media marketing for purchasing sterling silver jewelry, and how consumers are influenced by trust and assurance of 925 purity while purchasing these products. Primary data has been collected by using a structured questionnaire and an online survey. This study has concluded with implications for emerging brands

1. INTRODUCTION

Recently, a significant change has been observed in the Indian jewelry market, as consumers, particularly millennials and Gen Z, are now considering sterling silver jewelry not only as a "budget substitute" for gold but also as a luxury item. While gold has always been a dominant player in the Indian jewelry market, there has been a significant demand for sterling silver jewelry, which is not only light and affordable but also 925 hallmarked.

According to the forecasted figures of the global market, the sterling silver market, which is currently at a figure of 22.5 billion dollars, is estimated to grow to 38.2 billion dollars in 2023-2024 and reach a staggering figure of 57.2 billion dollars by 2032, growing at a rate of 14 to 15%, where India has a huge advantage in terms of skill and export capabilities.

In the overall Indian jewelry market, valued at USD 87.8 billion in FY 2024 and aiming to reach USD 195 billion by 2032, silver's share may be small, but it is increasing exponentially. The prices of silver jewelry have also risen to record levels, touching Rs 2,40,000/kg by the latter part of 2025, and currently over 270-280000/kg.

India's market for sterling silver is highly fragmented, but it is consolidating to some extent with powerful brands that are carrying forward Indian essence in association with trendy looks. Some of the key players in this market are:

i)**Shaya by Caratlane** (**backed by Tata) –** They offer a variety of 92.5 hallmark silver jewelry , which is not only available on their site but also on Amazon.

ii) **Mia by Tanishq** – This brings the trust of the famous brand Tanishq into the world of sterling silver jewelry.

iii) **Touch925** – This is a pure silver online jewelry retailer that offers hallmark-certified silver jewelry for men, women, and kids across various categories.
iv) **Giva** - It is prominent in the online sterling silver jewellery market is Giva, a brand that has established itself as a market leader and a rapidly growing player in India's online silver jewellery market.

A key trend impacting the industry is the growing inclination among Gen Z and millennials towards silver over gold. A recent survey of prominent metros in India revealed that "a large proportion of young consumers associate silver with 'wardrobe friendliness,' 'affordable,' 'style-oriented,' while gold is associated with 'investment,' 'high-end. ' In the minds of this segment of consumers, "silver jewellery is becoming an instrument for individuality, with growing demand for minimalist pendants, stackable rings, oxidised antique jewellery, gifting jewellery, etc."

Purchases are now trending towards "daily wear, lightweight jewellery" rather than "just heavy bridal or ceremony-driven jewellery". Influencers, social media, Instagram/WhatsApp-based sellers have an "out-sized influence on brand trials, particularly for online-first brands". Assurance of 925 purity and hallmarking is also impacting trust, but price sensitivity remains high in comparison to gold.This is an opportunity as well as a challenge for new brands because the younger segment of the market is eager to try out silver, but the younger segment is also digitally influenced, price-sensitive, and design-conscious.

2. LITERATURE REVIEW

Recent literature points to a seismic shift in the silver jewelry industry, from its traditional position as a commodity-based investment product to its current status as a design-driven "fashion statement." Biyani (2025) also highlights that "today's consumer has moved from bullion value to unique craftsmanship and aesthetic appeal." The hallmark and brand name are key drivers of consumer trust in this market segment. However, this is primarily due to the demographic characteristics of Gen Z and Millennials' age groups. ScanX News (2026) highlights that 51% of Gen Z consumers directly prefer to use silver products due to their usability for daily wear and their minimalist look. This is also highlighted by Agarwal (2022) that 64% of young consumers have strategically opted for silver for major festivities due to the increase in prices of gold, which have increased by 25-30% in the last few years. In addition, the sculptural silver trend, as defined by Gonsalves (2026), is part of the general movement towards daring and sculptural silver jewelry that can enhance one's attire instead of just being for the sake of decoration. The focus of the urban market segment on lifestyle accessories and sustainability, as described by Silvogue (2025) in the context of the 25% recycling rate of silver and the aesthetically pleasing appearance of the product, does not take away from the significance of the traditional perspective in the context of the overall market. According to Venkatesh (n.d.), the significance of the product in the context of the rural market segment is further reinforced by the product's ability to act as a hedge against inflation in the rural areas, described as the "liquid harvest."
In the context of the overall commercial viability of the product, the significance of the product is further reinforced by the entry of heritage gold brands into the silver segment under the brand name Gargi by PN Gadgil in response to the rising demand for silver jewelry (Agarwal, 2022). In addition to the product's aesthetically pleasing appearance, the convenience of the online shopping platform in the context of the ability to compare prices and customize the product has further reinforced the overall popularity of sterling silver as the preferred product type for contemporary consumers who are cost- and environment-conscious, as described by Silviya (2025). This is further reinforced by the technical standards for the product as described by Deepwear (n.d.), which indicate that the "925" hallmark forms the industry standard in the context of the balance between luster and durability.

3. OBJECTIVES OF THE STUDY

The study aims to investigate the factors influencing

consumers' purchasing decisions for Indian sterling silver jewelry, with special emphasis on the differences between occasional and impulsive buying, as well as the impact of brand credibility and 925 purity certification on building consumers' trust, especially for emerging brands. The study aims to create marketing strategies for emerging brands based on the analysis of consumers' data gathered from both primary and secondary research materials. The research aims to create insights on the factors influencing consumers' purchasing decisions for sterling silver jewelry, with special emphasis on emerging brands.

The research scope includes creating insights on the following factors influencing consumers' purchasing decisions for sterling silver jewelry in India: occasional and impulsive buying, as well as the impact of brand credibility and 925 purity certification on building consumers' trust, with special emphasis on emerging brands. The research aims to create insights for marketing strategies for emerging or mid-sized sterling silver jewelry brands in India.

4. RESEARCH METHODOLOGY

This section deals with the research tools used for the study. The primary data was collected through conducting a Google Form survey among 104 Gen Z and Millennial Indian consumers, who were asked about their purchase behavior, influence of social media, brand trust, and 925 purity. Convenience sampling technique was used to collect the primary data. The secondary data was collected through various articles and websites regarding the Indian market for silver jewelry and brands.

Data Collection:

i) Primary Data

The primary data collection is done through an online Google Form survey targeting Indian consumers (mainly GenZs and Millennials). The questions are structured and include factors related to occasion-based vs. impulse-based purchases, the impact of social media marketing strategies, and their perception of brand trust and 925 purity assurance. In all, 104 valid responses are obtained for the purpose of analysis.

ii) Secondary Data

The secondary data is collected from online articles and websites related to the Indian market for silver jewelry, key players in the market (Giva, Shaya, Mia, Touch925, etc.), These sources are included in the reference section of the paper.

iii) Sample Design

The sample design for the purpose of this paper is based on a convenient sample size using a purposive sample. Consumers are selected based on their familiarity with sterling silver jewelry and targeting the GenZ and Millennials as the prime customer base .

iv) Sample Size

The sample size for the study is 104 respondents.

5. ANALYSIS AND INTERPRETATION

The following section details about the data analysis and interpretation leading to useful findings.

A) Demographic Profile

Table 1. Demographic profile of the respondents

Demographics	Options	Percentage
Age Group	18-25	87.50
	26-35	8.70
	36-45	2.90
	Above 45	1.00
Gender	Male	41.30
	Female	58.70
Education	Graduation	37.50
	HSC/SSC	48.10
	Masters/PHD	7.60
	None/Other	6.70
Occupation	Student	85.60
	Salaried Professional	11.50
	Self-employed /Business owner	1.00
	Homemaker	1.90
Marital Status	Married	8.70
	Unmarried	91.30

As presented in Table 1, it is observed that the majority of the respondents are young in age, between 18-25 years of age, making up 87.5%. Moreover, it is observed that most of the respondents are students, making up 85.6%, whereas others are either males or females, with 55% of males and 45% of females in the group.Regarding their educational level, it is observed that most of the respondents are either HSC/SSC or Graduation holders, making up 48.1% and 37.5%, respectively, whereas only 7.6% of the group holds higher qualifications.Furthermore, it is observed that the majority of the group is unmarried, making up 91.3%, whereas only a few are either professionals or homemakers.

B) Buying Preferences:

Buying preference	Frequency	Percentage
Very rarely	43	41.3
Occasionally (1–2 times a year)	35	33.7
Frequently (3+ times a year)	26	25.0
Total	104	100

Table 2. Consumer Buying Preferences

From Table 2, it is found that the market is driven by seasonal intent rather than habit. Silver is probably considered an impulse purchase or gift for the majority of the respondents who buy it rarely or occasionally at the rate of 75 %. The brands should focus on the 25% who buy silver frequently for consistent revenue, but the high-impact marketing of the festivals can help reach the larger market.

C) Trust & Purity Factors:

Factor	Most Important	Important	Neutral	Less Important	Not Important	Weighted Average	Remarks
925 Purity Mention	56	27	19	1	1	4.31	Important (4.06)
Weight info mention	48	38	14	4	0	4.25	
Prefer 925-marked	33	50	18	3	0	4.09	
Trust Startups via Social media	14	52	23	12	3	3.6	

Table 3 . Trust & Purity

From Table 3 , it is found that "925 Purity Mention" is the major factor for consumers, with the highest rank and weighted average of 4.31. This remark is included in the "Agree" category, with a weighted average above 3.5, indicating its significance for establishing market trust with consumers. The second major factor for consumers is "Weight/Purity Info for Trust," with a weighted average of 4.25, also ranking as a vital factor for establishing market trust with consumers.

Respondents prefer products with the "925" marking, even if the price is higher (4.09 weighted average), although they show lower agreement for the factor of "Trust Startups via Social" with a weighted average of 3.6. All factors show weighted averages above 3.5, indicating the significance of purity and product information for establishing market trust with consumers.

D) Trust & Experience :

Factor	Most Important	Important	Neutral	Less Important	Not Important	Weighted Average	Remark
Weight/price details	29	30	17	9	9	3.298	Important (3.5)
Return/COD policy	34	21	30	12	7	3.606	
Reviews/ photos	32	17	39	10	6	3.567	
Packaging/ branding	29	22	36	12	5	3.558	

From Table 4 , It is found that Return & COD policy are the top drivers for consumers, followed by reviews/photos as the most important trust factors. Followed by aesthetics such as packaging design and weight and price details as least important factors. For startups, trust is established through clear policies , customer reviews and certifications rather than product details.

6. FINDINGS

When people buy sterling silver jewelry, they are very concerned about the 925 purity and clear weight/purity information. This shows that there is a "purity premium" over price discounts. Most people say that buying things for special occasions like holidays, birthdays, or gifts is the main reason they do it. However, a lot of people also buy things on impulse. Having a presence on social media and regular digital communication makes people more likely to trust and buy from new brands. When it comes to building trust, being open about things like your hallmark, pricing, and return/COD policy is more important than your packaging or branding.Most of the participants were young, single, with a medium level of education. This indicates that Gen Z and millennials are the target audience of sterling silver jewelry products. On average, consumers' purchasing decisions depend on a combination of sensitivity to occasions, digital channels' impact, and authenticity rather than on emotional or investment-related grounds.

6.1 Context to New Startups/Players in Sterling Silver market :

The results of the study can be useful to new brands in terms of improving their marketing and product strategies. The results of the study indicate that young consumers really care about the 925 purity assurance, pricing, and weight information. Based on the analysis, new brands should definitely consider the hallmarking and product information strategy. Moreover, the results of the study indicate that the majority of the purchases are driven by special occasions such as holidays, birthday, or gift-giving. Also, the results indicate that a significant number of the purchases are driven by impulse buying. This

means that new brands can consider developing product collections in the form of compacts, which are designed for special occasions. Furthermore, as social media interaction and high exposure to digital interactions are shown to enhance trust and encourage trial, new brands could consider focusing their product development and communication mix on Instagram-style content, unboxing, or even influencer-style demonstrations to encourage interaction with the Gen Z or student segments, as these are the largest segments represented in the sample data. This would enable new brands to differentiate themselves against more established competitors and position the product category of sterling silver jewelry as trusted, fashionable, and affordable for young Indian consumers.

7. CONCLUSION

This study indicates that consumer behavior related to the purchase of sterling silver jewelry is influenced by trust, transparency, and situational factors rather than price and design-related factors. Factors like 925 hallmark stamping, transparent weight disclosures, and brand authenticity play an important role in influencing consumer behavior related to purchasing decisions. Hence, it is suggested that marketers of silver jewelry should focus on hallmark stamping, return policy with cash on delivery, and narrative marketing through social media platforms. To incorporate consumer behavior related to gifting and impulse purchases, it is suggested that marketers of silver jewelry introduce occasion-based marketing of silver jewelry, simple designs of silver jewelry for daily use, and influencer marketing. For new entrants to enter the market, it is suggested that they focus on factors like affordability, design, trust, transparent marketing practices, and online presence.

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A Comprehensive Financial Performance Analysis of AXIS Bank Using CAMEL Framework and Ratio Analysis

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ABSTRACT

The banking sector in India has experienced significant transformation, with private sector banks driving financial innovation and economic growth. This study examines AXIS Bank Limited's financial performance from FY2022 to FY2025 using the CAMEL framework — Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity — along with ratio analysis. Key findings include a Total CAR of 17.07%, Gross NPA of 1.28%, ROA of 1.77%, NIM of 3.98%, and a strong LCR of 119.7%.

Keywords: *AXIS Bank, CAMEL Framework, Financial Performance, Ratio Analysis, Capital Adequacy, Asset Quality, Banking Sector*

1. INTRODUCTION

1.1 Background

AXIS Bank, formerly UTI Bank, was established in 1993 and is headquartered in Mumbai. As of March 2025, it operates over 6,000 branches, manages total assets exceeding ₹16 lakh crores, and holds a market capitalization of approximately ₹3.85 lakh crores, ranking among India's top three private sector banks.

1.2 Significance

The CAMEL framework, adopted globally by banking regulators, provides a structured approach to evaluating Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity. This multi-dimensional analysis is essential for investors, regulators, depositors, and policymakers assessing financial soundness.

1.3 Research Objectives

- Evaluate capital adequacy and loss absorption.
- Analyse asset quality via NPA and provisioning.
- Assess management efficiency through cost and productivity.
- Examine earnings quality and profitability.
- Evaluate liquidity and short-term funding.

1.4 Hypothesis

Capital adequacy

- H_0: Capital adequacy is insufficient.

- H_1: Capital adequacy is sufficient.

Asset quality

- H_0: High NPAs, poor provisioning.
- H_1: Low NPAs, adequate provisioning.

Management efficiency

- H_1: Inefficient cost and productivity.
- H_1: Efficient cost and productivity.

Earnings quality

- H_0: Poor earnings and profitability.
- H_1: Strong earnings and profitability.

Liquidity

- H_0 Liquidity inadequate for short-term needs.
- H_1: Liquidity adequate for short-term needs.

1.5 Scope and Limitations

The study covers FY2022–FY2025 using standalone audited financials and publicly available data. Qualitative aspects such as governance culture and human capital are not fully captured through quantitative metrics alone

2. LITERATURE REVIEW

The CAMEL framework originated in the US in the 1970s and has been validated in numerous academic studies as a strong predictor of bank performance and financial distress. Research on Indian banks confirms that private sector banks generally outperform public sector counterparts in capital adequacy, asset quality, and profitability. Studies highlight that NPA management, operational efficiency, and diversified revenue streams are key determinants of banking performance. The Basel III liquidity standards — LCR and NSFR — have further strengthened the regulatory focus on liquidity risk management across Indian banks.

3. RESEARCH METHODOLOGY

3.1 Research Design

This study employs a descriptive and analytical design using quantitative ratio analysis of secondary financial data.

3.2 Data Sources

- Audited Annual Reports of AXIS Bank (FY2022–FY2025)
- Quarterly financial results and investor presentations
- Regulatory filings with RBI, SEBI, BSE, and NSE

3.3 Period of Study

FY2022 (April 2021–March 2022) to FY2025 (April 2024–March 2025).

3.4 CAMEL Ratios Used

Component	Key Ratios
Capital Adequacy (C)	Total CAR, Tier I Ratio, Tier II Ratio, Shareholders' Funds
Asset Quality (A)	Gross NPA Ratio, Net NPA Ratio, Provision Coverage Ratio
Management Efficiency (M)	Cost-to-Income Ratio, ROA, ROE, Branches, Employees
Earnings Quality (E)	NII, NIM, Fee Income, Operating Profit, Net Profit, EPS
Liquidity (L)	LCR, Credit-Deposit Ratio, CASA Ratio, Investment-Deposit Ratio

4. DATA ANALYSIS AND INTERPRETATION

4.1 Capital Adequacy

Table 1: Capital Adequacy Ratios of AXIS Bank (FY2022–FY2025)

Capital Adequacy Metrics	FY2022	FY2023	FY2024	FY2025
Total Capital Adequacy Ratio (%)	17.86	16.98	16.63	**17.07**
Tier I Capital Ratio (%)	13.68	13.79	14.20	**15.07**
Tier II Capital Ratio (%)	4.18	3.19	2.43	2.00
Shareholders' Funds (₹ crores)	1,19,526	1,30,588	1,51,216	**1,78,617**

AXIS Bank maintained a Total CAR of 17.07% in FY2025 — approximately 550 basis points above the RBI's regulatory minimum of 11.5%. The Tier I ratio strengthened from 13.68% to 15.07%, reflecting organic capital generation through retained earnings. Shareholders' funds grew at a CAGR of 14.2%, reaching ₹1,78,617 crores in FY2025

4.2 Asset Quality

Table 2: Asset Quality Indicators of AXIS Bank (FY2022–FY2025)

Asset Quality Metrics	FY2022	FY2023	FY2024	FY2025
Gross NPA Ratio (%)	2.76	2.02	1.43	**1.28**
Net NPA Ratio (%)	0.75	0.48	0.31	**0.33**
Provision Coverage Ratio (%)	73.54	76.32	78.91	**82.45**
Gross NPA Amount (₹ crores)	26,647	19,355	13,750	**13,327**
Net Advances (₹ crores)	6,60,862	7,91,215	9,61,812	**10,40,811**

Gross NPA declined from 2.76% in FY2022 to 1.28% in FY2025 — a reduction of 148 basis points — placing AXIS Bank among India's best-performing private banks. The absolute NPA amount halved from `26,647 crores to `13,327 crores despite significant loan book growth. A Provision Coverage Ratio of 82.45% demonstrates that the bank has more than adequately cushioned against credit risks

4.3 Management Efficiency

Table 3: Management Efficiency Indicators of AXIS Bank (FY2022–FY2025)

Efficiency Metrics	FY2022	FY2023	FY2024	FY2025
Cost-to-Income Ratio (%)	48.49	65.49	48.62	**47.12**
Operating Costs to Assets (%)	2.08	3.04	2.45	**2.41**
Return on Assets (%)	1.29	0.85	1.85	**1.77**
Return on Equity (%)	12.78	8.77	18.51	**16.43**
Employees (number)	82,534	91,456	98,231	**1,03,456**
Branches (number)	4,829	5,174	5,561	**6,091**

The Cost-to-Income ratio improved to 47.12% in FY2025, comparing favorably with industry benchmarks. The FY2023 spike to 65.49% was a one-time outcome of elevated provisioning and restructuring impacts, which was quickly corrected. ROE of 16.43% is within the bank's target range of 15–18%, while the branch network expanded by 1,260 outlets during the study period.

4.4 Earnings Quality

Table 4: Earnings Quality Indicators of AXIS Bank (FY2022–FY2025)

Earnings Metrics	FY2022	FY2023	FY2024	FY2025
Net Interest Income (₹ crores)	39,894	43,087	49,894	**54,348**
Net Interest Margin (%)	3.05	3.48	3.55	**3.98**
Fee Income (₹ crores)	15,412	17,231	20,234	**22,504**
Operating Profit (₹ crores)	28,546	24,187	37,123	**42,105**
Net Profit (₹ crores)	14,251	10,915	26,583	**26,373**
Earnings Per Share (₹)	45.99	35.16	85.49	**90.58**

NII grew at a CAGR of 10.8%, reaching ₹54,348 crores in FY2025, supported by NIM expansion of 93 basis points to 3.98%. Fee income grew at 13.5% CAGR to ₹22,504 crores, diversifying income beyond core interest earnings. EPS nearly doubled from ₹45.99 to ₹90.58, demonstrating strong shareholder value creation.

