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Recognizing the need for research for exploring new business models in the changing business scenario as well as developing new pedagogy in management, and for creating an influence on the academics as well as corporate thinkers, the institute embarked upon publication of its journal, *Review of Professional Management: A Journal of Management*, way back in 2003 and has been published regularly ever since. The Editorial Advisory Board of the journal comprises eminent academics from universities and business schools from across geographies. It is a biannual peer-reviewed journal. It is an open access journal and all the publications of the journal are licensed under Creative Commons. The journal follows guidelines on publication ethics in accordance with The Committee on Publication Ethics (COPE).

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Review of Professional Management: A Journal of Management, a bi-annual peer-reviewed journal of New Delhi Institute of Management, provides a platform to academics, researchers, practitioners, and professionals from public, private and government sectors to share their original research, innovative practices and articles with Indian and international perspective that shape policy or governance or functioning of an organisation. The journal publishes conceptual, analytical, empirical, and perspective articles that significantly contribute to theory, practice or policymaking in all the functional areas of management and allied subjects.

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Volume 24 Number 1 June 2026

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Review of Professional Management:
A Journal of Management
24(1) 7–8, 2026

DOI: 10.1177/09728686261460509
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Artificial intelligence (AI) is affecting the nature of work in every sector and is also transforming human resource management functions across the employee lifecycle. It is automating routine work, improving decision-making, and enabling more personalized employee experiences. Its large-scale adoption is to increase efficiency and boost productivity which impacts how companies attract, hire, retain, and skill their employees.

Most people put AI under a common umbrella but there are different technologies used for a specific task. Artificial intelligence in human resource management can be understood by looking at how it works, what it can do, and how it adds value to organisations. From a technology perspective, AI in HR uses tools like machine learning to analyse employee data, natural language processing to screen resumes or power chatbots, and computer vision for tasks like identity verification. These technologies are often combined in modern HR systems, such as recruitment platforms that use AI to search, evaluate, and communicate with candidates. In terms of capability, most HR applications use narrow AI, implying they are designed for specific tasks like hiring, performance tracking, or employee engagement. Functionally, most HR AI systems learn from past data to improve decisions over time, such as predicting employee turnover or recommending training programmes. Most importantly, from a business perspective, AI in HR creates value in different ways: generative AI helps draft job descriptions or training materials, predictive AI supports workforce planning, assistive AI improves employee productivity, conversational AI enhances employee support through chatbots, and emerging agentic AI can automate entire HR workflows, such as onboarding or performance management, with minimal human involvement (Brandon Most, 2026).

The main benefit of AI in HRM is efficiency. By automating repetitive and time-consuming tasks, AI frees HR professionals to focus on strategic and human-centered work. It also improves consistency, speed, and the ability to process large volumes of data, which can strengthen hiring and talent decisions (Nelson Connects, 2025).

Despite bright prospects, AI in HRM raises pivotal concerns at the workplace. Research highlights risks such as algorithmic bias, limited transparency, resistance to change, and the possible dehumanization of workplace relationships. If AI systems are trained on biased data, they may provide unfair hiring or promotion outcomes. There are also ethical concerns around privacy and over-reliance on automated decision-making, especially in sensitive HR functions (Aguinis et. al. 2024).

Hence, AI can be used as an enabler at the workplace rather than a replacement for HR professionals. It needs to be introduced in a phased manner preparing employees and organisations with ethical considerations. AI needs to be introduced in a phased manner, so employees and organizations can prepare gradually, and ethical safeguards need to be built in from the start. A phased rollout reduces disruption, supports learning, and gives HR time to test and adjust to new workflows.

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References

Aguinis, H. et al. 2024. ORGDYN 53 (2024) 10102. https://www.hermanaguinis.com/pdf/ODAI.pdf

Most, Brandon. 2026, May 21. AI and Technology. https://www.gosearch.ai/blog/breakdown-of-different-ai-types-and-models/

Nelson Connects. 2025, April 10. The Benefits and Challenges of Using AI in Human Resources https://www.nelsonconnects.com/learning-center/blogs/the-benefits-and-challenges-of-using-ai-in-human-resources

Radha R. Sharma
Editor-in-Chief

Research Paper

The Cultural-capability Nexus: Reconceptualising Lean Six Sigma Preparedness as a Strategic Enabler of Supply Chain Agility