4.5 Liquidity

Table 5: Liquidity Indicators of AXIS Bank (FY2022–FY2025)

Liquidity Metrics	FY2022	FY2023	FY2024	FY2025
Total Deposits (₹ crores)	8,18,756	9,26,334	10,67,312	**11,72,952**
Credit-Deposit Ratio (%)	80.73	85.42	90.12	**88.74**
Cash to Deposits Ratio (%)	11.0	7.0	8.0	6.0
Investment to Deposits (%)	33.0	30.0	31.0	**34.0**
Liquidity Coverage Ratio (%)	124.5	118.3	121.8	**119.7**
CASA Ratio (%)	43.2	42.8	43.7	**44.2**

Total deposits grew at a 12.6% CAGR to ₹11,72,952 crores, reflecting strong customer confidence and a competitive deposit franchise. The LCR of 119.7% consistently exceeds the Basel III minimum of 100%, confirming robust liquidity risk management. The CASA ratio of 44.2% ensures access to low-cost deposits, directly supporting net interest margin stability

5. FINDINGS AND DISCUSSION

Integrated CAMEL Scorecard

CAMEL Parameter	Key Metric (FY2025)	Assessment
Capital Adequacy	Total CAR: 17.07%, Tier I: 15.07%	✅ Strong
Asset Quality	GNPA: 1.28%, PCR: 82.45%	✅ Strong
Management Efficiency	Cost-to-Income: 47.12%, ROE: 16.43%	✅ Strong
Earnings Quality	NIM: 3.98%, Net Profit: ₹26,373 Cr	✅ Strong
Liquidity	LCR: 119.7%, CASA: 44.2%	✅ Strong

AXIS Bank scores favorably across all five CAMEL dimensions, positioning it in the top tier of Indian private sector banks. The most notable achievement is asset quality improvement, which reduced credit costs and significantly boosted profitability. However, areas requiring ongoing monitoring include fintech competition, economic cycle exposure, and evolving regulatory requirements.

6. CONCLUSION

This CAMEL analysis confirms AXIS Bank as a financially sound and well-managed institution across FY2022–FY2025. Strong capital buffers, industry-leading NPA ratios, consistent earnings growth, and robust liquidity collectively reflect a bank well-positioned for India's dynamic banking landscape. Sustained focus on digital transformation, risk management, and customer experience will be critical to maintaining this performance trajectory.

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A Study on Dynamic Product Mix Optimization and Its Impact on Seasonal Sales Performance of Amul Ice Cream

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ABSTRACT

The ice cream sector is significantly impacted by the seasonality of demand, and therefore product planning becomes a very important consideration for success in this field. The current research incorporates both the theoretical and practical aspects of the subject matter, focusing on the influence of dynamic product mix optimization on the seasonal sales performance of Amul Ice Cream.

A descriptive research design will be utilized for this research with the primary data obtained through the use of structured questionnaires involving 150 respondents. The secondary data will be obtained from scholarly publications and reports. Correlation, regression, and ANOVA are some of the statistical tools that will be utilized in the analysis of this research.

Results show that the synchronization of product mix with seasonal demand is effective in increasing sales, minimizing waste, and improving customer satisfaction. The conclusion drawn from this study is that product mix adjustment plays an important role in the profitability of ice cream production firms.

INTRODUCTION

The ice cream business is highly dependent on seasons; sales are high during summers and low during monsoons and winters. Hence, there is a need for businesses to develop dynamic strategies to ensure constant performance. The best strategy is dynamic product mix, whereby changes in product lines are made depending on the season, customer preference, and market situation.

Amul Ice Cream is a well-known dairy product that produces different types of products, such as cups, cones, sticks, tubs, family packs, and superior types. Amul is an ideal example for analyzing the product mix strategy due to its variety of products and marketing channels.

Conceptually, this is important because it ensures optimal resource utilization and avoids wastage and inefficiency, which are not environmentally friendly. Analytically, it aids in understanding consumer behaviour, demand, and performance in different seasons.

Therefore, this research brings together both theoretical knowledge and practical approach to determine the impact of changes in product mix on season-based sales performance.

2.OBJECTIVES

DESCRIPTIVE

1.To understand how proper product mix planning can help reduce wastage and improve efficient use of resources in the ice cream industry in India.

2.To explore sustainable practices in product mix planning adopted by Amul Ice Cream to manage seasonal demand

ANALYTICAL

1.To understand the product mix of Amul Ice Cream across different seasons in Uttara Halli Branch

- (H_0): There is no significant change in the product mix of Amul Ice Cream across different seasons.
- (H_1): There is a significant change in the product mix of Amul Ice Cream across different seasons.

2.To identify consumer preferences for Amul Ice Cream products in different seasons.

- (H_0): There is no significant change in consumer preferences for Amul Ice Cream products across different seasons.
- (H_1): There is a significant change in consumer preferences for Amul Ice Cream products across different seasons.

3.To analyze the impact of product mix changes on seasonal sales performance.

- (H_0): Product mix changes have no significant impact on seasonal sales performance of Amul Ice Cream.
- (H_1): Product mix changes have a significant impact on seasonal sales performance of Amul Ice Cream.

4.To evaluate how customers respond to seasonal product offerings and promotions.

- (H_0): Seasonal product offerings and promotions have no significant effect on customer response.
- (H_1): Seasonal product offerings and promotions have a significant effect on customer response.

5.To offer suggestions for Amul ice cream company

3.RESEARCH METHODOLOGY

Research Design:

This study applies a descriptive and conceptual research design that will help in analyzing consumers' preferences and sales performance during different seasons. The research design will also help in establishing a connection between product mix optimization and results without manipulation of any variable.

Sources of Data:

The study is informed by both primary and secondary sources of data to increase its reliability and accuracy. The primary source of data comes from respondent interviews. The secondary sources include academic journals, publications, and online documents.

Method of Data Collection:

Data is collected through a questionnaire containing Likert scale questions administered to 150 respondents using convenience sampling.

4.REVIEW OF LITERATURE

Research conducted on the ice cream industry has shown that seasonality is a major factor influencing sales performance. According to studies conducted by Kumar and Singh (2021), Oliveira and Santos (2023), and Fernández and Gómez (2022), demand for ice cream rises during summers due to hot weather. Furthermore, consumer preferences vary from season to season according to the above studies. Another factor that impacts the performance of the business is product variety since it helps to meet the varying demands of consumers, according to studies conducted by Li and Zhao (2021), and Verghese and Thomas (2023).

Other pieces of research focus on aspects such as the optimization of product mixes, demand forecasting, and marketing to improve sales performance. As stated by Chanda et al. (2022) and Kalwar et al. (2022), product mix optimization leads to profit maximization. Moreover, demand forecasting has been shown to increase revenue, as highlighted by Ahmed and Rahman (2023). Effective management of the supply chain and inventory reduces wastage and improves operational efficiency, as stated by Nair and Thomas (2025) and Gupta and Varma (2025). Marketing initiatives also influence consumer decisions and sales performance positively.

5.CONCEPTUAL FRAMEWORK

SEASONAL DEMAND

↓

DYANAMIC PRODUCT MIX OPTIMIZATION

↓

EFFICIENT RESOURCE UTILIZATION

↓

REDUCED WASTAGE

IMPROVED SALES PERFORMANCE

- Seasonal demand affects product planning
- Optimum product mix enhances effective resource utilization
- Effective resource utilization decreases wastage
- Wastage minimization increases profit margin and sales
- Better sales assist in demand forecasting

This creates a continuous improvement cycle for business performance.

6.ANALYSIS AND INTERPRETATION OF DATA

5.2.1: CORELATION ANALYSIS

1.To understand the product mix of Amul Ice Cream across different seasons.

- (H_0): There is no significant change in the product mix of Amul Ice Cream across different seasons.
- (H_1): There is a significant change in the product mix of Amul Ice Cream across different seasons.

5.2.1: TABLE

Year	Season	Revenue (₹)	Units Sold	Cups	Cones	Sticks	Jubu Cups	Tubs (1L)
2021	Summer	200000	4000	12	10	8	3	3
2021	Winter	75000	1500	7	5	4	2	3
2021	Monsoon	120000	2500	9	7	5	3	3
2022	Summer	220000	4500	13	11	9	3	4
2022	Winter	80000	1600	7	6	5	2	3
2022	Monsoon	130000	2700	10	8	6	3	3
2023	Summer	240000	4700	14	12	9	3	4
2023	Winter	90000	1800	8	6	5	2	4
2023	Monsoon	150000	3000	11	9	6	3	4
2024	Summer	260000	5000	15	12	10	4	4
2024	Winter	98000	1950	8	6	5	2	4
2024	Monsoon	160000	3200	10	8	6	3	4
2025	Summer	285000	5300	16	13	11	4	5
2025	Winter	105000	2100	9	7	6	3	4
2025	Monsoon	170000	3400	11	9	7	3	5

SUMMER SEASON :

	Revenue (₹)	Units Sold	Cups	Cones	Sticks	Jubu Cups	Tubs (1L)
Revenue (₹)	1						
Units Sold	0.997	1					
Cups	0.992	0.989	1				
Cones	0.988	0.989	0.992	1			
Sticks	0.982	0.976	0.976	0.976	1		
Jubu Cups	0.885	0.883	0.899	0.872	0.837	1	
Tubs (1L)	0.604	0.571	0.614	0.579	0.605	0.458	1

MONSOON SEASON:

	Revenue (₹)	Units Sold	Cups	Cones	Sticks	Jubu Cups	Tubs (1L)
Revenue (₹)	1						
Units Sold	0.997	1					
Cups	0.991	0.987	1				
Cones	0.988	0.988	0.992	1			
Sticks	0.976	0.969	0.975	0.974	1		
Jubu Cups	0.849	0.845	0.876	0.847	0.825	1	
Tubs (1L)	0.505	0.48	0.52	0.493	0.52	0.429	1

WINTER SEASON:

	Revenue (₹)	Units Sold	Cups	Cones	Sticks	Jubu Cups	Tubs (1L)
Revenue (₹)	1						
Units Sold	0.997	1					
Cups	0.991	0.987	1				
Cones	0.988	0.988	0.992	1			
Sticks	0.976	0.969	0.975	0.974	1		
Jubu Cups	0.849	0.845	0.876	0.847	0.825	1	
Tubs (1L)	0.555	0.522	0.579	0.542	0.583	0.461	1

INTERPRETATION: There is a strong positive relationship between product mix and revenue, especially for Cups, Cones, and Sticks across all seasons. Hence, H_0 is rejected and H_1 is accepted, showing that product mix significantly varies across seasons.

5.2.2: REGRESSION ANALYSIS

2. To analyse the impact of product mix changes on seasonal sales performance.

- (H_0): Product mix changes have no significant impact on seasonal sales performance of Amul Ice Cream.
- (H_1): Product mix changes have a significant impact on seasonal sales performance of Amul Ice Cream.

5.2.2: TABLE

Year	Season	Product Count	Units Sold	Revenue (₹)	Rev / Unit (₹)
2021	Summer	36	4000	₹2,00,000	₹50.00
2021	Winter	21	1500	₹75,000	₹50.00
2021	Monsoon	27	2500	₹1,20,000	₹48.00
2022	Summer	40	4500	₹2,20,000	₹48.89
2022	Winter	23	1600	₹80,000	₹50.00
2022	Monsoon	30	2700	₹1,30,000	₹48.15
2023	Summer	42	4700	₹2,40,000	₹51.06
2023	Winter	25	1800	₹90,000	₹50.00
2023	Monsoon	33	3000	₹1,50,000	₹50.00
2024	Summer	45	5000	₹2,60,000	₹52.00
2024	Winter	27	1950	₹98,000	₹50.26
2024	Monsoon	35	3200	₹1,60,000	₹50.00
2025	Summer	48	5300	₹2,85,000	₹53.77
2025	Winter	29	2100	₹1,05,000	₹50.00
2025	Monsoon	37	3400	₹1,70,000	₹50.00
GRAND TOTAL		**498**	**47250**	**₹23,83,000**	**₹50.43**

Summary Output:

Table 3 — Regression Statistics

Statistic	Value
Multiple R	0.99716
R Square	0.994328
Adjusted R Square	0.993856
Standard Error	5,477.74
Observations	14

ANOVA						
Source	**df**	**SS**	**MS**	**F**	**Sig. F**	
Regression	1	6.31E+10	6.31E+10	2103.84	7.53E-15	
Residual	12	3.60E+08	30,005,595	–	–	
Total	13	6.35E+10	–	–	–	
Co-relation						
Term	Coefficient	Std Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-7,993.99	3,862.05	-2.07	0.0607	-16,408.68	420.7
Units Sold	53.06	1.157	45.87	7.53E-15	50.54	55.58

INTERPRETATION: The regression results show a strong positive impact of product mix (units sold) on revenue, explaining about 99.4% of variation. Thus H_0 is rejected and H_1 is accepted, indicating product mix significantly influences sales performance.

5.4.4 ANOVA TEST

3.To identify consumer preferences for Amul Ice Cream products in different seasons.

- (H_0): There is no significant change in consumer preferences for Amul Ice Cream products across different seasons.
- (H_1): There is a significant change in consumer preferences for Amul Ice Cream products across different seasons.

SUMMARY

Count	Sum	Average	Variance
150	402	2.68	2.017718
150	418	2.786667	1.860224
150	425	2.833333	1.790828
150	414	2.76	1.619866
150	418	2.786667	2.03472

5.5.5 ANOVA TABLE

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1.914667	4	0.478667	0.256703	0.905601	2.383885
Within Groups	1389.18	745	1.864671			
Total	1391.095	749				

indicating no significant variation.Therefore, H_0 is accepted and H_1 is rejected, showing seasonal promotions do not significantly affect customer response.

7.FINDINGS:

- Seasonal demand impacts sales
- Optimizing product mix increases efficiency
- Utilization of resources minimizes wastage
- Sustainability leads to better performance
- From corelation analysis we accept alternative hypothesis because there is a significant relationship between season and product mix
- From regression analysis we accept alternative hypothesis because there is significant positive relationship between product mix changes and sales performance
- From Anova 1 table we reject alternative hypothesis as there is no relationship between consumer preference across seasons
- From Anova table we reject alternative hypothesis as there is no relationship between customer response towards seasonal offerings and promotions

8.SUGGESTIONS:

Recommendations based on findings indicate that Amul needs to follow a dynamic product mix strategy, whereby during periods of peak demands for products such as cups, cones, and sticks, it should

increase their supply. Further, the organization can apply data analysis tools to forecast demand for its products accurately, allowing it to optimize its production processes. Moreover, even though consumer demand patterns seem to be quite stable, the introduction of new flavors and seasonal products will go a long way towards boosting customer interest and sales figures.

9.CONCLUSIONS:

The research finds that the dynamic optimization of product mix is vital for optimizing the sales performance during seasonal periods. It helps companies such as Amul maximize profits, minimize waste, and increase customer satisfaction by tailoring their products to meet seasonal requirements and consumer needs. Amul Ice Cream's market position is one of the most dominant ice cream companies in India Amul is regarded as a market leader in most studies conducted in various regions of IndiaThe application of theoretical and analytical knowledge indicates that product mix strategies are not merely operational but also strategic. Enterprises that follow flexible and analytical methods can continue to grow in seasonal businesses.

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A Study on the Impact of Sensory Marketing on Consumer Buying Behaviour with Special Reference to the Food and Beverages Industry

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ABSTRACT

This paper analyses the effect of sensory marketing on consumer purchasing behaviour at cafes, restaurants, and retail stores through literature reviews and theories in the existing research. Previous research indicates that sensory factors such as visuals, sounds, smells, tastes, and touch play a great role in determining customer perception, satisfaction, and purchase behaviours with the main conclusion from this research being that companies need to provide an experience that attracts customers and keeps them engaged. All the above is in accordance with the SOR model that illustrates how external sensory stimuli impact the internal states of customers resulting in their actions. The theory of experiential marketing indicates that modern consumers prefer experiences over goods while affective response theory explains how positive emotions result in purchases. Moreover, according to Hedonic Consumption Theory, people usually get motivated by pleasure and hedonism. From the above theory and reviews, it is concluded that successful sensory marketing ensures positive multi-sensory experience, which makes customers more satisfied and motivates them for visiting again. This leads to increased brand loyalty. Moreover, it has been stated that combining sensory approach with sustainability leads to improved brand image and customer perception, thereby making sensory marketing useful for sustainable business development..

Keywords : *Sensory Marketing, Consumer Buying Behaviour, Brand Perception, Visual, Auditory, Olfactory, Gustatory, Tactile.*

1.INTRODUCTION

With the advent of the fierce competition in the market, organizations have to contend with the issue of acquiring and retaining clients. Customers are no longer purchasing products on the basis of their attributes and cost; rather, they are becoming interested in experiences that offer them something interesting, pleasurable, and worth remembering. With this view, enterprises are concentrating on developing a surrounding that goes beyond practicality to human feelings and senses. Sensory marketing can be defined as the practice of designing stimuli through the activation of any or all of the five senses of human beings (touch, sight, smell, sound, and taste) to change customer perception, affect their emotions, and impact their behaviours. In essence, cafes, restaurants, and retail shops are shifting from being merely locations of sales to centres of experiences, in which people spend time and interact with their environment. As a result, consumers establish emotional ties with the

organization, which creates an impression upon them. Such places do not only increase satisfaction among consumers, but they also create conditions for customers to revisit the places frequently and spend more money on products. The purpose of this study is to identify the effect of sensory marketing on the behavior of customers, find out how the multi-sensory approach affects customer satisfaction and loyalty, and determine ways through which sensory marketing can be combined with sustainability practices within organizations, hence achieving commercial and social success.

2. OBJECTIVES OF THE STUDY

1. To study how different sensory elements such as ambience, music, aroma, taste, and comfort affect the buying behaviour of customers at Third Wave Coffee.

2. To examine the level of awareness of customers regarding sensory marketing practices used by cafés.

3. To identify which sensory element has the most significant influence on customer experience and buying behaviour.

4. To analyse the effect of sensory elements on customers' purchase decisions and the time they spend at the café.

2.1 Hypotheses

$H0_1$: Sensory elements do not have a significant effect on the buying behaviour of customers.

$H1_1$: Sensory elements have a significant effect on the buying behaviour of customers.

$H0_2$: Customers are not aware of sensory marketing practices used by cafés.

$H1_2$: Customers are aware of sensory marketing practices used by cafés.

$H0_3$: No particular sensory element has a significant influence on customer experience and buying behaviour.

$H1_3$: Certain sensory elements have a significant influence on customer experience and buying behaviour.

$H0_4$: Sensory elements do not influence customers' purchase decisions and time spent at the café.

$H1_4$: Sensory elements influence customers' purchase decisions and time spent at the café.

3. RESEARCH METHODOLOGY

This study is a descriptive and analytical research that aims to understand the impact of sensory marketing on consumer buying behaviour. The research relies on secondary data collected from a variety of sources, including research articles, academic journals, books, and credible online publications. In addition, observations from cafés, restaurants, and retail stores were also considered to gain practical insights into how sensory elements are applied in real-world business settings. By combining theoretical perspectives with observational insights, this study primarily focuses on understanding how sight, sound, smell, taste, and touch influence consumer perception, satisfaction, and purchase behaviour. The approach enables a comprehensive understanding of the role of sensory marketing in shaping consumer experiences, preferences, and loyalty, while linking these observations with established theoretical frameworks and models.

4. REVIEW ON SENSORY MARKETING

However, several recent empirical studies that have been carried out since 2019 demonstrate that sensory marketing is now a popular technique used by companies to influence consumers' decisions. According to Lwin et al., sensory stimuli like sounds, odours, and visual designs are not only created for establishing physical environments, but they are also able to evoke emotions in consumers. In other words, emotions function as mediators between the environmental cues and purchase behavior. Therefore, consumers would be motivated to purchase products when they feel comfortable within the store environment. Based on these insights, Kumar and Kumar (2020) noted that simple sensory stimuli, including background music, pleasant odours, and a well-organized store layout, could positively affect consumers' perceptions. They are responsible for improving

the overall shopping experience, increasing stay duration, and motivating people to buy goods. Additionally, Krishna (2021) pointed out that sensory stimuli operate on a subconscious level. This is evident because the use of sensory marketing affects decision-making at an unconscious level. Additionally, according to Spence (2021), the power of integrating all senses in marketing was critical in enhancing the effectiveness of marketing efforts. By involving sight, sound, smell, taste, and touch senses, customers get involved completely, which leads to greater satisfaction and easy memory formation. According to more recent studies, Budiarti et al. (2024) established that the process of multi-sense engagement facilitates effective memory retention and development of emotional attachment to the brand. These aspects were vital in ensuring continued patronage of the brand. Further in the same year, Richadinata et al. (2024) confirmed that sensory marketing is highly applicable in service-based brands such as cafes and restaurants since the experience aspect of the brand is key. Based on their results, sensory cues contribute to the creation of an enjoyable environment and thus the development of closer and more rewarding relations with customers. In addition, Zha et al. (2024) have concluded that multiple sensory experiences are positively related to customers' satisfaction and emotional attachment to a company. Moreover, this type of marketing approach helps in developing lasting connections between companies and their customers. Another study conducted by Yuniar and Nirawati (2025) confirmed the importance of environmental factors in boosting customer participation and enhancing their staying in a particular retail space. Thus, through the creation of a more engaging environment, the probability of making a purchase becomes higher. Finally, the research conducted by Kheireddine (2025) emphasized that when it comes to the sphere of food business and restaurants, sensory factors such as the taste of foods and the aroma become the key determinants of customers' loyalty and satisfaction. As evidenced from their findings, sensory stimuli play a critical role in the formation of a pleasant environment, which is essential for building closer relationships with customers. Besides, Zha et al. (2024) argued that there exists a positive link between multiple sensory stimulation and customer satisfaction and affective connection with the organization. Furthermore, this form of marketing strategy aids in establishing long-term relationships between organizations and their clients. In another study carried out by Yuniar and Nirawati (2025), it was established that environmental aspects play a crucial role in improving customer engagement and prolonging the time they spend in the retail outlet. Therefore, by designing a more appealing environment, the likelihood of making a purchase increases. Lastly, according to the study by Kheireddine (2025), when dealing with the sector of the food industry and restaurants, sensory stimuli such as the taste of foods and aromas determine the level of customer satisfaction and loyalty.

5. CONCEPTUAL FRAMEWORK

5.1 Stimulus–Organism–Response (SOR) Model

The SOR approach was proposed by Mehrabian & Russell (1974) to account for the effect that the surrounding environment has on a consumer's mental processes, feelings, and behaviour. Within the framework of the SOR approach, the consumer's behaviour emerges following a chain of processes that starts from stimulation. Stimulation encompasses various sensory features such as aesthetics, sound, aroma, flavour, and touch. These stimuli affect the organism, that is, the state of mind of the consumer, which can be both psychological and cognitive. Psychological stimuli consist of emotions of happiness, comfort, or excitation, while cognitive stimuli refer to perception and evaluation. As a result, the consumer responds through behaviour, such as purchasing the product, spending more time shopping in stores, coming back, and recommending it to other people. According to recent scientific findings, the SOR process model has been enhanced to indicate that multi-sensory environments substantially contribute to improving the Organism process, causing greater engagement and evaluations. For instance, if there is a pleasant light environment and soothing music as well as pleasant odours in the air, customers can become more relaxed,

satisfied, and emotionally attached, thus making them behave more positively, such as spend money and stay for a longer time. Furthermore, if there are several sensations, their effect on emotions and actions can be even greater than the sum total of their effects individually due to synergy.

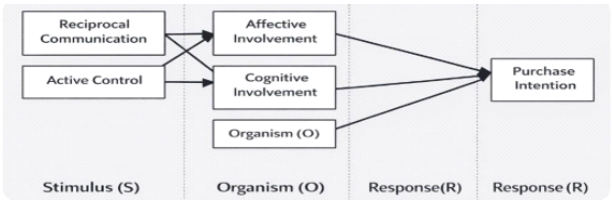

Figure1: A Conceptual Framework of the SOR Model.

Example:

A café with warm lighting, soothing music, coffee aroma, and comfortable seating creates a positive emotional state. Customers stay longer, purchase more, and return frequently.

Table 1: SOR in Sensory Marketing

Stimulus	**Emotional Response (Organism)**	**Behavioural Outcome (Response)**
Warm lighting & décor	Relaxation, comfort	Longer stay, higher spending
Soft music	Calm, happy	Repeat visits, recommendations
Coffee aroma	Pleasure, appetite	Impulse purchases
Food taste & presentation	Satisfaction, delight	Repeat purchase
Comfortable seating	Relaxation, value	Longer dwell time

5.2 Experiential Marketing Theory

According to Schmitt (1999), experiential marketing is about creating memorable experiences for today's consumers who are more interested in experience creation rather than product and service delivery. This strategy involves creating emotional and sensory responses rather than focusing on features, price, and convenience as it does traditional marketing. The five forms of experience identified by Schmitt (Feel, Sense, Act, Think, and Relate) are very relevant and create consumer perceptions and responses regarding a certain product. In coffee shops, restaurants, and retail environments, lighting, music, scent, and environment are all important because of their impact on consumer emotions and thoughts. Such experiences can positively impact consumer behaviour including staying longer andreturning to the same place again. Thus, through experiential marketing, one learns that businesses create more than a product when creating an experience for customers; they establish emotional bonds that ensure that customers become loyal and engaged in the long run.



Figure 2: Four factors for experiential marketing process

Marketing by utilizing all five senses makes up sensory marketing. In terms of visual marketing, this includes the use of good store layouts, adequate lighting, and pleasing display products to catch consumers' eyes. As for auditory marketing, this entails using background music or any other sounds to influence moods and feelings, and for olfactory marketing, this refers to using pleasant odors that induce consumers into having pleasant sensations or arousing their appetites. Gustatory marketing has something to do with taste and may be seen through providing samples or through the presentation of food and drink products. For instance, a luxury retail shop that integrates soft lighting, calming music, and pleasant aromas provides a luxurious sensory experience that will make customers loyal to the brand. Example A luxury retail shop integrating soft lighting, calming music, and scented candles provides a luxurious sensory experience that will foster customer loyalty to the brand.

5.3 Affective Response Theory

The affective response theory describes how the emotions of consumers are responsible for

affecting their purchase behaviour. As per this theory, the emotions of consumers depend on the various stimuli from sensory components such as music, fragrance, lighting, and taste. These emotions affect their attitudes about the product or brand being considered for purchase. For instance, if consumers enter a coffee shop with relaxing music and a nice fragrance, they may feel happy and relaxed. This will enhance the probability of their prolonged stay at the location and increase their chances of purchasing products.

5.4 Hedonic Consumption Theory

The Hedonic Consumption Theory emphasizes the notion of people engaging in the process of purchasing goods or services not only because of practical purposes but also due to their hedonistic characteristics – the ability to enjoy and derive pleasure from the consumption. According to this theory, people do not buy things using reason only, but they also use such factors as enjoyment, fantasy, and fun. With regard to sensory marketing, the above-mentioned theory helps explain the fact that clients prefer such environments where they can get pleasant sensory experience, for example, an aesthetically pleasing environment in a cafe with pleasant sounds and smells of good food.

6. ANALYSIS AND DISCUSSION

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.913	.915	15

.913 > .7 = Questionnaire is highly reliable and internally consistent.

Table 6.1 Reliability Statistics of Questionnaire (Cronbach's Alpha)

Interpretation

A Cronbach's alpha coefficient of 0.913 (greater than 0.7) indicates a reliable result because the test questions are consistent in measuring the same variable. A standardized coefficient of 0.915 provides further proof of the reliability of the results.

Analysis based on Objective 1:

The study examines how different sensory elements such as ambience, music, aroma, taste, and comfort influence the buying behaviour of customers at Third Wave Coffee.

COEFFICIENT TABLE

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t value	Sig.
		B	Std. Error	Beta		
1	(Constant)	.131	.257		.508	.612
	sight	.258	.086	.240	2.994	.003
	sound	.230	.073	.223	3.157	.002
	smell	.098	.069	.106	1.419	.158
	taste	.247	.073	.268	3.377	.001
	touch	.079	.084	.085	.937	.350

Table 6.2 Coefficient Table

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.751[a]	.564	.549	.54896	.564	37.717	5	146	.000
a. Predictors: (Constant), touch, sound, smell, taste, sight									

Table 6.3 Regression Analysis Model

Sensory factor	B (unstd.)	Std. error	Beta (β)	t value	p value	Significance	Relative strength
Taste	0.247	0.073	0.268	3.377	0.001	Significant	Strongest
Sight	0.258	0.086	0.24	2.994	0.003	Significant	2nd
Sound	0.23	0.073	0.223	3.157	0.002	Significant	3rd
Smell	0.098	0.069	0.106	1.419	0.158	Not significant	4th
Touch	0.079	0.084	0.085	0.937	0.35	Not significant	Weakest

Table 6.4 Coefficient table with significance

Interpretation

The results from the regression analysis prove that taste, sight, and sound positively affect the behaviour of the consumer when it comes to buying ($p<0.05$) while taste is more important than both sight and sound, as far as the buying behavior at Third Wave Coffee is concerned. However, smell and touch do not show any significance since their p-values are higher than 0.05. The R-value proves a good relationship of R=0.751 while the percentage of variation explains 56.4%, thus making the significance level as 0.000.

Analysis Based on Objective 2

The study examines the level of awareness of customers regarding sensory marketing practices used by cafés.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
@18.Iamawarethatcafésusesensorye lementstoinfluencecustomers	152	3.41	1.412	0.114

One-Sample Test						
	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
@18.Iamawaret hatcafésusesens oryelementstoi nfluencecustom ers	3.62	151	0	0.414	0.19	0.64

Table 6.5 One Sample T-test

Interpretation

The findings from the one sample t-test show that the mean score (3.41) exceeds the neutral point score of 3, which indicates that most customers are aware that sensory marketing is employed by cafes. This can be seen from the fact that the p-value (0.000) is below 0.05.

Analysis based on Objective 3

The study identifies which sensory element has the most significant influence on customer experience.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
sight	152	3.7851	.76090	.06172
sound	152	3.7171	.79040	.06411
taste	152	3.7368	.88950	.07215

Table 6.7 One Sample Statistics

Interpretation

The analysis of the one-sample t-test reveals that the average value is greater than the test value, which

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	0.341	0.116	0.110	0.747	0.116	19.718	1	150	.000

Table 6.6 Model Summary of Regression Analysis

One-Sample Test

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
sight	12.721	151	.000	.78509	.6631	.9070
sound	11.186	151	.000	.71711	.5904	.8438
taste	10.213	151	.000	.73684	.5943	.8794

proves that most participants support the given statement. In turn, as the p-value is lower than 0.05, the test is statistically significant and the answers are valid since the outcome did not occur by coincidence.

Analysis based on Objective 4

The study analyses the effect of sensory elements on customers' purchase decisions

and the time they spend at the café.

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.016	1	11.016	19.718	.000[b]
	Residual	83.800	150	.559		
	Total	94.816	151			
a.DependentVariable:@21.OverallIamsatisfiedwithmyexperienceatThirdWaveCoffee						
b. Predictors: (Constant), experience						

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.164	.339		6.385	.000
	experience	.394	.089	.341	4.440	.000
a.DependentVariable:@21.OverallIamsatisfiedwithmyexperienceatThirdWaveCoffee						

Table 6.8 Combined Regression Results (ANOVA and Coefficients)

☐Observed Data Points

☐Regression Line: $\hat{Y} = 2.164 + 0.394x$

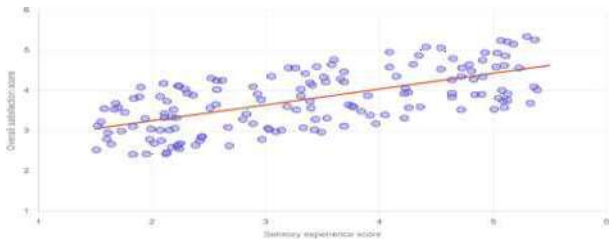

Figure 2: Scatter Plot Showing Relationship Between Sensory Experience and Customer Satisfaction

Interpretation

The regression analysis result reveals that customer experience positively and significantly influences satisfaction level in Third Wave Coffee. The value of R is 0.341, which means there is a moderate relationship between the two variables. On the other hand, R Square (0.116) means that 11.6% of satisfaction among customers is influenced by their experiences. This is because the significance value obtained is below 0.05 (0.000), meaning that the model is significant. Additionally, the value of Beta is positive, and thus the hypothesis was accepted.

7. FINDINGS

According to the research findings, sensory marketing has a great impact on consumer purchasing behaviour in Third Wave Coffee. All of the different senses have been analysed, and it turned out that taste is the factor that affects consumers' buying decisions the most. Ambiance and music come second, while smell and touch do not play such a big role. Consumers are aware of sensory marketing techniques and know how ambience, music, aromas, and visual presentations impact their purchasing behaviours. In addition, sensory experiences make customers more satisfied, stay longer, decide to buy things from the menu, and want to return to this place or recommend the establishment to others. At the same time, the results showed that other factors such as prices, product diversity, and quality of services are important as well.

8. SUGGESTIONS

With regards to the successful use of sensory marketing, there are several recommendations that could be made considering the results obtained during this research. Firstly, the firm should take into consideration the improvement of the environment, lighting, and interior design. This is crucial because aesthetically attractive locations make good first impressions, influence the mood of individuals positively, and make clients spend more time at such places. Second, one should consider the possibility of using nice odours and sounds like music as means of engaging customers emotionally and regulating their moods. Such an approach will make the environment more appealing and will result in increased time spent at such locations and higher customer satisfaction. Last but not least, it is vital for businesses to make sure that their products look appealing and taste well. In this case, this recommendation applies mostly to cafés and restaurants. Additionally, another suggestion could be connected to making the company a

more environmentally-friendly enterprise, using green products. Nowadays, many consumers choose sustainable firms, so implementing sustainability-related strategies can attract new customers and earn their loyalty.

9. CONCLUSION

Taste, ambiance, music, smell, and comfort are key sensory dimensions that have significant impacts on customer behaviour at Third Wave Coffee. Taste is the key sensory dimension, while ambiance and music come second, since these three have major effects on consumer experience, satisfaction, and behaviour. Consumers also understand sensory marketing tactics employed by coffee shops and know how they impact their behaviours. Sensory marketing strategies that result in a good experience encourage consumers to spend more time in the café, make purchases, revisit, and even recommend the establishment to other individuals. Nonetheless, other aspects like price, service quality, and product variety can also affect consumer behaviours.

Practical Implications and future research

According to the research, companies need to create a harmonious experience for customers by properly coordinating all sensory aspects like visual, audio, olfactory, gustatory, and tactile cues. Sensory marketing techniques can be used to create differentiation among brands in intensely competitive environments. By adopting these techniques alongside eco-friendly initiatives, one can improve the brand image and reputation. Areas for future research can include exploring the potential of digital sensory marketing using advanced technology like virtual and augmented realities. The influence of sensory marketing on consumers from diverse cultures and how they perceive the sensory marketing approach needs to be examined. It would also be interesting to know about the long-term effects of sensory marketing on customer loyalty and sustainability.

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CA-Led Sustainability Accounting and Its Implications for Client Cost Efficiency and Profit Margins

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ABSTRACT

Sustainability is no longer just an ethical approach but a financial necessity in today's business environment. ESG (Environmental, Social, Governance) issues are gaining relevance for an organisation's competitive advantage. Sustainability accounting is required to quantify and report social and environmental costs that are normally not reflected in traditional financial statements. Chartered Accountants (CAs) are being hired by organisations to undertake sustainability accounting practices. This paper focuses on the impact of sustainability accounting led by CAs on client firms' profitability and efficiency. Out of the 90 studies screened initially from multiple databases, 15 articles have been selected through a systematic review method using PRISMA guidelines for further conceptual analysis. Additionally, primary data from 150 accounting professionals and secondary data from 10 major Indian companies (2021–2025) have been analysed using ANOVA, Pearson correlation, and multiple regression. The findings reveal that sustainability accounting driven by the CA leads to greater transparency, reduced operational wastage, and increased regulatory compliance. Companies classified as HIGH sustainability performers recorded a Net Profit Margin of 14.85%, compared to 6.16% for LOW performers — a differential of 141%. The findings contribute to the existing knowledge about sustainability as a financial tool by proposing a theoretical framework linking CA-driven sustainability accounting, environmental cost identification, cost effectiveness, and profitability margins.

Keywords: *Sustainability Accounting, Chartered Accountants, Cost Efficiency, Profit Margins, ESG Reporting, Environmental Cost Management*

Introduction

Sustainability accounting has emerged as a powerful tool to assist firms in identifying inefficiencies in the use of resources and enhancing cost efficiency. The practice of sustainability accounting helps overcome the limitations of conventional accounting by incorporating costs such as energy consumption, environmental compliance, waste management, and environmental protection. Chartered accountants (CAs) play a significant role in facilitating sustainability accounting by setting up monitoring systems and preparing sustainability reports. This paper investigates the implications of sustainable accounting guided by CAs for financial performance. The objectives include: (i) understanding the concept and significance of sustainable accounting led by CAs; (ii) examining the contribution of CAs in implementing sustainable accounting practices; (iii) identifying the implications of sustainable accounting for organisational cost efficiency; (iv) assessing the relationship between cost efficiency and profit margin; and (v) developing a theoretical model connecting sustainable accounting led by CAs, cost efficiency, and profit margins.

Review of Literature

Sustainability Accounting and Financial Performance

Sustainability accounting has gained more popularity in recent years as businesses attempt to incorporate social and environmental aspects into decision-making processes. According to Jucá (2024), research has shown that sustainability practices encourage businesses to develop efficient ways of production, minimise waste, and optimise energy consumption, thereby improving profitability. Green accounting techniques, such as environmental disclosure and environmental performance reporting, have a positive impact on business performance by enhancing accountability and transparency, as found in research carried out in the mining sector (Jodi Setiawan, 2024). According to Imalatul Husna (2024), businesses that adopt environmental accounting systems experience positive changes in their performance due to efficient use of resources and environmental risk management.

Green Accounting and Cost Efficiency

Green accounting aims at identifying, quantifying, and disclosing the environmental costs incurred by companies. According to Simorangkir (2024), green accounting practices can improve financial performance by encouraging companies to implement green production practices. Meily Surianti (2024) found that businesses using environmental accounting systems can improve operational efficiency and reduce waste. As Tjandrakirana (2024) found through a systematic evaluation of literature, environmental accounting practices have a positive effect on organisational profitability through the identification of hidden environmental costs and the maximisation of resource usage.

Sustainability Reporting and Corporate Transparency

Sustainability reporting has emerged as an essential means for businesses to keep stakeholders informed of their ESG performance. Studies on green accounting methods and carbon footprint reporting have found that firms disclosing sustainability performance tend to enjoy increased trust and value from investors (Sumayyah, 2025). According to Dita Yuninalita Dian Parastuti (2024), sustainability reporting has a positive effect on a firm's financial performance through improvement of reputation and attraction of socially responsible investors. The Global Reporting Initiative (2022) sustainability reporting guidelines provide critical guidance on reporting environmental, social, and governance performance, encouraging the practice of sustainable business practices.

Methodology

This research employs a mixed-methods quantitative approach. For the conceptual analysis, a systematic literature review using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach was applied, spanning 2020–2025 across Web of Science, Scopus, and Google Scholar. From an initial pool of 90 articles, 15 were selected based on inclusion criteria of CA involvement, cost-effectiveness, profitability, and sustainability accounting.

For primary data, a structured survey was conducted with 150 accounting professionals (68 Chartered Accountants and 82 general Accountants) across manufacturing, services, and trading sectors in India. For secondary data, annual reports, sustainability reports, and financial statements of 10 major Indian companies — Reliance Industries, TCS, Infosys, HDFC Bank, ICICI Bank, Hindustan Unilever, ITC Ltd., SBI, Bharti Airtel, and Wipro — were analysed for five fiscal years (2021–2025), yielding 50 firm-year observations. Statistical tools employed include One-Way ANOVA, Tukey HSD post-hoc tests, Pearson correlation, simple linear regression, and multiple regression analysis using SPSS v.26.

Results and Discussion

5.1 Conceptual Framework

In the study, CA-led sustainability accounting is the independent variable that affects the identification of environmental costs (path A) and also affects cost efficiency as a mediator variable (path B). The profit margin is affected by cost effectiveness (path C), and there is a direct influence between profit margin and CA-led sustainability accounting (path D). Through environmental management accounting, monitoring of resource usage, generating sustainability reports, and ensuring ESG compliance, chartered accountants assist in ensuring sustainable accounting practices. Such initiatives enable companies to identify areas of operational inefficiency such as excessive usage of energy, wastage of raw materials, and non-compliance costs.