Review of Professional Management:
A Journal of Management
24(1) 9–25, 2026

DOI: 10.1177/09728686261445287
rpm.ndimdelhi.org

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Abstract

This study investigates the 'cultural-capability nexus', examining how organisational readiness, defined through leadership commitment, employee empowerment and communicative transparency, acts as a primary driver for Lean Six Sigma (LSS) effectiveness and supply chain capacity optimisation. While traditional operations research focuses on technical throughput, this article conceptualises capacity as a strategic outcome of sociotechnical alignment. A quantitative cross-sectional survey was conducted among 378 supply chain professionals within the Indian manufacturing and logistics sectors. The sample featured a predominantly female (65.9%) and highly experienced workforce, with nearly 80% of respondents possessing over 5 years of industry tenure. Preliminary interviews were utilised to ensure content validity, followed by a structured questionnaire analysed via IBM SPSS (v28.0). Statistical analysis confirms that organisational barriers, specifically resistance to change (M = 4.16) and fragmented project communication (M = 4.25), significantly impede capacity gains. Conversely, the structural model validated six hypotheses, demonstrating that employee empowerment and involvement (EEI) and leadership support (LMS) are critical antecedents to a continuous improvement culture (CIC),

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with path coefficients exceeding 1.0. Measurement model results (CR > 0.97; AVE > 0.95) and the Fornell–Larcker criterion confirmed high internal consistency and discriminant validity. The findings provide a roadmap for managers to transition LSS from a perceived 'unrecognised burden' to a core operational competency. This research bridges the gap between organisational behaviour and operations management by empirically validating cultural readiness as the vital link in the capacity optimisation process.

Keywords

Lean Six Sigma, organisational culture, capacity management, strategic preparedness, supply chain optimisation, operational excellence, change management

Received 20 October 2025; accepted 02 April 2026

Introduction

In the contemporary industrial landscape, the ability to balance supply and demand amidst global disruptions is no longer merely an operational goal—it is a survival mandate. At the core of this balance lies capacity optimisation, which this study defines as the primary strategic outcome of integrated resource alignment and process efficiency. Despite its criticality, many firms suffer from 'capacity-mismatch', leading to either prohibitive overhead costs or lost revenue opportunities. While traditional operations literature focuses on the technical throughput of machinery and systems, this research argues that optimised capacity is fundamentally a sociotechnical achievement, rooted in the 'Cultural-capability nexus'. The implementation of Lean Six Sigma (LSS) has long been a preferred methodology for reducing variability and enhancing output. However, the high failure rate of LSS initiatives suggests that technical preparedness alone is insufficient. As noted by Christopher (2000), the effectiveness of any operational strategy is contingent upon the organisation's ability to respond to market signals with speed and precision—a trait often referred to as agility. In this context, agility serves as the vital link that enables a firm to transition from static resource management to dynamic capacity optimisation.

This study addresses a significant gap in the literature: the 'black box' of how internal organisational readiness, comprising leadership commitment, employee empowerment and communication, translates into measurable capacity sustainability. By moving beyond the 'firm-as-actor' perspective, we investigate how individual-level cultural readiness underpins macro-level capacity outcomes. Using a quantitative approach, this article seeks to theorise and validate a framework where cultural preparedness acts as the primary driver for LSS-enabled capacity excellence. Consequently, this research provides managers with a roadmap to treat capacity management not as a technical constraint, but as a dynamic result of socio-technical alignment.

Research Questions and Objectives

Research Questions

RQ1: To what extent do specific dimensions of organisational culture, namely leadership advocacy, communicative transparency and employee empowerment, influence the efficacy of LSS initiatives in optimising supply chain capacity?

RQ2: Which cultural antecedents serve as critical success factors (CSFs), and conversely, which sociotechnical barriers act as primary inhibitors to sustainable capacity management?

Research Objectives

The primary aim of this study is to evaluate the 'Cultural-Capability Nexus' within the supply chain. Specifically, the research seeks:

- To identify and operationalise the key dimensions of organisational culture that underpin LSS maturity.
- To empirically determine the significant cultural and structural obstructions that impede capacity optimisation.
- To analyse the strategic integration of LSS methodologies within contemporary supply chain management frameworks.

Review of Literature

A robust body of literature explores the intersection of organisational culture and the success of quality and process improvement initiatives. This review is structured to first address the foundational interface between culture and LSS, followed by its specific application within the supply chain, and finally, its impact on capacity management. This synthesis provides a comprehensive overview of 40 influential articles and seminal texts examining the convergence of organisational culture, LSS and supply chain capacity optimisation. The sources are organised to highlight key theoretical developments and the evolution of research within this field.