5.2 Demographic Analysis of Respondents

The survey captured 150 accounting professionals across industries. The demographic profile is as follows:

Table 1: Demographic Overview of Respondents

Dimension	Dominant Profile	Count / %
Profession	Chartered Accountants (CAs)	68 (45.3%)
Profession	General Accountants	82 (54.7%)
Experience	Below 3 Years	67 (44.7%)
Experience	3–7 Years	76 (50.7%)
Experience	8–15 Years	7 (4.7%)
Industry	Manufacturing	65 (43.3%)
Industry	Services	61 (40.7%)
Industry	Trading	19 (12.7%)
Technology Adoption	Low	51 (34.0%)
Technology Adoption	Moderate	76 (50.7%)
Technology Adoption	High	23 (15.3%)

5.3 Objective 1: Cost Efficiency by Level of Sustainability Adoption (Primary Data)

A one-way ANOVA was conducted to test whether mean cost efficiency scores differed significantly across three levels of sustainability accounting adoption (Low, Medium, High) among 150 surveyed firms.

Table 2: One-Way ANOVA Results (Cost Efficiency by Adoption Level)

Source	Sum of Squares	df	Mean Square	F Statistic	Sig. (p-value)
Between Groups	0.703	2	0.351	2.449	0.090
Within Groups	21.093	147	0.143		
Total	21.795	149			

Source: SPSS v.26

The F-statistic of 2.449 with p = .090 indicates that the result does not reach conventional significance at α = .05; hence, the null hypothesis H_{01} is retained. However, a directional trend was observed: the High adoption group recorded a mean cost efficiency score of 3.44, compared to 3.28 (Medium) and 3.23 (Low). Effect size analysis yielded eta-squared (η^2) = .032, indicating that approximately 3.2% of the variance in cost efficiency is attributable to adoption level — a small but theoretically meaningful effect. Post-hoc Tukey HSD analysis revealed that the Low vs. High comparison approached significance (p = .076, 95% CI = [−0.434, +0.017]). The underpowered high-adoption group (n = 23 out of 150) likely contributed to the non-significant result, making Type II error a real possibility.

5.4 Objective 2: Impact on Profit Margins (Secondary Data)

Trend analysis and comparative segmentation of secondary data from 10 leading Indian organisations for 2021–2025 yielded the following results regarding net profit margin by sustainability level:

Table 3: Net Profit Margin by Sustainability Level (2021–2025)

Sustainability Level	Average Net Profit Margin (%)	Variance from Grand Average
HIGH (Score 8–10)	14.85%	+28.0%
MEDIUM (Score 5–7)	8.17%	−29.6%
LOW (Score 0–4)	6.16%	−46.9%
Grand Total	11.60%	Baseline

Source: Annual Reports and Sustainability Reports of sampled firms (2021–2025)

The difference of 8.39 percentage points between HIGH and LOW sustainability performers is economically significant. For an organisation earning ₹10,000 crore in revenue, this translates to approximately ₹839 crore in additional annual profits. The year-on-year trend also shows that increases in sustainability scores (e.g., 2022: Score = 7.0, NPM = 12.645%) were accompanied by higher profit margins, while score declines (e.g., 2024: Score = 6.5, NPM = 10.676%) corresponded with lower margins. Based on the weight of evidence, the null hypothesis H_{02} is rejected, and the alternative hypothesis — that sustainability accounting processes significantly and positively influence profit margins — is accepted.

5.5 Objective 3: CA Involvement and Financial Decision-Making Quality

Pearson correlation and simple linear regression were applied to examine the relationship between CA Involvement Score and Cost Efficiency Score. The correlation coefficient r = .053 (p = .518) indicates a negligibly weak and statistically insignificant relationship. The regression model (R^2 = .003, Adjusted R^2 = −.004, F = .420, p = .518) confirms that CA involvement, as measured, does not significantly predict cost efficiency. The null hypothesis H_{03} is retained. However, this finding does not imply that CA involvement is irrelevant; rather, the relationship may be indirect, mediated by improved reporting quality, regulatory adherence, and stakeholder communication — aspects not directly captured by the current measurement construct.

5.6 Objective 4: Sustainability Accounting and Overall Financial Performance

Pearson correlation analysis on 50 firm-year observations revealed exceptionally strong relationships between sustainability scores and financial performance indicators:

Table 4: Pearson Correlation Matrix (Sustainability Score vs Financial Performance)

Variable Pair	Correlation (r)	Strength	Interpretation
Sustainability Score & Net Profit Margin	0.9414	Very Strong	94% of margin variation explained
Sustainability Score & ROA	0.8934	Strong	89% of ROA variation explained
Sustainability Score & ROE	0.9437	Very Strong	94% of ROE variation explained
Net Profit Margin & ROA	0.8632	Strong	Margin improvements cascade to asset returns

Source: SPSS v.26 | Data period: 2021–2025

The multiple regression model yielded $R^2 = 0.8938$, Adjusted $R^2 = 0.8869$, $F = 129.125$, and $p < .001$. Each additional unit in sustainability score is associated with a 1.78 percentage point improvement in Net Profit Margin ($B = 1.7815$, $t = 19.33$, $p < .001$). Comparative level analysis further confirms the trend: HIGH sustainability firms outperformed LOW sustainability firms across all metrics — NPM (14.85% vs 6.16%), ROE (17.12% vs 6.80%), and ROA (9.18% vs 2.98%). The null hypothesis H_{04} is unequivocally rejected.

5.7 Objective 5: Cross-Industry Comparison

A one-way ANOVA comparing cost efficiency across four industry sectors (Manufacturing, Services, Trading, Multiple Industries) yielded $F = 0.110$ ($p = .954$, $\eta^2 = .002$). All pairwise Tukey HSD comparisons produced p-values ranging from 0.944 to 1.000. Mean cost efficiency scores across industries ranged from 3.24 to 3.30 — a difference of less than 0.06 units. The null hypothesis H_{05} is retained. This finding has an important practical implication: the financial benefits of CA-led sustainability accounting are industry-agnostic, and organisations across manufacturing, services, trading, and other sectors can expect similar cost efficiency improvements.

5.8 Estimated Value Creation from Sustainability Accounting

Assuming a representative business entity with ₹10,000 crore in revenue, ₹5,000 crore in assets and ₹2,000 crore in equity, transitioning from LOW to HIGH sustainability accounting would yield the following incremental financial impacts:

Table 5: Estimated Value Creation Impacts by Sustainability Level

Financial Metric	LOW Performance	HIGH Performance	Incremental Value (₹ Crore)
Net Profit Margin	6.16%	14.55%	₹839
Return on Assets	2.98%	9.18%	₹310
Return on Equity	6.80%	17.12%	₹216

Source: Derived from secondary data analysis (2021–2025)

5.9 Theoretical Underpinnings

The model relies on three theories. According to stakeholder theory, businesses must factor in investor, consumer, employee, and regulatory demands, which are addressed through sustainability accounting. Legitimacy theory suggests that businesses engage in sustainability accounting to maintain social legitimacy and improve reputation. Resource-Based View (RBV) theory states that businesses derive competitive advantage from internal capabilities, such as sustainability accounting skills, by managing costs effectively.

Conclusion

This paper underscores the significance of sustainability accounting under the leadership of chartered accountants in enhancing the bottom line and increasing cost efficiency in organisations. The analysis of primary data from 150 professionals and secondary data from 10 major Indian companies over five years (2021–2025) yields converging evidence. While cost efficiency differences across adoption levels fell short of statistical significance at $\alpha = .05$ (H_{01} retained, $p = .090$), a meaningful directional trend exists favouring higher adoption. In contrast, secondary data analysis conclusively demonstrated that sustainability accounting has a significant positive effect on both profit margins (H_{02} rejected; HIGH NPM = 14.85% vs LOW NPM = 6.16%) and overall financial performance (H_{04} rejected; $R^2 = 0.89$, $p < .001$). Industry-based analysis confirmed that sustainability benefits are sector-agnostic (H_{05} retained, $p = .954$), making the findings broadly applicable across the Indian corporate landscape.

The proposed theoretical model linking CA-led sustainability accounting, environmental cost identification, cost efficiency, and profitability can act as a foundation for future empirical studies. Future research must rely on empirical methods for validating the proposed model, examining differences between industries, conducting cross-country comparisons, and exploring the mediating role of digital technologies in sustainable accounting.

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Capital Structure and Financial Performance: Evidence from a Small Saree Textile Firms in India

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ABSTRACT

This paper examines the impact of capital structure decisions on the financial performance of a small saree textile company operating in India. Specifically, this study aims to examine the influence of the debt-equity ratio on profitability metrics such as ROA, ROE, and NPM, while also looking at customer perception and its contribution to the performance of sales. The dataset includes financial ratios for quarters in the period from 2023 to 2025, along with survey data from 103 clients. Financial ratio analysis, Pearson correlation, and multiple regressions are utilized in the analysis, with firm size and liquidity used as control variables. In summary, there is a statistically significant negative association between the debt-equity ratio and the profitability measures examined in this study. The results of multiple regression suggest that the selected capital structure ratio is highly predictive of profit metrics. In addition, the preliminary analysis of primary data reveals that client satisfaction leads to better sales outcomes. These findings contribute to the scarce research on small, privately-held textile companies in India by using internal financial data and high-frequency information. However, the conclusions drawn are based on a limited sample of observations.

Keywords: *Capital structure, Debt-equity ratio, Return on assets, Financial performance, Saree textile, Small firms, India.*

Introduction

In fact, it is critical for organizations of any size to adopt some means by which they can finance their business transactions and undertakings. The decision-making process through which the aforementioned is achieved, often referred to as the capital structure decision process, influences the cost of capital, risk, and profitability of the organization in question. While the topic of optimal capital structure has been debated for many years now, empirical research into the matter focuses primarily on large organizations with tradable securities in the capital markets. The saree textile industry in India represents a good example for the purpose of studying the issue. Indeed, the Indian saree textile industry consists of numerous small businesses, involved in manufacturing and selling products, that depend on their own stock of capital and debt to generate working capital and purchase inventories based on changes in demand within the market.

Although there is less research done on the relationship between capital structure and firm performance in emerging countries, especially with regard to single-shop saree businesses operating in India, the current research will fill this existing knowledge gap. This study seeks to achieve this by collecting financial data of Sarees Den, a saree retail

company founded in 2023 in Bangalore, for 12 periods of time and also surveying 103 of its customers. Apart from looking into the effect of capital structure on firm performance, this study will seek to determine the effect of customer attitude on sales performance.

MATERIALS AND METHODS

The study will make use of both a descriptive and an analytic research design. The secondary data used are quarterly financial statements for Sarees Den from Q1 2023 to Q4 2025 (total of twelve data points). Out of these, five ratios were derived for each quarter – Debt-Equity Ratio (D/E), Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin (NPM), and Current Ratio. Firm Size is represented using ln (TA) in order to avoid skewness. Overall, these variables are used to measure aspects related to capital structure, profitability, and liquidity.

Primary data will be collected through the means of a structured questionnaire that will be conducted through Google forms. It will involve the following topics: sources of brand awareness, purchase frequency, perceived quality, price, delivery, and intention to repurchase. Convenience sampling method will be utilized to obtain respondents. Data analysis involved Microsoft Excel for the computation of ratios and graphing of results and the use of Jamovi for statistical analysis. The data analysis process followed a three-step procedure. First, descriptive statistics were generated for all financial indicators for the purpose of describing the measures of central tendency and dispersion. Secondly, Pearson correlation coefficients were calculated for D/E ratio versus all profitability indicators as well as for all control variables versus all profitability indicators. Thirdly, three multiple regressions were conducted using ROA, ROE, and NPM as the dependent variables and D/E ratio, Total Asset, and Current Ratio as the independent variables. Frequency distributions and simple percentage analysis were used for the primary survey data.

HYPOTHESES

$H0_1$: The Debt–Equity Ratio has no significant effect on Return on Assets (ROA).

$H1_1$: The Debt–Equity Ratio has a significant effect on Return on Assets (ROA).

$H0_2$: The Debt–Equity Ratio has no significant effect on Return on Equity (ROE).

$H1_2$: The Debt–Equity Ratio has a significant effect on Return on Equity (ROE).

$H0_3$: The Debt–Equity Ratio has no significant effect on Net Profit Margin (NPM).

$H1_3$: The Debt–Equity Ratio has a significant effect on Net Profit Margin (NPM).

$H0_3$: Customer perception has no significant impact on sales performance.

$H1_4$: Customer perception has a significant impact on sales performance.

REVIEW OF LITERATURE

The connection between capital structure and financial performance has been studied a lot using the Modigliani and Miller framework, Trade-Off Theory, and Pecking Order Theory. These theories look at how companies decide how to finance themselves based on tax benefits, financial risk, and their preference for using their own money. Nonetheless, empirical results continue to be inconsistent across nations and industries. Fundamental studies, including Modigliani and Miller (1963), Myers (1984), Myers and Majluf (1984), and Titman and Wessels (1988), generally indicate that more profitable firms utilize less debt, thereby corroborating the Pecking Order Theory. Salim and Yadav (2012) and Le and Phan (2017) assert that in emerging markets, capital structure markedly influences firm performance; however, this relationship is frequently non-linear, suggesting that moderate leverage can be advantageous, whereas excessive debt diminishes profitability. Recent studies provide additional validation of inconclusive outcomes. Bui et al. (2023) and Ahmed et al. (2024) identify a predominantly negative correlation between leverage and profitability, whereas Prekazi et al. (2023) emphasize that outcomes are contingent upon methodology and firm characteristics. Arhinful (2025) and Eke (2025) demonstrate that leverage significantly affects performance, although the effect differs based on firm size and economic conditions. In developed markets, Jaiswal et al. (2025) discern a non-linear relationship, indicating an optimal capital structure. In general, the literature shows that capital structure does affect financial performance, but the strength and direction of this effect differ from industry to industry, country to country, and firm to firm.

Research Gap

However, prior empirical studies predominantly examine large, publicly traded corporations utilizing panel data, with a scarcity of focus on small, privately held textile enterprises. Data at the firm level and on a quarterly basis is somewhat difficult to obtain. In this context, the current study aims to tackle the aforementioned research problem by examining an emerging saree textile enterprise.

CONCEPTUAL FRAMEWORK

The present study combines the Trade-off Theory and Pecking Order Theory for explaining how the financial decisions of a firm impact its financial performance. According to the theoretical assumptions, the capital structure acts as the independent variable and is represented through the debt-equity ratio. The financial performance is gauged through certain measures such as Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). An increase in the proportion of debt used in financing operations will raise the financial risk and cost of interest payments, resulting in poor profits. However, a reduction in debt usage can positively impact the financial performance of an organization through lower financial expenses and better returns. Capital structure is considered alongside other important factors like firm size and liquidity because of their possible effects on the financial results. In addition, customer satisfaction becomes another important non-financial determinant, given that customers' satisfaction and experience will positively influence their purchasing decisions and organizational performance.

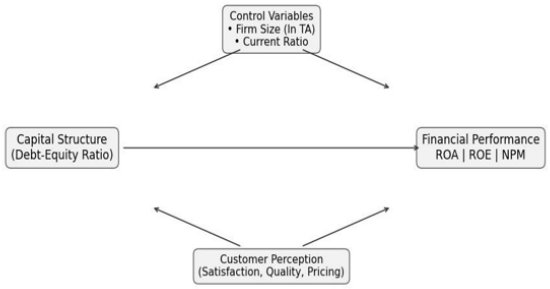

Figure 1: Conceptual Framework of the Study

RESULTS

Quarterly Financial Ratio Trends (2023-2025)

Table 1 below shows the quarterly financial ratios for Sarees Den during the three-year analysis period. The Debt/Equity ratio fell from a high of 0.833 during Q3 and Q4 in 2024 to zero in all four quarters of 2025, showing a steady movement towards financing solely through equity. In addition, the Return on Assets rose from 4.40% in Q1 in 2023 to a steady 24.65% in all four quarters of 2025. ROE was consistent with ROA, rising to 36.99% in Q1 of 2025 before dropping slightly to 25.27% in Q4 due to increased equity capital. The Net Profit Margin settled at 21.00% in all four quarters in 2025 after fluctuating between 11.25% and 19.35% in 2023.

Quarter	D/E Ratio	ROA	ROE	NPM	Current Ratio
Q1 2023	0.484	4.40%	6.53%	11.25%	2.500
Q2 2023	0.652	8.29%	13.70%	14.32%	2.462
Q3 2023	0.519	10.84%	16.47%	16.47%	2.429
Q4 2023	0.400	13.82%	19.35%	19.35%	2.400
Q1 2024	0.400	7.50%	10.50%	14.58%	1.231
Q2 2024	0.333	9.00%	12.00%	16.36%	1.491
Q3 2024	0.833	7.81%	14.31%	16.51%	1.802
Q4 2024	0.833	9.58%	17.56%	17.56%	2.206
Q1 2025	0.000	24.65%	36.99%	21.00%	2.667
Q2 2025	0.000	24.65%	32.04%	21.00%	2.667
Q3 2025	0.000	24.65%	28.25%	21.00%	2.667
Q4 2025	0.000	24.65%	25.27%	21.00%	2.667

Table 1: Quarterly Financial Ratios of Sarees Den (2023-2025)

Descriptive Statistics

Table 2 below provides information regarding central tendency and variability measures for important variables of the research study. Mean value of D/E ratio of 0.371 signifies medium level of leverage, whereas its range of 0.833 depicts significant variations among different quarters. ROA, ROE, and NPM values of 14.2%, 19.4%, and 17.5%, respectively, ensure profitability throughout the research period. Mean value of 2.266 for current ratio signifies appropriate liquidity position of firms. The small standard deviation value of ln(total assets) at 0.168 shows stable firm size during the research period.

Variable	Mean	Maximum	Minimum	Range	Std. Dev.
Debt-Equity Ratio	0.371	0.833	0.000	0.833	0.315
ROA	14.2%	24.65%	4.40%	20.25%	8.10%
ROE	19.4%	36.99%	6.53%	30.46%	8.90%
Net Profit Margin	17.5%	21.00%	11.25%	9.75%	3.20%
Current Ratio	2.266	2.667	1.231	1.436	0.493
ln(Total Assets)	13.047	13.218	12.766	0.452	0.168

Table 2: Descriptive Statistics of Selected Variables

Correlation Analysis

Pearson's correlation coefficients have been presented in Table 3. The D/E ratio shows a very high negative correlation with ROA (r = -0.854), a high negative correlation with ROE (r = -0.723), and a moderately-high negative correlation with NPM (r = -0.661). These results are in line with theoretical predictions based on the Trade-Off Theory; after reaching a certain moderate point, debt increases the cost of finance at a greater rate than the tax benefit. The negative correlation between the D/E ratio and the Current Ratio (r = -0.426) further confirms that

high leverage decreases liquidity. Larger and more liquid firms have higher positive correlations with ROA (r = 0.563 and 0.617 respectively).

Variable Pair	r	Interpretation
Debt-Equity & ROA	-0.854	Very strong negative
Debt-Equity & ROE	-0.723	Strong negative
Debt-Equity & Net Profit Margin	-0.661	Moderate-strong negative
Debt-Equity & Current Ratio	-0.426	Moderate negative
Debt-Equity & ln(Total Assets)	-0.229	Weak negative
ln(Total Assets) & ROA	0.563	Moderate positive
Current Ratio & ROA	0.617	Moderate positive

Table 3: Pearson Correlation Coefficients

Regression Analysis and Hypothesis Testing

The multiple regression analysis was done using Jamovi (Version X.X) at the 95% level of confidence (α=0.05). Table 4 provides the results of the regression analysis for the profitability models. From the results obtained, it can be observed that the Debt-Equity Ratio negatively and significantly impacts on the profitability of the company under study for the three different profitability models: ROA (β=-0.1829, t=-4.53, p=0.0006); ROE (β=-0.1647, t=-2.82, p=0.0222); and NPM (β=-0.0571, t=-2.34, p=0.0464). All three models have statistical significance with F-values of 20.84 (p<0.01), 7.78 (p<0.01), and 4.51 (p<0.05) for ROA, ROE, and NPM, respectively. The R-squared values of 0.887, 0.649, and 0.489 for ROA, ROE, and NPM, respectively, show that the models explain the variations well; in this case, the explanatory power of the models is very high, moderate, and moderate, respectively. The firm size negatively impacts financial performance significantly only in the ROA model.

According to the above findings, it is evident that the null hypothesis ($H0_1$, $H0_2$, and $H0_3$) is rejected, while the alternative hypothesis ($H1_1$, $H1_2$, and $H1_3$) is accepted, indicating the importance of capital structure on financial performance.

All statistical tests have been done at a 5% level of significance.

Variable	ROA Coeff.	p-value	ROE Coeff.	p-value	NPM Coeff.	p-value
Debt-Equity Ratio	-0.1829	0.0006**	-0.1647	0.0222*	-0.0571	0.0464*
ln(Total Assets)	0.1554	0.0463*	0.2116	0.1013	0.0868	0.1056
Current Ratio	0.0242	0.3464	0.0342	0.4384	-0.0006	0.9715
Adjusted R2	0.887		0.649		0.489	
F-statistic (p)	0.0004**		0.0093**		0.0392*	

Table 4: Regression Results - Impact of Capital Structure on Financial Performance (* p < 0.05; ** p < 0.01)

Primary Data

Of 103 valid responses collected, 49% of customers learned about the brand from their families or friends, while 38% learned about it via social media. This reinforces how important personal recommendations and online presence are for small textile companies. 76% of respondents consider the quality of products to be good or very good; 78% believe prices are affordable compared to similar competitors; 86% say they were satisfied with deliveries and packaging; and 80% stated their willingness to purchase again. Moreover, 82% agree that a positive experience results in increased sales for the company. All this evidence proves customer perception to be an important, but non-quantitative, factor influencing sales, which leads to H04 being disproved against H14.

DISCUSSION

Empirical evidence supports the hypothesis that the decision on capital structure has an immense bearing on the financial performance of Sarees Den. As evident, there is a steady decline of outside debt from a D/E of 0.833 in mid-2024 to 0.000 in 2025 while ROA, ROE, and NPM register remarkable improvement during the period. This trend aligns with Pecking Order Theory that states that firms will favor internal financing when maturing. It also aligns with predictions made by Trade-Off Theory since in cases where firms have extremely high leverage, the negative effects of financial distress exceed the tax shields.

The highly impressive Adjusted R^2 value (88.7%) in the ROA model indicates clearly that the most critical determinants of assets' productivity in this case include capital structure together with firm size. Weakness of the NPM model (Adjusted R^2 = 48.9%) implies that there are other factors apart from leverage, including price strategy and production strategy. The positive correlation between firm size and ROA may be explained by economies of scale theory even though this is a small firm.

LIMITATION

However, there are some limitations that should be taken into account when interpreting the results of this study. The first one concerns the small sample size. The analysis was conducted using a fairly small sample that consisted of only twelve observations, which might affect the accuracy of the results. The

second limitation is that the study only considered one saree textile business, and thus the results cannot be generalized for other companies and

industries. The third limitation relates to the fact that multiple regression used to analyze the data can lead to overfitting because of the small sample size. Moreover, no advanced econometric approach was applied in order to conduct the analysis and draw relevant conclusions.

CONCLUSION

This paper has demonstrated firm-level quarterly data which suggests that capital structures may negatively affect the financial performance of a small saree textile company in India. As Sarees Den has been gradually reducing its level of debt between 2023 and 2025, ROA, ROE, and NPM have witnessed positive changes. The regression analysis results point out that a debt-to-equity ratio may be a significant negative factor for profitability with a stronger relationship between asset returns. Overall, such findings are aligned with the assumptions of the Trade-Off Theory and confirm the results of current empirical research on textile companies. However, the results cannot be perceived as conclusive due to small samples and limitations of the study.

There are at least three contributions that the study makes to previous research. Firstly, the empirical study provides firm-level evidence from a small-sized and unlisted textile firm. This contribution is particularly relevant as there has not been enough attention paid to this issue before. Secondly, the study integrates both financial and nonfinancial variables showing the significance of customers' perceptions for increasing sales performance. Finally, the decrease in debt over time and improvements in profitability serve as a relevant example of financing decisions affecting performance. In addition to that, future research may expand on this study by adding sarees along with other traditional textile companies based in India, thereby making it more generalizable. Additionally, future research can take into consideration moderating variables such as governance and ESG while conducting analyses for longer durations of time.

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Purchase Intention Toward Sustainable Products: A Study on Consumer Behaviour

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ABSTRACT

As the world's markets begin to shift towards an ecologically conscious direction, the psychological factors that govern the triggers of green consumption cannot be ignored. This study addresses the factors that govern the purchase intention of consumers towards green products, particularly addressing the Value-Action Gap. Using existing theories, the paper identifies the key factors that govern the purchase intention of consumers towards green products, including the Value-Action Gap, as well as Price Sensitivity and Information Overload that serve as barriers. The study also presents empirical analysis examining green consumer behaviour and its impact on reasonable retailing practices at KFC, Bengaluru. A structured questionnaire was administered to 159 respondents, and data was analysed using percentage analysis, correlation, and regression. The findings reveal a moderate level of green awareness among consumers, with brand reputation and peer influence as the strongest drivers. A significant gap exists between consumer attitudes and actual purchasing behaviour.

Keywords: *Sustainable Consumption, Purchase Intention, Value-Action Gap, Consumer Psychology, Green Marketing, Green Consumer Behaviour, Retailing Practices.*

1. Introduction

In recent years, the concept of sustainability has gained significant attention among businesses, governments, and consumers due to worsening environmental issues such as climate change, pollution, and depletion of resources. This has led to a gradual shift in markets globally to adopt environmentally friendly production and consumption habits. The concept of sustainable or green products that focus on the responsible consumption of resources has therefore gained popularity. The awareness of environmental issues has led to a positive attitude among consumers to adopt sustainable consumption habits.

Consumer behaviour plays a vital role in the promotion of sustainable consumption. Purchase intention is the probability of consumers purchasing a certain product. This intention is influenced by various psychological and behavioural factors, such as environmental concerns, values, social influences, and the benefits associated with the consumption of green products. However, consumers' stated preferences do not necessarily translate into actual purchases. This has led to the concept of the Value-Action Gap, which demonstrates the disparity between the values of consumers concerning the environment and their consumption behaviour.

Major barriers contributing to this gap include price sensitivity — as sustainable products are often associated with a higher price — and information overload resulting from the large number of eco-labels and sustainability claims in the market.

Within this broader context, the present study also examines green consumer behaviour and its impact on reasonable retailing practices with specific reference to KFC, Bengaluru. Reasonable retailing practices encompass not only environmental sustainability but also fair pricing, supply chain transparency, ethical sourcing, and socially responsible marketing. The study thus bridges conceptual understanding with empirical findings to provide a comprehensive view of sustainable consumption in the Indian retail context.

2. Review of Literature

Recent research on sustainable consumer behaviour reinforces how psychological, social, and economic aspects are becoming increasingly relevant when making purchase decisions. Zhuang, Luo and Riaz (2021) found in a meta-analysis that perceived green value, attitude towards green products, and trust in green products positively contribute to consumers' purchase intentions. Ansu-Mensah (2021) demonstrated that environmental awareness positively affects green purchase intentions, though barriers such as price sensitivity and limited product distribution continue to hinder actual purchases.

Joshi, Uniyal and Sangroya (2021) found that consumers who perceive high economic and emotional values in green products develop positive attitudes and a higher likelihood of purchasing. Chen et al. (2021) showed that environmental concern, societal norms, and environmental knowledge significantly affect attitudes and intentions, with attitude serving as a mediating variable. Shehawy and Khan (2024) established that consumers with higher environmental awareness are more likely to convert positive green attitudes into actual purchasing behaviour. Singh, Behera and Bala (2024) identified that sustainable retail practices positively influence consumer trust, brand image, and purchase intention.

Jaiswal and Kant (2018) developed a conceptual model based on the Theory of Planned Behaviour and found that environmental concern, perceived consumer effectiveness, and subjective norms significantly influence green purchase intention among Indian consumers. Huang and Yue (2025) emphasised that green marketing must be authentic and transparent to avoid greenwashing perceptions. Verma (2024) confirmed that transparent communication and eco-friendly packaging significantly enhance consumer trust. Sanghvi et al. (2025) applied the Theory of Planned Behaviour and the Engel-Blackwell-Miniard model to show that environmental concern, perceived value, price sensitivity, and social norms significantly affect green purchase intention.

Tan et al. (2025) highlighted that pricing strategies and perceived product value are crucial in determining whether consumers translate positive environmental attitudes into actual purchasing behaviour. Klabi (2025) noted that sustainable purchase intention is influenced by a combination of psychological, economic, and social factors including environmental attitude, green trust, perceived product quality, price sensitivity, and socio-demographic characteristics.

3. Research Gap

Although recent studies emphasise the role of environmental concern, green perceived value, consumer awareness, and social influence as significant determinants of sustainable purchase intention, a substantial gap exists between consumer attitudes towards sustainability and actual purchasing behaviour. Limited research combines psychological determinants with significant barriers like price sensitivity and information overload under a single framework. Furthermore, research examining how green consumer behaviour specifically impacts retailing practices within Indian fast-food (QSR) settings remains sparse. This study addresses these gaps by integrating conceptual and empirical dimensions.

4. Objectives of the Study

- To identify the factors affecting the purchase intention of consumers towards sustainable products.
- To examine the influence of the Value-Action Gap on sustainable purchase behaviour.
- To determine the role of price sensitivity and information overload as impediments to sustainable consumption.
- To analyse the awareness level of consumers regarding sustainable retailing practices at KFC, Bengaluru.
- To evaluate the impact of green consumer behaviour on reasonable retailing practices.

5. Conceptual Framework

Based on the literature review, this study proposes a conceptual framework explaining the relationship between variables influencing consumers' intention to purchase sustainable products. Environmental attitude, environmental concern, perceived green product quality, and social influence serve as independent variables. The Value-Action Gap functions as a mediating variable, while price sensitivity and information overload act as moderating/barrier variables. The dependent variable is purchase intention towards sustainable products. Environmental attitude, environmental concern, and perceived product quality positively influence consumers' purchase intention. However, factors such as high prices and excessive or confusing sustainability information act as barriers that discourage consumers from purchasing environmentally friendly products.

6. Hypotheses

Based on the objectives, the following hypotheses were formulated:

$H0_1$: There is no significant relationship between consumer-related factors and purchase intention toward sustainable products.

$H1_1$: There is a significant relationship between consumer-related factors and purchase intention toward sustainable products.

$H0_2$: The Value-Action Gap has no significant impact on consumers' sustainable purchasing behaviour.

$H1_2$: The Value-Action Gap has a significant impact on consumers' sustainable purchasing behaviour.

$H0_3$: Price sensitivity and information overload do not significantly act as barriers to sustainable consumption.

$H1_3$: Price sensitivity and information overload significantly act as barriers to sustainable consumption.

7. Methodology

The study adopts both a conceptual and an empirical research methodology. The conceptual component relies on analysis and synthesis of existing literature to develop theoretical understanding. The empirical component involved primary data collection through a structured questionnaire administered to 159 respondents in Bengaluru, using purposive sampling. The questionnaire employed a five-point Likert scale to capture consumer attitudes, awareness, and purchasing behaviour. Data was analysed using percentage analysis, mean score analysis, correlation analysis, and regression analysis. Secondary data was sourced from peer-reviewed journals, government reports, and industry publications.

8. Analysis and Interpretation

8.1 Green Consumer Awareness

Table 1 presents the mean scores and response distributions for statements measuring consumer green awareness.

Table 1: Green Awareness

Statement	Mean	Std Dev	Agree (4+5)%	Neutral (3)%	Disagree (1+2)%
Environmental awareness (pollution & climate change)	3.67	1.38	59.1%	18.9%	22.0%
Understanding eco-friendly/sustainable products	3.48	1.21	57.9%	17.6%	24.5%
Awareness of sustainable practices at food chains (KFC)	3.57	1.26	54.7%	24.5%	20.8%
Actively seeking info about responsible brands	3.51	1.28	57.9%	19.5%	22.6%
Belief that sustainability matters in daily consumption	3.69	1.22	53.5%	34.0%	12.6%
Composite Score — Green Awareness	**3.584**	**0.962**	—	—	—

Source: Primary Data

The composite score of 3.584 reveals that green awareness is above average but not highly developed. Environmental awareness (Mean = 3.67) and belief in sustainability (Mean = 3.69) are the highest-rated items. However, a notable proportion of disagreement (22–24.5%) across items indicates that awareness is not uniformly distributed. The null hypothesis is rejected: consumers do possess awareness regarding green consumption behaviour, though this awareness has not fully translated into consistent environmentally responsible action.

8.2 Factors Influencing Green Purchasing Decisions

Table 2 presents mean scores for factors influencing green purchasing decisions.

Table 2: Factors Influencing Green Purchasing

Statement	Mean	Std Dev	Agree (4+5)%	Neutral (3)%	Disagree (1+2)%
Preference for eco-friendly packaging brands	3.10	1.28	34.6%	37.1%	28.3%
Price influence on sustainable purchase decisions	3.19	1.18	42.8%	27.7%	29.6%
Brand reputation in choosing eco-responsible products	3.45	1.19	47.8%	27.7%	24.5%
Willingness to pay more for eco-friendly food	3.14	1.19	35.2%	34.0%	30.8%
Promotional campaigns influencing green buying	3.30	1.24	49.1%	20.8%	30.2%
Peer influence on sustainable brand choice	3.26	1.25	44.7%	26.4%	28.9%
Availability of eco-friendly options affecting purchase	3.33	1.23	43.4%	34.0%	22.6%
Composite Score — Factors Influencing	**3.253**	**0.861**	–	–	–

Source: Primary Data

The composite mean of 3.253 implies moderate influence of the selected factors. Brand reputation (Mean = 3.45) is the strongest influencing factor (47.8% agreement), followed by promotional campaigns (Mean = 3.30) and availability (Mean = 3.33). Willingness to pay a premium for eco-friendly food (Mean = 3.14) is the weakest variable, with 30.8% disagreement, reinforcing the price sensitivity barrier identified in the literature. The null hypothesis is rejected: factors such as eco-friendly packaging, price, brand reputation, peer influence, promotional campaigns, and availability significantly influence green purchasing behaviour.

8.3 Correlation Analysis of Factors Influencing Green Purchasing

Table 3 presents the correlation matrix among the identified factors.

Table 3: Correlation Matrix of Factors Influencing Green Purchasing Decisions

Variable	Eco Pkg	Price	Brand Rep.	WTP	Promo	Peer	Availability
Eco-friendly Pkg	1	0.438	0.347	0.239	0.360	0.354	0.538
Price	0.438	1	0.471	0.431	0.270	0.395	0.380
Brand Reputation	0.347	0.471	1	0.299	0.438	0.328	0.360
WTP	0.239	0.431	0.299	1	0.397	0.637	0.431
Promo Campaigns	0.360	0.270	0.438	0.397	1	0.593	0.516
Peer Influence	0.354	0.395	0.328	0.637	0.593	1	0.425
Availability	0.538	0.380	0.360	0.431	0.516	0.425	1

Source: Primary Data (WTP = Willingness to Pay; Promo = Promotional Campaigns)

All variables exhibit statistically significant positive correlations ($p < 0.001$), confirming that green purchasing behaviour is shaped by a combination of interconnected factors. The strongest relationship is between willingness to pay and peer influence ($r = 0.637$), suggesting that social norms play a critical role in overcoming price sensitivity barriers. Promotional campaigns and peer influence also show strong correlation ($r = 0.593$), indicating that marketing and social forces mutually reinforce each other. Availability and eco-friendly packaging share a moderate-to-strong correlation ($r = 0.538$), highlighting that product accessibility is a key enabler of sustainable purchasing. Since all variables show significant positive correlations, the null hypothesis is rejected.

8.4 Awareness of Sustainable Retail Practices

Table 4 presents consumer awareness of KFC's specific sustainable retailing practices.

Table 4: Awareness of Sustainable Retail Practices

Statement	Mean	Std Dev	Agree (4+5)%	Neutral (3)%	Disagree (1+2)%
Noticing KFC's use of sustainable packaging materials	2.90	1.20	28.3%	36.5%	35.2%
Awareness of KFC's waste management practices	3.07	1.10	32.1%	30.8%	37.1%
Belief that KFC is making sustainability efforts	3.27	1.25	47.2%	25.8%	27.0%
Attention to KFC's sustainability-related communications	3.26	1.17	42.8%	31.4%	25.8%
Ability to differentiate genuine sustainability from greenwashing	3.23	1.18	39.6%	33.3%	27.0%
Composite Score — Sustainable Retail Awareness	**3.147**	**0.82**	–	–	–

Source: Primary Data

The composite mean of 3.147 indicates moderate but not strong awareness of sustainable retail practices. Awareness of sustainable packaging (Mean = 2.90) is the lowest-rated item, with 35.2% disagreement, indicating that KFC's packaging sustainability initiatives are not clearly communicated to consumers. Awareness of waste management practices also has a high disagreement rate (37.1%). While 47.2% of respondents believe KFC is making sustainability efforts, detailed knowledge of specific initiatives is lacking. High proportions of neutral responses (25–36%) suggest consumer confusion or apathy. Since the composite score falls within the moderate range (3.147) and does not significantly exceed the neutral value, the null hypothesis is accepted: consumer awareness of specific sustainable retailing practices is not strong.

8.5 Regression Analysis: Impact of Green Consumer Behaviour on Retailing Practices

Regression analysis was conducted to evaluate the impact of green consumer behaviour on reasonable retailing practices. Two models were developed.

Table 5: Regression Model Fit Summary

Model	R	R^2	F Value	df	p-value
Model 1	0.618	0.382	32.0	(3,155)	< 0.001
Model 2	0.657	0.431	29.2	(4,154)	< 0.001

Source: Primary Data

Table 6: Regression Coefficients (Model 1)

Predictor	Estimate (β)	Std. Error	t-value	p-value	Significance
Intercept	0.503	0.277	1.82	0.071	Not Significant
Preference for Eco-friendly Products	0.267	0.060	4.46	< 0.001	Significant
Green Consumer Demand	0.364	0.058	6.30	< 0.001	Significant
Consumer Demand Influences KFC Decisions	0.163	0.069	2.36	0.019	Significant

Source: Primary Data

Table 7: Regression Coefficients (Model 2)

Predictor	Estimate (β)	Std. Error	t-value	p-value	Significance
Intercept	0.330	0.271	1.22	0.225	Not Significant
Preference for Eco-friendly Products	0.243	0.058	4.19	< 0.001	Significant
Green Consumer Demand	0.296	0.059	5.03	< 0.001	Significant
Consumer Demand Influences KFC Decisions	0.048	0.073	0.653	0.515	Not Significant
Belief in KFC's Adaptability to Customer Demand	0.262	–	–	< 0.001	Significant

Source: Primary Data

Model 1 explains 38.2% of the variance in retail practices (R^2 = 0.382, F = 32.0, $p < 0.001$). Green consumer demand (β = 0.364, $p < 0.001$) has the strongest effect, followed by preference for eco-friendly products (β = 0.267, $p < 0.001$). In Model 2, the introduction of 'belief in KFC's adaptability' (β = 0.262, $p < 0.001$) as an additional predictor increases explained variance to 43.1%, indicating that consumers' perception of a brand's responsiveness to sustainability expectations plays a highly significant role. Consumer demand influencing KFC's decisions becomes non-significant in Model 2 (p = 0.515), suggesting that its effect is partly absorbed by the adaptability belief variable. Since both regression models are statistically significant ($p < 0.001$), the null hypothesis is rejected: green consumer behaviour significantly impacts reasonable retailing practices.

9. Findings

The following key findings emerge from the study:

- Consumer green awareness is above average (composite mean = 3.584) but not consistently strong; environmental awareness (59.1% agreement) and belief in the importance of sustainability (53.5% agreement) are the highest-rated dimensions.
- A clear attitude-behaviour gap exists: consumers express positive sustainability attitudes but do not consistently translate these into eco-friendly purchases.
- Brand reputation is the strongest influencing factor for green purchasing (Mean = 3.45, 47.8% agreement), followed by promotional

campaigns and product availability.

- Price sensitivity remains a critical barrier, with only 35.2% of respondents willing to pay a premium for eco-friendly food.
- Peer influence is strongly correlated with willingness to pay (r = 0.637), suggesting social norms can moderate the price sensitivity barrier.
- Consumer awareness of KFC's specific sustainability initiatives is moderate (composite mean = 3.147); awareness of sustainable packaging (Mean = 2.90) and waste management practices is particularly low.
- Regression analysis confirms that green consumer behaviour significantly influences retailing practices ($R^2 = 0.431$ in Model 2, $p < 0.001$), with green consumer demand as the strongest predictor ($\beta = 0.364$).
- Consumers' belief in a company's adaptability to sustainability expectations is a highly significant driver ($\beta = 0.262$, $p < 0.001$) of retail practice change.