Organisational Culture and LSS

Diverse studies identify senior management commitment as a CSF for LSS. Top-level administration must champion the movement, allocate necessary resources and communicate a coherent strategic vision. Without this visible support, practitioners may perceive LSS as a transient management fad. Another vital cultural dimension is employee empowerment and participation. When frontline agents are granted the autonomy and training to engage in improvement projects, they are more likely to internalise the change and contribute innovative solutions. Conversely, hierarchical or bureaucratic cultures that resist change and discourage bottom-up feedback often result in the stagnation of LSS initiatives (Breyfogle, 2003; Carnell, 2004).

Seminal research underscores the profound impact of organisational culture on the efficacy of LSS. Antony (2019) and Sroufe (2017) emphasise that a culture prioritising data-driven decision-making and continuous improvement is essential. Zu and Fredendall (2010) argue that supply chain integration is fundamental to LSS success, with internal cohesion and external responsiveness serving as vital cultural pillars. Furthermore, Liker (2004) posits that a culture centred on human capital and a persistent commitment to incremental improvement—termed *Kaizen*—underpins operational excellence. Carnell (2004) cautions that in the absence of a supportive culture, LSS devolves into a rigid framework executed by disengaged staff, highlighting the necessity of robust change management. Similarly, Achanga et al. (2006) observe that cultural transformation and employee commitment are central to sustainable Lean practices, while Srivastava (2007) asserts that successful strategic shifts within the supply chain depend upon a transparent and collaborative environment.

LSS in Supply Chain Management

The application of LSS within supply chains differs significantly from traditional manufacturing contexts; it necessitates cross-functional collaboration and a holistic view of the entire value stream, from raw material procurement to end-customer delivery. Research demonstrates that LSS can optimise order fulfilment, strengthen supplier relationships and reduce inventory levels (Zu & Fredendall, 2010). However, achieving these benefits is contingent upon a collaborative culture that dismantles functional silos between procurement, manufacturing and logistics. Without shared trust and a unified understanding, efforts to streamline the supply chain remain fragmented.

Recent scholarship reinforces the strong correlation between successful LSS deployment and a resilient hierarchical culture. Gomaa (2023, 2024) indicates that an integrated LSS framework, supported by a culture of continuous improvement, yields significant gains in efficiency and lead-time reduction. Roh et al. (2014) and Huo and Wang (2012) state that a collaborative and agile culture, rooted in trust and common objectives, is indispensable for effective supply chain integration. Ahlstrom (1998) characterises Lean implementation as a dynamic evolutionary process rather than an isolated event. Case studies by Lopes et al. (2015) and Lyons et al. (2011) emphasise the need for a culture of shared responsibility and collaborative problem-solving. Moreover, Vlachos (2015) provides empirical evidence demonstrating that culture acts as a mediator, directly influencing the extent to which lean strategies enhance supply chain performance (Cadden et al., 2013).

Critical Success Factors and Barriers

The implementation of LSS is frequently hindered by organisational culture, often leading to project failure. Gomaa (2022) identifies cultural friction as a primary deterrent to LSS initiatives in supply chains. Research by Losonci et al. (2017) and Breyfogle (2003) demonstrates that projects may fail—despite technical competence—if the social context is neglected. Scherrer et al. (2009) illustrate this through a case study where initial Lean adoption failed due to cultural unreadiness, succeeding only after social obstacles were addressed. Antony and Psomas (2018) identify employee reluctance and insufficient administrative support as significant barriers in the service sector. Furthermore, Shah and Ward (2003) found that a Lean strategy utilising a 'practice bundle' is more effective than isolated tools, provided the organisational culture supports comprehensive process changes across the entire firm.

Leadership and Employee Empowerment

Successful LSS implementation depends heavily on leadership commitment and employee engagement. Pande et al. (2000) emphasise the sustained dedication of senior leadership as a foundational factor. Antony and Banuelas (2002) and Ben Mabrouk and Jarraya (2020) further highlight the importance of active employee engagement. Henderson and Evans (2000) note that the success of organisations like General Electric underscores the need for a culture that integrates leadership and human resource operations with LSS. Kwak and Anbari (2006) and Jeyaraman and Teo (2010) argue that management participation, training and cultural shifts are essential components of effective LSS programmes. Finally, Patel and Dhillon (2021) assert that a positive culture enhances employee engagement, which subsequently acts as a mediator between LSS methodologies and organisational performance.