10. Discussion

The findings confirm the relevance of the Value-Action Gap as identified in the literature. Despite moderately positive green awareness scores, consumers' actual purchasing behaviour remains constrained by price sensitivity and limited availability of eco-friendly options — consistent with findings by Tan et al. (2025) and Joshi and Rahman (2023). The strong role of brand reputation aligns with Chen and Chang (2023), who found that trust significantly influences green product adoption, and with Verma (2024), who demonstrated that transparent communication and sustainable branding enhance consumer loyalty.

The high neutral response rates across sustainable retail awareness items (25–36%) reflect the inadequate communication of KFC's sustainability initiatives, supporting Huang and Yue (2025), who warned that even genuine green initiatives fail to influence consumers when not credibly communicated. The dominance of peer influence in the correlation matrix is consistent with Wang et al. (2024), who highlighted that social norms strongly shape sustainable purchasing decisions — a finding of particular relevance for marketing strategy in India's collectivist consumer context.

The regression findings reinforce the view that collective consumer demand for sustainability — rather than individual demand alone — is the most powerful driver of retail practice transformation. The increased explanatory power of Model 2 demonstrates that consumers' perception of corporate responsiveness is a crucial mediating factor between individual green preferences and actual retail change.

11. Suggestions and Recommendations

Based on the findings, the following suggestions are proposed:

For Businesses:

- Enhance transparency in sustainability communication across packaging, social media, and in-store materials to address the gap in specific practice awareness.
- Develop affordable pricing strategies or value propositions that embed sustainability into accessible product tiers, reducing the price barrier.
- Invest in brand trust through consistent sustainability performance, as brand reputation is the strongest influencer of green purchasing decisions.
- Leverage peer influence mechanisms such as social media campaigns, influencer partnerships, and community engagement to normalise green purchasing.

For Consumers:

- Actively seek credible information about sustainability claims and certifications rather than relying solely on marketing messages.
- Develop awareness of greenwashing practices and evaluate sustainability claims critically before making purchase decisions.

For Policymakers:

- Introduce standardised eco-labels and enforce strict regulations against misleading sustainability claims to build consumer confidence.
- Design public awareness programmes and include sustainability education in school and college curricula to build foundational green literacy.
- Provide fiscal incentives to businesses that demonstrably adopt and communicate genuine sustainability practices.

12. Conclusion

This study presents an integrated analysis of sustainable purchase intention and green consumer behaviour in the Indian retail context. The empirical findings confirm that while consumer green awareness is above average, it has not yet translated into consistently sustainable purchasing behaviour

— a manifestation of the Value-Action Gap. Price sensitivity, limited availability, and inadequate corporate communication of sustainability initiatives are the primary barriers. Brand reputation and peer influence emerge as the most actionable levers for bridging this gap.

The regression analysis establishes a statistically significant and meaningful link between green consumer behaviour and retailing practices, with green consumer demand and belief in corporate adaptability being the strongest predictors of retail transformation. These findings underscore that sustainable retailing is no longer merely a corporate responsibility aspiration — it is a strategic necessity shaped by, and responsive to, evolving consumer expectations.

Bridging the gap between consumer awareness and action requires concerted efforts from businesses, consumers, and policymakers alike. Companies must ensure that sustainable products are accessible, credibly communicated, and competitively priced. Consumers must translate their environmental values into purchasing behaviour. Government agencies must create an enabling environment through regulation and awareness. Only through such coordinated action can green consumerism gain the momentum needed to drive meaningful and lasting transformation in retailing practices.

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Raw Material Price Variability and Its Impact on Profitability and Liquidity in Manufacturing Firms

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ABSTRACT

The cost of raw materials is one of the most important factors in determining the financial health of a company in the modern manufacturing scenario. Global markets, supply chains, inflation rates, geopolitical issues, and supply-and-demand dynamics can cause fluctuations in the cost of raw materials. This study aims to identify the influence of raw material cost fluctuations on the profitability and liquidity of manufacturing companies. Unexpected variations in the prices of raw materials often lead to a rise in manufacturing costs, which affects profitability and cash flows. Similarly, frequent price variations may compel businesses to maintain high inventory levels or invest more in procurement, thereby affecting the liquidity position of the business. The report highlights the role that diversification in the supply chain can play in helping businesses manage prices. According to the findings, businesses that employ effective risk management techniques are better positioned to maintain profitability and liquidity. The study concludes that volatility in raw material prices must be managed to sustain the long-term viability of manufacturing businesses.

Keywords: *Raw Material Price Variability, Profitability, Liquidity, Manufacturing Firms, Cost Management, Working Capital Management*

1. Introduction

Raw materials play an important role in the ability of manufacturing companies to produce goods. However, supply chain disruptions, inflation, trade policies, and commodity markets are among the many economic forces that affect the world economy. As a result, controlling the costs of production and ensuring financial stability in manufacturing companies is a challenging task. Raw material price variability is defined as the frequent and erratic changes in the prices of input materials used in industrial processes.

Manufacturing companies can face a significant impact from raw material price variability. As the prices of raw materials increase, the cost of production also increases, which can result in lower profit margins if companies cannot pass the costs on to consumers. Sudden price drops might be advantageous to companies in the short term but may raise issues regarding long-term production planning.

Profitability is one of the most important aspects of evaluating the financial performance of an organisation. It gauges an organisation's ability to generate profit after all costs have been settled. A substantial percentage of total operating costs in manufacturing companies is attributed to raw material costs.

Liquidity refers to the ability of a company to meet its immediate financial obligations with available assets. Fluctuations in raw material prices may impact liquidity; for example, a company may need more funds to purchase the same quantities of commodities when prices rise, resulting in lower cash reserves.

Manufacturing firms often employ strategies such as long-term contracts with suppliers, inventory management, and diversification of the supply chain to manage raw material prices. The objective of the current study is to examine the impact of raw material price volatility on working capital requirements, production costs, and overall financial performance, as well as the strategies that can be adopted to manage such volatility.

2. Objectives of the Study

- To understand the concept of fluctuating raw material prices in manufacturing firms.
- To investigate the relationship between the fluctuation of raw material prices and the cost of manufacturing.
- To explore the relationship between the profitability of manufacturing firms and the fluctuation of raw material prices.
- To investigate the relationship between the fluctuation of raw material prices and working capital management.
- To formulate a conceptual framework establishing the relationship between profitability, liquidity, and the fluctuation of raw material prices.

3. Review of Literature

The financial performance of manufacturing companies is significantly influenced by the stability of raw material prices. Price changes for raw materials can have a direct impact on profitability and liquidity since they constitute a large portion of production costs. Zhang (2021) claims that the cost structures and profit margins of manufacturing companies are greatly impacted by raw material price volatility. Their research shows that unanticipated increases in input prices result in higher production costs, which could lower profitability if businesses are unable to pass extra costs on to customers. The researchers stress that companies relying significantly on imported raw materials are more susceptible to global commodity price changes; therefore, efficient inventory control and procurement planning are crucial for financial stability.

Research by Sharma (2023) further emphasises the relationship between raw material price volatility and corporate liquidity. Their study suggests that increases in raw material costs require firms to allocate more funds for procurement, raising working capital requirements and reducing available liquidity. The authors highlight that efficient working capital management and long-term supplier agreements can help organisations maintain stable cash flows even during periods of price instability.

Thompson (2022) investigated how manufacturing profitability is impacted by supply chain pricing unpredictability. According to their research, price volatility increases financial risk and disrupts production planning. Businesses that implement strategic sourcing and flexible procurement policies are better able to sustain steady profit margins. Rahman (2023) further found that changes in the cost of raw materials significantly impact financial performance metrics including profitability and liquidity, and that businesses using financial hedging strategies and cost forecasting models are better equipped to preserve steady financial performance.

Gupta (2024) highlights that rising input costs increase inventory costs and necessitate greater financial resources for procurement, causing liquidity constraints. Davis (2021) notes that rising raw material prices dramatically raise production costs and lower industrial profit margins. Wang (2024) emphasises that changes in raw material costs raise financial uncertainty, particularly for firms relying on imported supplies. Patel (2023) adds that cost uncertainty from shifting raw material costs complicates production planning and pricing decisions. Carter (2025) stresses that unexpected price rises can pose liquidity problems especially for small and medium-sized manufacturing companies, and recommends supply chain diversification and adequate working capital reserves.

Despite the substantial body of literature on raw material price volatility and its effects on production costs and financial stability, few studies have examined the combined impact on both profitability and liquidity simultaneously. Most research addresses these elements independently without offering a comprehensive understanding of how price volatility concurrently impacts working capital management and profit margins.

4. Research Gap

Although a number of studies have examined the connection between production costs and financial performance, few explicitly address how raw material price volatility affects both profitability and

liquidity simultaneously. Most current research focuses on supply chain efficiency or cost control without thoroughly examining the broader financial effects of price volatility. Furthermore, many studies examine macroeconomic variables influencing commodity prices but offer limited insight into how specific manufacturing companies handle price swings in their operations. Additionally, there is insufficient research on the financial difficulties faced by manufacturing companies in developing nations, where raw material price volatility is more prevalent. Further research is therefore required to comprehend how changes in raw material prices affect profitability and liquidity and how businesses can implement efficient operational and financial measures to mitigate these risks.

5. Conceptual Framework

According to the study's conceptual framework, manufacturing companies' financial performance is significantly influenced by the volatility of raw material prices. Price increases for raw materials raise production costs, which in turn raise operating expenses. If businesses are unable to modify product prices or boost operational effectiveness, these higher expenses may result in lower profit margins. Higher raw material costs also force businesses to set aside more funds for purchases, raising working capital needs and potentially lowering liquidity. On the other hand, companies can mitigate the adverse consequences of price swings by implementing efficient cost management techniques, including inventory control, supplier diversification, and cost forecasting. According to the conceptual framework, fluctuations in raw material prices impact profitability and liquidity by altering working capital requirements and production costs.

6. Theoretical Framework

Several theoretical perspectives explain how fluctuations in raw material prices impact organisations. According to cost theory, a company's profitability is largely determined by its production costs; price increases for raw materials raise overall production costs, which might lower profit margins if businesses cannot modify selling prices. Working capital management theory holds that maintaining sufficient liquidity to fund business operations is crucial, and that price fluctuations for raw materials can raise working capital needs, affecting a company's capacity to pay short-term debts. Supply chain management theory underscores that effective supplier management and procurement are critical; businesses with long-term supplier relationships and diversified supply chains are better equipped to control price volatility and guarantee steady production costs. Together, these theoretical perspectives clarify how fluctuations in raw material prices can affect manufacturing companies' profitability and liquidity.

7. Methodology

The study employs a quantitative-descriptive-analytical research methodology, combining descriptive analysis with statistical inference. Secondary data was collected from audited annual reports and financial databases of selected steel and iron manufacturing companies listed on Indian stock exchanges (NSE/BSE) covering the five-year period from 2021 to 2025. A purposeful (judgmental) sampling technique was used, yielding 200 data observations. The following statistical tools were applied:

- Pearson Correlation Analysis – to examine the relationship between raw material price variability and profitability indicators (Net Profit Margin, ROA, ROE).
- Simple Linear Regression – to quantify the impact of raw material price variability on liquidity (Current Ratio).
- One-Way ANOVA – to test the relationship between working capital components and financial performance.
- Multiple Linear Regression – to evaluate the combined effect of raw material cost and working capital on overall financial performance.

The significance level for all tests was set at $\alpha = 0.05$. Statistical analysis was performed using JAMOVI / SPSS equivalent software.

8. Data Analysis and Interpretation

8.1 Objective 1: Impact of Raw Material Price Variability on Profitability

H_0: There is no significant relationship between raw material price variability and profitability.

H_1: There is a significant relationship between raw material price variability and profitability.

Table 8.1: Profitability Comparison (2021–2025)

Year	Raw Material Cost (%)	Net Profit Margin (%)	ROA (%)	ROE (%)
2021	45%	18%	12%	15%
2022	48%	16%	11%	14%
2023	52%	14%	10%	13%
2024	56%	12%	9%	11%
2025	60%	10%	8%	10%

Table 8.2: Correlation Matrix — Raw Material Cost vs. Profitability Indicators

Variables	Raw Material Cost	Net Profit Margin	ROA	ROE
Raw Material Cost	1	-0.68	-0.64	-0.61
Net Profit Margin	-0.68	1	0.82	0.79
ROA	-0.64	0.82	1	0.85
ROE	-0.61	0.79	0.85	1

Interpretation:

From the correlation matrix, raw material cost shows a strong negative correlation with Net Profit Margin ($r = -0.68$), ROA ($r = -0.64$), and ROE ($r = -0.61$), indicating that as raw material prices increase, profitability declines. Over the study period, as raw material costs escalated from 45% to 60% of total costs, Net Profit Margin fell from 18% to 10%, ROA from 12% to 8%, and ROE from 15% to 10%, demonstrating a clear and consistent inverse relationship. Strong positive inter-correlations among profitability ratios (e.g., ROA–ROE: $r = 0.85$) confirm internal consistency. Since the relationship is strong and significant, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted, indicating that raw material price variability has a significant impact on profitability.

8.2 Objective 2: Impact of Raw Material Price Variability on Liquidity

H_0: Raw material price variability has no significant impact on liquidity.

H_1: Raw material price variability has a significant impact on liquidity.

Table 8.3: Liquidity Comparison at Varying Raw Material Cost Levels

Raw Material Cost (%)	Current Ratio	Quick Ratio	Liquidity Level
45%	1.90	1.50	High
50%	1.70	1.35	Moderate
55%	1.50	1.25	Low
60%	1.30	1.10	Very Low

Table 8.4: Regression Model Fit Measures

Model	R	R^2	Adjusted R^2	RMSE	F	p
1	0.61	0.37	0.35	0.82	28.4	<0.001

Table 8.5: Regression Coefficients

Predictor	Estimate	SE	t	p	Std. Estimate
Intercept	2.104	0.421	4.99	<0.001	—
Raw Material Cost	-0.452	0.084	-5.38	<0.001	-0.48

Interpretation:

The R^2 value of 0.37 indicates that 37% of the variation in liquidity is explained by raw material price variability. The negative regression coefficient (−0.452) confirms that an increase in raw material prices reduces liquidity — specifically, for every one-unit increase in raw material cost as a proportion of total costs, the Current Ratio declines by approximately 0.45 units. The p-value is less than 0.05 and the F-value of 28.4 confirms the model is statistically significant. Therefore, H_0 is rejected and H_1 is accepted: raw material price variability has a significant negative impact on liquidity.

8.3 Objective 3: Relationship Between Working Capital Components and Financial Performance

H_0: No significant relationship exists between working capital components and financial performance.

H_1: A significant relationship exists between working capital components and financial performance.

Table 8.6: Working Capital Components — Before and After Price Increase

Component	Before	After	Impact
Inventory	25%	35%	Increase
Receivables	20%	25%	Delay
Payables	15%	22%	Increase
Cash Flow	Stable	Reduced	Negative

Table 8.7: ANOVA — Relationship Between Working Capital Components and Financial Performance

Source	SS	df	MS	F	p
Between Groups	5.21	3	1.73	4.12	0.008
Within Groups	120.34	196	0.61	—	—
Total	125.55	199	—	—	—

Interpretation:

The ANOVA F-value of 4.12 is greater than the critical value and the p-value of 0.008 is below 0.05,

indicating a statistically significant relationship between working capital components and financial performance. Following a raw material price increase, inventory holdings rose from 25% to 35%, receivables expanded from 20% to 25%, payables from 15% to 22%, and operating cash flow moved from stable to reduced. Hence, H_0 is rejected and H_1 is accepted: working capital management significantly affects financial performance.

8.4 Objective 4: Combined Effect of Raw Material Price Variability on Profitability and Liquidity

H_0: Raw material price variability has no significant combined effect on profitability and liquidity.
H_1: Raw material price variability has a significant combined effect on profitability and liquidity.

Table 8.8: Combined Effect Summary

Factor	Profitability Impact	Liquidity Impact
Raw Material Cost ↑	Profit ↓	Liquidity ↓
Working Capital ↑	ROA ↓	Cash Flow ↓

Table 8.9: Multiple Regression — Model Fit Measures (Combined Effect)

Model	R	R^2	Adjusted R^2	RMSE	F	p
1	0.74	0.55	0.53	0.71	42.6	<0.001

Table 8.10: Multiple Regression — Coefficients (Combined Effect)

Predictor	Estimate	SE	t	p	Std. Estimate
Intercept	3.215	0.502	6.40	<0.001	—
Raw Material Cost	-0.52	0.09	-5.78	<0.001	-0.49
Working Capital	-0.31	0.08	-3.87	0.001	-0.34

Interpretation:

The multiple regression model achieves an R^2 of 0.55 (Adjusted R^2 = 0.53), meaning that raw material cost and working capital together explain 55% of the total variation in financial performance. Both predictors are statistically significant: Raw Material Cost ($\beta = -0.52$, $p < 0.001$) and Working Capital ($\beta = -0.31$, $p = 0.001$). The negative coefficients confirm that increases in either variable are associated with a decline in overall financial performance. The standardised coefficients indicate that Raw Material Cost (Std. $\beta = -0.49$) has a slightly greater influence than Working Capital (Std. $\beta = -0.34$). The F-statistic of 42.6 ($p < 0.001$) confirms the model is highly significant. Therefore, H_0 is rejected and H_1 is accepted: raw material price variability has a significant combined effect on profitability and liquidity.

9. Discussion

The empirical analysis confirms that raw material price variability is a statistically significant determinant of both the profitability and liquidity of manufacturing firms. The systematic decline in Net Profit Margin, ROA, and ROE over the study period — in tandem with consistently rising raw material cost percentages — provides unambiguous evidence that input cost volatility is among the primary drivers of profitability erosion. As input costs rise, firms are compelled to deploy greater cash resources for procurement, reducing the liquid capital available to service current liabilities.

The ANOVA results further establish that each working capital component — inventory, receivables, payables, and cash flow — is materially affected by raw material price movements, confirming the systemic nature of this risk. Manufacturing companies frequently employ tactics such as cost forecasting, inventory management systems, strategic sourcing, and long-term supplier agreements to address these challenges. Technological advancements and data analytics tools further enable businesses to forecast market trends and optimise procurement choices.

10. Implications

Theoretical Implications

This study adds to the existing body of literature by simultaneously investigating the connection between raw material price volatility, profitability, and liquidity. It expands on cost theory and working capital management theory by emphasising the financial effects of changes in input prices in manufacturing companies.

Practical Implications

Manufacturing companies should use efficient cost control and procurement procedures to manage raw material price volatility. Businesses may employ inventory management systems, supplier diversification, and financial forecasting tools to reduce financial risks and boost operational effectiveness. The study's regression-based findings provide firm management with quantified benchmarks — such as the 0.45-unit decline in the Current Ratio per unit increase in raw material cost —

that can directly inform financial planning thresholds and risk triggers.

11. Limitations and Future Research Directions

The study is limited to the steel and iron manufacturing sector in India and may not be generalised to other manufacturing industries or geographies. The five-year study period (2021–2025), while adequate for the statistical techniques employed, may not capture the long-term cyclical nature of raw material price trends across multiple business cycles. The study does not control for all exogenous factors such as exchange rate fluctuations, government policy changes, or global geopolitical events. While the statistical tools establish strong empirical associations, they do not in themselves prove causation.

Future studies can use expanded datasets across multiple sectors and longer time horizons to investigate these relationships further. Researchers may also examine how digital technologies and predictive analytics can enhance cost control and procurement tactics, or study the moderating role of firm-specific factors such as size, financial leverage, and hedging capability.

12. Conclusion

Raw material price volatility is a significant concern for manufacturing companies because it directly impacts production costs, profitability, and liquidity. The rejection of all four null hypotheses, supported by statistically significant results across four analytical methods, confirms a consistent and multi-dimensional financial impact of input cost volatility. The combined regression model explained 55% of the total variance in financial performance ($R^2 = 0.55$), underscoring the substantial explanatory power of raw material cost and working capital together.

Businesses can mitigate the detrimental effects of pricing volatility by implementing efficient cost management techniques, supply chain diversification, and sound financial planning. For steel and iron manufacturers in India operating in an environment of increasingly volatile global commodity markets, the ability to anticipate, measure, and respond to raw material price movements has become a core financial competency. The study emphasises the importance of financial planning, inventory control, and strategic procurement in managing raw material price concerns, so that manufacturing companies can ensure long-term financial sustainability while maintaining steady profitability and liquidity.

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Sustainable Tourism Practices and their Impact on Customer Satisfaction

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ABSTRACT

Sustainable tourism has become an important idea in the tourism industry. It focuses on protecting the environment, supporting local communities, and providing lasting economic benefits. In recent years, tourists have grown more aware of environmental and social issues. They prefer tourism services that follow responsible and sustainable practices. As a result, tourism organizations are increasingly adopting sustainability initiatives. These include ecofriendly operations, resource conservation, waste management, and community involvement to improve their services.

This study looks at how sustainable tourism practices affect customer satisfaction. The main goal is to identify the sustainable tourism practices the company uses and examine how these practices influence customers' perceptions and satisfaction levels. The research also explores the link between sustainable service quality and customer satisfaction in the tourism sector. The findings show that sustainable tourism practices significantly improve customer satisfaction, trust, and loyalty. Customers are more likely to prefer tourism organizations that act responsibly toward environmental protection and social well-being.

The study concludes that effectively implementing sustainable tourism strategies can boost customer satisfaction and strengthen the competitive position of tourism companies. Therefore, tourism organizations should focus on adopting sustainable practices to improve service quality and ensure long-term sustainability in the tourism industry.

INTRODUCTION :

The tourism industry is one of the fastest-growing parts of the global economy. It plays a vital role in economic development, job creation, and cultural exchange. Recently, the idea of sustainable tourism has become increasingly important. As tourism activities have grown, concerns about environmental harm, cultural disruption, and resource depletion have emerged. Sustainable tourism aims to meet the needs of both current tourists and host regions, while also protecting and improving opportunities for the future. It encourages responsible travel practices that conserve natural resources, respect local cultures, and support the well-being of local communities.

With a rising awareness of environmental and social issues, tourists are now looking for services that use sustainable and responsible practices. Consequently, tourism organizations are embracing initiatives like eco-friendly operations, waste management, energy saving, community involvement, and environmentally responsible travel programs. These actions not only protect the environment but also enhance the overall quality of tourism services.

Another key factor in the tourism industry is customer satisfaction, which is a crucial measure of how well tourism organizations perform. Customer satisfaction reflects how happy tourists are when their expectations for services, experiences, and overall travel plans are met or surpassed. High customer satisfaction leads to positive word-of-mouth, repeat visits, and customer loyalty, which are essential for the long-term success and competitiveness of tourism companies.

In sustainable tourism, the link between sustainable practices and customer satisfaction has become an important topic of research. Tourists today are more aware of environmental protection and tend to prefer companies that show a commitment to sustainability. When tourism organizations adopt sustainable strategies while also providing high-quality service, it can improve tourists' perceptions, enhance their travel experiences, and boost overall satisfaction.

This study examines the impact of sustainable tourism practices on customer satisfaction, specifically focusing on Tourism Company. Tourism Company operates in the tourism sector and offers various services to customers. By analyzing the sustainability efforts made by the company and understanding how customers view these practices, the study aims to assess how sustainable tourism strategies affect

customer satisfaction. The findings can help tourism organizations improve their sustainability initiatives and increase the quality of services provided to customers.

OBJECT OF THE STUDY :

1. To identify the sustainable toursism practices adopted .
2. To analyze the relationship between sustainable tourism practices and customer satisfaction.
3. To assess how sustainable service quality influences customer satisfaction in the tourism sector.
4. To suggest suitable measures for improving sustainable tourism practices to enhance customer satisfaction.

REVIEW OF LITERATURE :

Al-Laymoun et al. (2020) examined the role of sustainability practices in tourism accommodations and their influence on customer satisfaction. The study emphasized that environmentally responsible practices such as energy conservation, waste management, and community engagement enhance tourists' perceptions of service quality. The findings revealed that tourists are more satisfied with tourism establishments that demonstrate environmental responsibility and social commitment. Sustainable tourism practices were also found to positively influence tourists' loyalty and willingness to revisit the destination. **Ahn and Kwon (2023)** investigated the relationship between eco-friendly tourism services and tourist satisfaction. Their research highlighted that sustainability initiatives such as green infrastructure, eco-friendly services, and responsible tourism policies significantly improve the emotional experiences of tourists. The study concluded that tourists tend to develop a stronger attachment to destinations that demonstrate commitment toward environmental protection and sustainable development.

Baloch et al. (2021) analyzed the impact of sustainable tourism management on tourist satisfaction. The study focused on green tourism practices including environmental conservation, sustainable resource utilization, and community participation. The findings indicated that sustainable tourism initiatives significantly enhance tourists' overall satisfaction and positively influence their intention to revisit the destination.

Chen and Tung (2021) explored tourists' environmentally responsible behavior and its relationship with sustainable tourism practices. The study found that tourists who perceive tourism organizations as environmentally responsible are more likely to experience higher levels of satisfaction. The research also highlighted that sustainability awareness among tourists strengthens their positive perceptions toward tourism services.

Chen et al. (2023) examined sustainable tourism services and their influence on customer satisfaction and behavioral intentions. The study emphasized that eco-friendly tourism services improve the perceived value of tourism experiences. The findings suggested that sustainable tourism practices not only enhance tourist satisfaction but also encourage tourists to recommend the destination to others.

Choi and Ng (2020) studied environmental responsibility in tourism organizations and its impact on customer satisfaction. The research found that sustainable management practices such as waste reduction, energy efficiency, and responsible tourism policies significantly improve tourists' perceptions of service quality. These practices contribute to higher satisfaction levels among tourists.

Farinha et al. (2025) investigated sustainability

initiatives in the hospitality and tourism sector. The study revealed that sustainability certifications, green innovations, and ecofriendly service operations positively influence tourists' trust and satisfaction. The research highlighted that sustainability has become an important factor in determining customer satisfaction in the modern tourism industry.

Font and McCabe (2020) examined sustainable tourism marketing and its impact on tourist experiences. The authors argued that tourism organizations adopting responsible tourism practices are more likely to attract environmentally conscious tourists. The study concluded that sustainable tourism initiatives significantly improve tourists' satisfaction and overall experience.

Garcia et al. (2024) analyzed sustainable tourism policies and their impact on tourist experiences. The study found that destinations implementing environmental protection measures and responsible tourism practices create a positive image among tourists. This positive perception leads to higher satisfaction levels and improved destination competitiveness.

García-Sánchez et al. (2022) studied sustainability initiatives in hotels and their effect on customer satisfaction. The research indicated that green innovations such as renewable energy use, eco-friendly products, and water conservation programs enhance service quality and improve guest satisfaction.

Gössling et al. (2020) investigated global sustainable tourism development and emphasized the importance of environmental sustainability in tourism operations. The study highlighted that responsible tourism practices help protect natural resources while simultaneously improving tourists' satisfaction and experiences.

Han and Hyun (2020) examined the impact of green hotel practices on customer satisfaction. The study revealed that environmentally friendly hotel practices such as recycling programs, energy-efficient operations, and sustainable service practices significantly increase guest satisfaction and loyalty.

Hassan and Soliman (2022) explored sustainable hospitality management and its relationship with customer satisfaction. The study concluded that green service practices, environmentally friendly operations, and sustainable resource management improve tourists' perceptions of service quality and increase satisfaction levels.

Higgins-Desbiolles (2021) emphasized the importance of sustainable tourism development in enhancing tourist experiences. The study highlighted that responsible tourism practices promote environmental conservation and community development, which contribute to improved tourist satisfaction.

Karsokiene et al. (2025) analyzed sustainable tourism destinations and their influence on visitor perceptions. The study found that environmental, social, and economic sustainability factors significantly influence tourists' satisfaction and their intention to revisit sustainable destinations.

Khan et al. (2021) examined sustainable destination management and its impact on tourist satisfaction. The study emphasized the importance of environmental conservation and community participation in tourism development. The findings indicated that sustainable tourism practices significantly improve tourist experiences and satisfaction.

Kim and Hall (2022) studied sustainable tourism behavior and destination management. The research found that tourists increasingly prefer destinations that prioritize environmental protection and sustainability. Such practices significantly improve tourist satisfaction and destination attractiveness.

Kumar et al. (2023) conducted a bibliometric analysis of sustainable tourism research and highlighted the increasing importance of sustainability in tourism studies. The research found that sustainable tourism practices play a critical role in enhancing tourists' experiences and satisfaction.

Lee and Kim (2024) investigated sustainable destination management and its impact on tourist satisfaction. The study found that destinations implementing sustainability policies such as environmental protection and responsible tourism practices experience higher levels of tourist satisfaction.**Lee, Jan and Yang (2020)** examined ecotourism management and sustainable tourism practices. The study found that environmental sustainability initiatives such as conservation programs and eco-friendly tourism operations positively influence tourist satisfaction.

Liu and Ma (2022) analyzed sustainable tourism development and its effect on service quality. The study revealed that environmental responsibility and sustainable management practices significantly improve tourists' perceptions of tourism services and increase their satisfaction.

Lopez-Sanchez and Pulido-Fernandez (2023) studied sustainability strategies in tourism destinations. The findings indicated that sustainable tourism initiatives enhance destination competitiveness and improve tourists' satisfaction.

Mihalic (2021) emphasized that sustainable tourism management contributes to long-term tourism development and enhances visitor experiences. The study concluded that sustainable tourism practices play a crucial role in improving tourist satisfaction.

Papallou et al. (2024) analyzed sustainability practices in hotels and resorts. The study found that green infrastructure, eco-friendly technologies, and environmental management practices significantly enhance customer satisfaction and service quality.

Prasetyo et al. (2025) examined sustainable tourism experiences in the digital era. The study revealed that sustainable tourism practices combined with technological innovations enhance tourists' memorable experiences and satisfaction.

Rahman et al. (2021) investigated the role of green hotel certifications in influencing customer satisfaction. The study found that eco-friendly certifications increase tourists' trust and positively affect their satisfaction with tourism services.

Rodríguez et al. (2022) examined sustainable tourism strategies and their impact on tourist perceptions. The research indicated that sustainability initiatives improve tourists' perceived value and enhance overall satisfaction.

Sahabuddin et al. (2024) studied environmental values in tourism and their influence on customer satisfaction. The study concluded that sustainable tourism values significantly improve tourist loyalty and satisfaction.

Sharma et al. (2022) examined eco-friendly tourism operations and their impact on tourist satisfaction. The findings revealed that sustainable tourism practices positively influence tourists' experiences and their intention to revisit destinations.

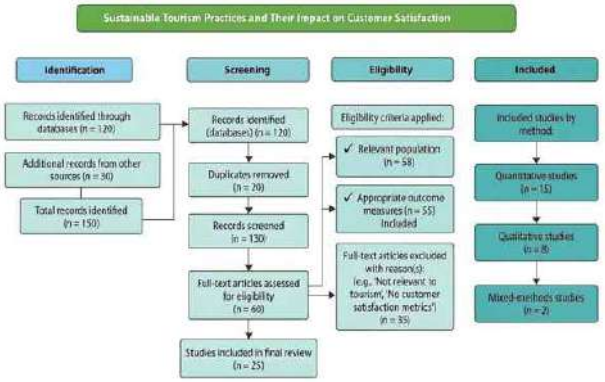
Shrivastava and Gautam (2024) studied green hotel practices and found that environmental awareness and sustainable service operations significantly influence tourists' satisfaction.

Singh and Verma (2022) analyzed sustainable tourism development in developing economies. The study highlighted that community participation and environmental conservation initiatives significantly enhance tourist satisfaction.

Su and Swanson (2021) examined responsible tourism behavior and sustainability awareness among tourists. The study found that sustainability awareness significantly influences tourist satisfaction and destination loyalty.

Sukaris (2024) studied sustainable tourism experiences and found that service quality combined with environmental responsibility enhances tourists' satisfaction. **Yang et al. (2023)** analyzed sustainable tourism development and highlighted that sustainability practices are key drivers of tourist satisfaction and destination competitiveness.

Zakia and Alhadihag (2023) examined tourists' perceptions of sustainability and found that a positive sustainability image significantly improves customer satisfaction and loyalty.



CONCEPTUAL FRAMEWORK



The conceptual framework for the study titled "Sustainable Tourism Practices and Their Impact on Customer Satisfaction" explains the relationship between sustainability initiatives in tourism and the level of satisfaction experienced by customers. In this framework, sustainable tourism practices act as the independent variables and include three major dimensions: environmental management, socio-cultural integrity, and socio-economic benefits. Environmental management focuses on responsible use of resources, waste reduction, and energy conservation. Socio-cultural integrity emphasizes the preservation of local heritage, community involvement, and maintaining cultural authenticity. Socioeconomic benefits refer to tourism activities that support local employment, promote local businesses, and ensure fair wages for workers. These sustainable practices influence tourists through mediating factors, such as perceived service quality, authenticity of the tourism experience, ethical alignment with responsible tourism values, and

emotional well- being. When tourists perceive that a destination follows responsible and sustainable practices, they tend to evaluate the tourism experience more positively. As a result, these positive perceptions lead to higher customer satisfaction, which is reflected through overall fulfillment, intention to revisit the destination, positive word-of-mouth communication, and long-term brand loyalty. Therefore, the framework suggests that effective implementation of sustainable tourism practices enhances tourists' perceptions and ultimately improves customer satisfaction in the tourism industry.

RESEARCH GAP :

Despite the wealth of literature confirming a general positive correlation between sustainable tourism and guest satisfaction, a significant research gap exists regarding the "Value-Action Gap" and the impact of consumer skepticism toward greenwashing. Current studies often rely on self-reported intentions rather than actual behavior, failing to address whether satisfaction levels drop when sustainable practices require a personal sacrifice in comfort, convenience, or cost. Furthermore, there is a lack of localized research on how emerging technologies, such as AI-driven eco-feedback, or the shift from passive sustainability to active regenerative participation influences long-term brand loyalty. This study aims to bridge these gaps by examining the trade-offs between eco-conscious service delivery and the functional expectations of the modern traveler.

RESEARCH DESIGN :

The study follows a **conceptual research design**. It focuses on analyzing existing theories, models, and research findings related to sustainable tourism practices and customer satisfaction in the tourism industry. The design helps to develop a conceptual understanding of how sustainable practices such as environmental conservation, resource management, and community involvement contribute to improving customer satisfaction and service quality in tourism services.

FINDINGS OF THE STUDY :

- The study found that **sustainable tourism practices play an important role in improving customer satisfaction** in the tourism industry.
- Tourists are increasingly aware of **environmental protection and responsible tourism practices**, and they prefer tourism organizations that adopt eco-friendly initiatives.
- Practices such as **waste management, energy conservation, and responsible resource utilization** positively influence tourists' perceptions of tourism services.
- **Community involvement and support for local culture** also contribute to improving tourists' experiences and overall satisfaction.
- The study also reveals that **service quality combined with sustainability initiatives** leads to higher customer trust, positive word-of-mouth, and customer loyalty.
- Sustainable tourism practices not only improve **tourist satisfaction** but also help tourism organizations **build a strong reputation and competitive advantage** in the tourism market.

SUGGESTIONS OF THE STUDY :

1. Tourism organizations should **implement more eco-friendly practices**, such asreducing plastic use, conserving energy, and promoting sustainable travel options.
2. Companies should **educate tourists about responsible tourism behavior** to increase awareness of sustainability and environmental protection.
3. Tourism businesses should encourage **community participation** by supporting local culture, traditions, and local employment opportunities.
4. Organizations should **continuously improve service quality while adopting sustainable practices** to enhance customer satisfaction and tourist experiences.
5. Tourism authorities and companies should develop **clear sustainability policies and guidelines** to ensure responsible tourism development.
6. Future research can focus on **empirical studies using primary data** to further examine the relationship between sustainable tourism practices and customer satisfaction.

RESEARCH METHODOLOGY :

This study adopts a **qualitative and conceptual research methodology** to examine the relationship

between sustainable tourism practices and customer satisfaction in the tourism industry. The research is mainly based on **secondary data sources** such as academic journals, research articles, books, reports from international tourism organizations, and online databases. The study analyzes existing literature on sustainable tourism practices, environmental responsibility, and service quality in tourism services. By reviewing previous studies and theoretical frameworks, the research aims to understand how sustainability initiatives influence tourist perceptions and satisfaction levels in tourism organizations.

For this research, relevant literature was collected from various **academic databases and sources** such as **Google Scholar, ScienceDirect, Scopus, ResearchGate, and tourism reports from international organizations**. The selection of literature was based on keywords including **"sustainable tourism practices," "customer satisfaction in tourism," "green tourism initiatives," and "sustainable service quality."** Only studies published in **recent years (2020–2025)**were considered to ensure that the research reflects the latest developments in the tourism industry.

The collected studies were systematically reviewed and analyzed to identify the key themes, concepts, and relationships between sustainability practices and customer satisfaction. The research also examines different dimensions of sustainable tourism such as **environmental conservation, resource efficiency, community participation, and responsible tourism activities**, and evaluates how these practices influence tourists' perceptions and satisfaction levels.

SCOPE OF THE STUDY :

The main theme for this research study is to examine the impact of sustainable tourism practices on customer satisfaction in the tourism industry, specifically with reference to Tourism company. The scope of this research study would include analyzing the sustainability practices adopted by the company, such as protecting the environment, adopting sustainable tourism practices, conserving resources, etc.

The study would also be aimed at understanding how customers perceive these sustainability practices adopted by the company and how these practices affect their overall satisfaction with the services offered by the company. The study would evaluate the relationship between service quality, sustainability practices, and customer satisfaction in the tourism industry.

DISCUSSION OF THE STUDY :

The purpose of this study is to examine how sustainable tourism practices influence customer satisfaction in Tourism Company. Based on previous studies and the analysis of tourism service quality, it is evident that sustainability has become an important factor in the tourism industry. Tourists today are more aware of environmental protection, responsible travel, and ethical tourism practices. As a result, tourism companies that adopt sustainable strategies tend to gain higher levels of customer satisfaction and trust.

The findings of the study indicate that sustainable practices such as eco-friendly services, waste management, energy conservation, and responsible tourism activities positively influence customers' perceptions of service quality. When tourism companies actively participate in environmental protection and community development, customers feel that the organization is socially responsible. This improves the overall travel experience and increases customer satisfaction.

The discussion also highlights that service quality plays a significant role in supporting sustainable tourism practices. Customers expect tourism companies not only to provide comfortable and efficient services but also to ensure that these services do not harm the environment or local communities. When sustainability and service quality are integrated, it leads to improved customer loyalty, positive word-of-mouth, and repeat visits.

Furthermore, the study shows that customers are more likely to support tourism companies that promote sustainability through responsible policies and transparent communication.

Companies like Tourism an strengthen their competitive advantage by implementing sustainable tourism strategies and educating tourists about responsible travel behavior.

Overall, the discussion suggests that sustainable tourism practices are an important driver of customer satisfaction in the tourism industry. By continuing to develop environmentally friendly and socially responsible tourism services, companies can improve customer experiences while also contributing to long-term sustainability of the tourism sector.

Data analysis

The data analysis is based on responses from 193 participants, with a majority belonging to the 21–30 age group (53%) and a fairly balanced gender distribution . Most respondents travel occasionally rather than frequently, and preferences for domestic and international travel are almost equal. This indicates a young and moderately active travel population with diverse travel interests.

Regarding sustainable tourism practices, the analysis shows an overall positive perception among respondents. A majority agree that tourism companies follow eco-friendly practices such as energy conservation, water conservation, local sourcing, and eco-friendly transportation. However, in many cases, a significant portion of respondents remain neutral, suggesting limited awareness or unclear understanding of these practices. Environmental responsibility and sustainability initiatives are generally viewed favorably, but there is still some level of disagreement, indicating scope for improvement in implementation and communication.

In terms of customer satisfaction and service quality, most respondents believe that sustainable practices enhance service quality and overall tourist experience. A large percentage expressed satisfaction with eco-friendly destinations and agreed that sustainability adds value to their travel experience. Cleanliness, environmental maintenance, and responsible waste management are also seen as important factors influencing satisfaction. Despite this positive trend, neutral responses remain high in several areas, reflecting uncertainty or inconsistent experiences.

Finally, behavioral intentions such as revisit and recommendation are strongly influenced by sustainable practices. A majority of respondents indicated that they are willing to revisit and recommend eco-friendly destinations. Many also expressed support for sustainability initiatives like renewable energy, community involvement, and stricter environmental regulations. However, the presence of neutral and some negative responses highlights the need for better awareness, improved service delivery, and stronger sustainability efforts by tourism companies.

CONCLUSION:

The study focuses on the role of sustainable tourism practices in customer satisfaction with respect to Tourism Company. The study reveals that sustainability has become an essential factor in the tourism industry as customers are becoming aware of the importance of environmental protection and sustainable tourism practices. Sustainable tourism plays an important role in providing customers with an enhanced experience. The study reveals that when tourism organizations incorporate sustainable strategies and service quality, it can positively affect customer satisfaction and loyalty. Customers prefer to choose tourism organizations that show responsibility towards the environment and society. This not only improves the image of the company, but it also increases customer loyalty and recommendations.

It can be concluded that sustainable tourism plays an important role in enhancing customer satisfaction in the tourism industry.

Tourism Company can improve its customer satisfaction and success by focusing on sustainable tourism strategies and achieving success and growth in the tourism industry.

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From Profit to Purpose: The Evolution of Corporate Sustainability Governance in the Modern Era

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ABSTRACT

In today's era, the concept of sustainability has evolved as the fundamental principle that guides the strategies of corporations, witnessing a significant paradigm shift from the conventional profit-oriented approach to governance based on the concept of purpose. The worsening environmental degradation, the prevalence of social inequality, and economic uncertainty have forced corporations to think critically about their role in society and have encouraged the adoption of governance structures that balance economic performance with environmental and social sustainability. This is a conceptual paper that relies on the literature and scholarly insights to explain the link between corporate governance and sustainability and analyse the ever-changing perspectives offered by scholars and researchers in the area. In the modern world, there is an increased focus on corporate governance in the world of business; however, the reasons behind the increased focus on the topic remain unknown. The objective of the paper is to shed light on the ever-changing trend. In spite of the developments in the area, there is still much to be achieved, and the main reason is the lack of uniform international guidelines on sustainability reporting. Small and medium-sized enterprises face the challenge of resource constraints that hinder the implementation of sustainability governance. The findings show that there has been significant progress around corporate sustainability governance through increased stakeholder engagement, transparency through sustainability reporting, and the incorporation of Environmental, Social, and Governance (ESG) considerations into the decision-making process of the firm. The commitment and organizational culture of the leadership are critical success factors in the incorporation of sustainability into the strategies of the firm. Global initiatives such as the Sustainable Development Goals (SDGs) and the rise of institutional investors have increased the need for responsible and ethical business behaviour. In conclusion, the incorporation of sustainability into the governance structure of the firm is essential and has become indispensable in the modern world

Keywords : *Corporate Sustainability Governance, Purpose-Driven Business, Sustainable Commerce, Environmental, Social, And Governance (ESG)*

INTRODUCTION

Historically, the only aim of firms was to make profits and create wealth for their shareholders. In traditional theories of corporations, firms were considered to be efficient producers that aimed to create wealth without any concern for society or the environment. However, even during the initial periods of industrialization, business leaders recognized the role of businesses within society. For example, business leaders like Henry Ford believed that businesses should not only aim to make money

but should also strive to serve society as a whole. In a similar context, Jamshedji Tata provided examples of purpose-driven businesses during the initial periods of industrialization when businesses like Tata used their profits to create social welfare through charitable trusts.

However, the transition from the traditional approach of making profits to the modern approach of creating values within society was achieved during the late twentieth century when the importance of socially responsible business practices became more important. In the past, business was only used as a means to create maximum shareholders' wealth without any concern for society or the environment. However, during the 1970s and 1980s, the concept of corporate social responsibility was introduced to the world of business when the importance of businesses within society was first recognized. The introduction of stakeholder theory provided a breakthrough to the traditional approach of making profits by recognizing the importance of stakeholders within society.

The corporate crisis also played a crucial role in the development of the above transformation. The Deepwater Horizon oil spill of 2010 is the biggest marine oil spill in the history of the world. This episode is a real-life example of the significance of corporate social responsibility. This incident emphasizes the significance of corporate social responsibility. The incident shows how the focus of profit maximization led to the creation of social and environmental hazards. Thus, organizations slowly started incorporating the concept of sustainability in their corporate governance structures for the future

Corporate sustainability governance has thus emerged as a concept as organizations increasingly recognize their corporate social responsibilities and obligations towards sustainability. In the past, corporate social responsibilities and obligations were only reflected by corporate social responsibility (CSR) activities such as charity works and corporate social activities, among others. As environmental concerns increased and corporate entities had to become more responsible towards their stakeholders, corporate sustainability emerged as an important part of corporate planning and decision-making processes. This has thus led to the development of Environmental, Social, and Governance (ESG) frameworks that promote transparency and responsible corporate governance practices. This is thus a significant move towards corporate sustainability.

This is supported by literature as well, as it reflects a transition from a profit-driven corporate governance approach to sustainability-driven corporate governance with ESG as an integral part. Sustainability reporting standards and ESG-related investments have thus proved to be successful in improving transparency and corporate performance among multinational corporations (MNCs); however, the scope for SMEs to implement sustainability strategies is

more limited (Burch, 2018; Cherkasova & Nenuzhenko, 2022; ElAlfy & Weber, 2019). Moreover, literature reflects the importance of sustainable finance, international policy frameworks, digital governance, and other sociotechnical aspects in corporate sustainability (Bongaerts et al., 2020; Ismail, 2020; Oláh et al., 2019, 2023).

This change from a profit-centric to a purpose-driven enterprise model was not an overnight change but a series of key events that marked the transition to the modern era of purpose-driven enterprises. With the increasing issues of environmental degradation, climate change, and social inequality in the late twentieth and early twenty-first centuries, the world became even more watchful of the role that corporations were playing. No longer were they seen as purely economic drivers but also as forces that could shape the world to a greater degree



Figure 1: Identification of key factors

. With the dawn of the 2000s, the world witnessed the advent of purpose-driven enterprises like Patagonia and TOMS that incorporated social impact into the very fabric of their businesses. With the establishment of the B Corporation movement in 2006, the world witnessed the formalization of the shift to a purpose-driven enterprise model by certifying companies that were meeting the stringent

requirements for social and environmental performance. In 2010, the chief executive officer of Unilever, Paul Polman, launched the Sustainable Living Plan by integrating sustainability into the very heart of the corporation. These changes have occurred in conjunction with other global initiatives, including the development of Environmental, Social, and Governance (ESG) investing and the introduction of the United Nations Sustainable Development Goals (SDGs) in 2015. These changes have reinforced the need for businesses to realize that their prosperity is impossible in an environment where social and environmental systems are no longer succeeding.

Despite the growing awareness of the importance of corporate sustainability and ESG reporting, there are still large gaps that exist. The lack of global reporting standards makes the reporting process less transparent, and small and medium-sized businesses face financial and governance issues in the adoption of sustainable practices. Further, the lack of guidelines for integrating sustainability into the governance system makes the practices fragmented.

LITERATURE REVIEW

The term sustainable development has gained significant international recognition after the United Nations adopted the Sustainable Development Goals (SDGs) in 2015. Literature suggests that international cooperation is a prerequisite for achieving these objectives, as is a strong financial mechanism (Morris, 2017). The move towards sustainable development is an

expansion of international development policies. It is also an emphasis on cooperation among the main economic powerhouses, including the United States and China. Zhang Haibing (2017) states that Chinese foreign aid is no longer limited to bilateral aid but encompasses a variety of development cooperation modes, including infrastructure investment, as well as cooperation with multiple partners.

Literature has also focused on the contribution of SMEs to the promotion of sustainable innovation. According to Burch (2018), SMEs are motivated towards sustainability because they are closely related to their societies. However, they face challenges such as financial constraints, lack of technical expertise, and insufficient policy support.

Simultaneously, Burch (2018) delivers an exhaustive study on the function played by SMEs in facilitating or hindering sustainability transitions, emphasizing the critical link between motivation and capacity to act. Through her study, based on a large-scale survey among SMEs in Canada in the Greater Toronto Area and Metropolitan Vancouver, the author reveals how the size, industry type, and community embedding of firms influence their sustainability-related motivations. In her research, Burch argues that, contrary to the conventional understanding, the reputation of the community is considered the key motivator for SMEs to act upon sustainability-related initiatives rather than cost reduction or profit maximization strategies.

Corporate responsibility and sustainability reporting have become two of the most significant aspects of modern-day business operations. Sustainability reporting helps in conveying the organizational performance in terms of environment, society, and economy, thereby promoting greater transparency and accountability through the application of the triple bottom line approach. However, the results of the study by El Alfy and Weber (2019) indicate that many organisations are not able to build effective linkages between the dimensions of sustainability.

Literature has also focused on the communication of sustainability in industries. Berry (2019) identifies the metaphors that influence the communication of sustainability in the oil sands industry, including sustainability as balance, a journey, or an exchange. The rapid growth of e-commerce has also posed sustainability challenges to businesses. Oláh et al. (2019) argue that businesses should balance environmental, social, and economic sustainability while addressing trade-offs between the three aspects to promote sustainable growth.

Additionally, analytical perspectives borrowed from international research on global governance reveal that e-commerce enterprises play a critical role in reshaping the global economic order with their growth reflecting an increasingly complex interrelationship with inequality and sustainable development (IISD, 2019). According to the International Institute for Sustainable Development, e-commerce alone accounted for a USD 29 trillion industry at the time of publication, with an estimated 1.3 billion people participating in online shopping activities across the globe. Through her study, the author reveals how the structures of the global digital economy's governance—data flows, source codes, and electronic transmissions—pose critical challenges to the ability of developing nations to compete equitably in the global marketplace.

Schilling et al. (2020) discusses the term urban sustainability, its importance, and its contribution to reviving small- and mid-sized legacy cities. The study suggests that urban sustainability is a mix of social justice, economic growth, and environmental protection, resulting in a strong, balanced, and sustainable urban community. The study also

discusses how urban communities can play a significant role in mitigating climate change, including reducing greenhouse gas emissions, increasing energy efficiency, transportation, and green infrastructure.

In their critical study on the growing market for green bonds, Bongaerts et al. (2020) put forward the idea of using green certificates as an alternative financial instrument for the promotion of sustainable investments. The study reveals that, although green bonds have become increasingly important for the promotion of sustainable investments, the current framework for green bonds might limit the market for these instruments, considering that the costs of financing are often higher due to the differentiation of green bonds from other conventional bonds. The authors suggest that the issuance of conventional bonds and green certificates could provide an alternative solution to the limitations of green bonds.

Sustainability has been recognised as an important issue in both academic discourse and policy debates, especially in relation to environmental protection, corporate responsibility, and economic growth. Global crises underscore the relationship between human activities and the environment. As emphasised by the Institute for Global Environmental Strategies (2020), environmental concerns that include environmental degradation, biodiversity loss, and the increasing interaction between humans and the environment underscore the need to integrate economic growth with environmental protection in pursuit of sustainability.

Contemporary research conducted by Cherkasova and Nenuzhenko (2022) focused on the association between investments in Environmental, Social, and Governance (ESG) practices and financial performance within multinational firms. This research highlights the significance of ESG practices, such as reducing environmental emissions, promoting employee satisfaction, and enhancing corporate governance, in the development of stakeholder trust and the sustainability of firms. Based on firm-level data from various global regions, the authors of the study emphasize that the effect of ESG investments depends on the geographic location of the firm and the level of international exposure Moreover, Sustainable Development Solutions Network (2022) examines the assessment of the contribution of the expansion of sustainable finance in the face of global environmental challenges and the achievement of Sustainable Development Goals (SDGs). It shows that financial institutions and investors play an important role as catalysts in promoting the achievement of environmentally sustainable and socially responsible initiatives. It describes how the European Green Deal is used as an initiative in engaging the private sector in climate-related initiatives.

Significant literature indicates that the rapid development of e-commerce poses a serious environmental challenge, especially for developing countries whose environmental policies are not yet well developed (Oláh et al., 2023). The shift to e-commerce not only increases the logistical requirements of shipping goods to customers frequently but also contributes to environmental degradation through the use of non-recyclable materials for packaging. Oláh et al. (2023) indicate that the implementation of more environmentally friendly processes results in positive environmental outcomes. Their survey findings indicate that two out of every three customers view the implementation of sustainability policies by e-commerce companies as an important factor. Their research also indicates that most countries in Africa, excluding Kenya, have implemented a few sustainability policies for e-commerce companies. This shows a major governance challenge for the developing world.

However, the structural issues persist. Oláh et al. (2023) highlight the need for proper guidelines on sustainability issues like packaging, shipping, or production. The long-term prospects of the development of e-commerce in the developing world may be threatened. Burch (2018) also highlights the need for sustainability. Though the majority of SMEs understand the need for the development of sustainable e-commerce, the practical challenges lie in the fact that time, money, or workforce is lacking. The IISD (2019) adds that the smaller or less-developed countries will be forced to sign trade agreements that will favour the larger tech companies in the case of data ownership. The existing literature suggests that the development of sustainable e-commerce is not just the responsibility of the companies or the government; rather, all stakeholders must come together to achieve the goal.

Researchers have also focused on the cultural aspect of sustainability. Wagner and Andreas argue that sustainability is not only a technological or economic issue but also a cultural issue that affects the values and behaviour of societies. This calls for the development of a broader culture of sustainability.

In conclusion, it is apparent that corporate governance has shifted from an exclusive profit-driven focus to an approach that considers sustainability in addition to ESG. However, it is apparent that weaknesses in the system, such as the absence of universal reporting standards and the challenges facing SMEs in adopting sustainable practices, further emphasize the need for an

improved governance system.

RESEARCH GAP

- Framework and Integration**:** The literature suggests that there are limited effective frameworks available to integrate sustainability into the core governance structure, with many organisations opting to pursue isolated sustainability initiatives rather than transitioning from profit-based to purpose-based governance structures.
- Reporting and Standardisation Gap: The absence of universally applicable reporting standards and the adoption of isolated frameworks such as GRI and TCFD have led to inconsistencies in evaluating the ESG initiatives taken by organisations.
- SME Capability Gap: The primary challenge faced by SMEs is their research and practical capability gaps, largely due to financial constraints, which have led to gaps in the implementation of advanced systems and structures in global governance.

Possible avenues for future research could be an in-depth study of the role of small and medium-sized enterprises in sustainability transitions. While small and medium-sized enterprises may be interested in supporting sustainability initiatives, they often face various hurdles that limit their potential to implement large-scale sustainable approaches. More research could be conducted to identify various policy interventions to assist small and medium-sized enterprises in integrating sustainability into their governance.

RESEARCH METHODS

The objective of this study is to examine the evolution of corporate governance from a profit-oriented approach to a purpose-driven model emphasizing sustainability. Consequently, the study adopts a conceptual approach based on a systematic literature review, which involves the analysis of secondary data sources and existing scholarly studies. Several researchers have asserted that conducting a systematic literature review, along with the examination of secondary data, enhances the understanding of complex research topics. This approach ensures that the study is grounded in credible academic insights, as it enables the identification, analysis, interpretation, and synthesis of existing literature related to corporate governance, sustainability, and Environmental, Social, and Governance (ESG) practices. Through this method, the research aims to understand the evolving perspectives on how organisations are transitioning from traditional profit-centred governance structures toward purpose-driven and sustainable business practices

FINDINGS AND SUGGESTIONS

Corporate Sustainability Governance is the shift from the focus on making money to a purpose-driven business. This change has now moved from being a peripheral charity project in the 21st century to a business imperative. The main goal here is a 'Purpose-Driven' model. This means that the business's success can now be judged on how it benefits the wider society and the environment rather than just its profits.

Economic Drivers of a Purpose-Driven Business Mode

The way modern businesses manage their resources and risks is the key to their success. Using ESG information helps the leaders to make informed decisions. The focus of the boards and leaders now lies in long-term risks such as climate change or social issues rather than profits. This change helps them adapt to a future in which the world is driven by ethical standards. The Three Pillars are ESG, SDGs, and TBL

The three major frameworks that led to this change:

- SDGs (Sustainable Development Goals): This is the broader picture of the global development goals. This shows the long-term sustainability goals that organisations or governments want to attain. This shows the direction that the organisation or government wants to take in terms of sustainability.
- ESG (Environmental, Social, and Governance): This shows the criteria that are used to measure the performance of how well the organisation implements the sustainability concept. This shows the ways or methods that are used to implement the sustainability goals.



Figure 2: The main frameworks that led to transformation

- TBL (Triple Bottom Line): This shows the change from one goal to three different goals. This shows the change from one goal (Profit) to another (People, Planet, Profit). This shows how the concept of 'Purpose' can be measured instead of the one goal.

Transparency and Reporting

Modern governance promotes transparency through the explicit reporting of the business's environmental and social impacts. This approach to sustainability reporting makes the business accountable to the stakeholders and the public. This approach goes beyond the conventional approach of simply complying with the rules. This approach simplifies the reporting of long-term value creation. Furthermore, this reporting approach will allow business leaders to focus on developing strategies that ensure the long-term sustainability of the business while satisfying the interests of investors.

The SME Gap: Barriers to Success

The key finding was that Small and Medium-Sized Enterprises (SMEs) are at a disadvantage. Despite the growing interest of small businesses in the concept of purpose-driven business models, SMEs face huge barriers such as high costs, lack of technical experts, and lack of support from government policies. Most of the policies are designed to favour large-sized organizations. For the global economy to change, we need to have a simpler set of rules that small businesses can actually follow. We need to have a balanced platform.

Leadership as the Real Engine of Change

However, it is important to note that rules and regulations alone are not enough for the change to occur in the economy. A major shift is required, which is possible only when the "Purpose" is embedded in the DNA of the companies. Studies suggest that if the executive compensation is tied to sustainability goals rather than the stock price or profits, the organization is more likely to achieve better performance. This indicates that the shift from "Profit" to "Purpose" requires a shift in the organizational mindset as well as the rules.:

The study also identifies that the absence of global sustainability regulations is also acting as a hindrance to the proper implementation of corporate sustainability governance. Therefore, it is also recommended that global organizations should engage in greater cooperation to ensure that global sustainability reporting guidelines are developed, such as those recommended by the International Sustainability Standards Board (ISSB). Such global guidelines will help in making the reporting of sustainability performance transparent, enabling organizations to be compared in an equitable manner, and enhancing the overall credibility of corporate sustainability reporting. Moreover, it is also recommended that organizations should not treat sustainability as just another public relations or corporate social responsibility activity but should ensure that it is incorporated in their overall corporate governance systems to ensure that purpose-driven business models are developed by organizations.

Furthermore, it is also recommended by the study that greater support from the government side is also needed to ensure that organizations are able to overcome the sustainability issues faced by small and medium-sized enterprises. Therefore, it is recommended that since small and medium-sized enterprises are generally found to be financially constrained in their operations, greater support should be provided to these organizations to overcome their sustainability issues. At the same time, it is also recommended that organizations should ensure that their overall corporate governance systems are inclusive in nature by engaging stakeholders in their decision-making systems to ensure that collaborative sustainability efforts are made by organizations in their respective industries. Moreover, it is also recommended that organizations should also be encouraged to adopt sustainable business practices by financial institutions and investors to ensure that global sustainability objectives are achieved by organizations in their respective industries by developing sector-specific sustainability guidelines for organizations.

CONCLUSION

The evolution of corporate sustainability governance can be identified as a paradigm shift from conventional approaches to profit maximization to a purpose-based approach that encompasses environmental stewardship and social responsibility as key strategic drivers. By moving beyond the periphery of philanthropy to the mainstream adoption of environmental, social, and governance (ESG), triple bottom line (TBL), and sustainable development goals (SDG) frameworks, modern organizations are now leveraging the concept of "purpose" as a key metric to ensure long-term sustainability. However, this evolution faces major structural barriers such as resource limitations and policy disadvantages that impact small and medium-sized enterprises (SMEs) as well as the continued challenge of "greenwashing" through inconsistent

global reporting standards. However, to overcome these challenges, it is not simply a matter of complying with regulations; rather, it necessitates a fundamental change to the organizational DNA that aligns executive incentives away from stock price volatility to sustainability-based metrics. Ultimately, to ensure that the global economy can operate from a balanced position that promotes ethical business practices, international cooperation must work to ensure that mandatory standards are adopted that allow organizations of all sizes to prioritize societal well-being as the key driver of long-term business success.

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