Emerging Research and Future Directions

Recent research substantiates the critical link between organisational culture and LSS achievement. Zaman and Ahsan (2014) propose that LSS efficacy should be evaluated using both quantitative indicators (e.g., lead time) and qualitative cultural factors. Wiengarten et al. (2015) confirm that culture functions as a mediator between Lean techniques and operational performance. For LSS initiatives to be truly effective, they must be embedded within the fundamental standards and traditions of an organisation (Linnenluecke & Griffiths, 2010). This cultural shift may not only precede LSS but also result from it; as Brodström (2019) suggests, the long-term use of LSS technologies can foster the evolution of a continuous improvement culture (CIC). Additionally, Soni and Jain (2020) argue that a culture of participation enhances supply chain resilience, while Gomaa (2024) underscores the significance of cultural readiness when synthesising LSS with broader transformation activities like business process re-engineering (BPR).

Research Methodology

Research Design

The research instrument consists of a structured survey developed from the conceptual themes identified in the literature review. This instrument was administered to a targeted sampling frame of supply chain professionals across the manufacturing sector. To ensure measurement validity, a five-point Likert scale was employed to operationalise dimensions of organisational culture, specifically leadership support (LMS), communicative transparency and employee empowerment, alongside perceived LSS performance metrics, such as lead-time reduction and inventory turnover. The hypothesised relationships between these cultural antecedents and LSS outcomes were empirically tested using multivariate statistical techniques, including correlation analysis and structural equation modelling (SEM), to determine path coefficients and model fit.

Sample and Data Collection

The research targeted supply chain and operations professionals within the Indian manufacturing and logistics sectors. A two-stage approach was employed: first, purposive sampling was used to conduct preliminary interviews with experts from organisations renowned for their LSS maturity. These interviews served exclusively to ensure content validity and refine the survey instrument. In the second stage, a quantitative cross-sectional survey was disseminated to 400 practitioners via professional networking platforms and industry associations. To ensure data quality, the inclusion criteria required participants to possess a minimum of 3 years of professional experience in LSS implementation. Of the distributed instruments, 378 valid responses were retrieved—representing a 94.5% response rate—which constitutes the final sample size ($N = 378$). This robust dataset was subsequently subjected to multivariate statistical analysis to evaluate the hypothesised relationships.

Data Analysis

Qualitative data obtained from the preliminary interviews were analysed using thematic analysis to refine the survey constructs and ensure content validity. The primary quantitative data were processed using IBM SPSS Statistics (Version 28.0) to test the research hypotheses. This sequential approach ensured that the survey instrument was grounded in practitioner reality, thereby enhancing the construct validity and reliability of the final results. Participants within the supply chain management sector were categorised by demographic variables, including age and professional experience, to allow for a nuanced analysis of the sample population.

The demographic profile presented in Table 1 indicates that the largest age cohort among respondents is the 40–50 year range, accounting for 38.9% of the sample. Gender distribution is characterised by a female majority at 65.9%, compared to 34.1% male. Procurement professionals and demand planners represent a significant functional segment, comprising 25.1% of the total workforce.

Table 1. Demographic Background of Employees in Supply Chain Management.

Demographic Characteristics		*n* (Total = 378)	% of *n*
Age	Less than 30 years	43	11.4
	30 years–40 years	112	29.6
	40 years–50 years	147	38.9
	50 years and above	76	20.1
Gender	Male	129	34.1
	Female	249	65.9
Designation	Supply chain managers	53	14.0
	Supply chain analysts	51	13.5
	Logistics coordinators	84	22.2
	Procurement specialists	95	25.1
	Demand planners	95	25.1
Work experience	Less than 5 years	25	6.6
	5 years–10 years	152	40.2
	10 years–15 years	145	38.4
	15 years and above	56	14.8

Source: Primary data.
Note: *n* = number of respondents.

Table 2. Mean Score Analysis on Barriers in Capacity Management.

		N = 378	
Particulars	Items	Mean	*SD*
Employees in my department are resistant to changes proposed by LSS initiatives	BCM1	4.16	0.975
LSS projects are often seen as extra work that does not get rewarded	BCM2	4.16	0.935
Communication about the goals of LSS projects is often unclear	BCM3	4.25	0.931

Source: Statistically calculated data.

Regarding professional tenure, the data reflect a highly experienced personnel base: 40.2% of respondents possess 5–10 years of experience, while an additional 38.4% have 10–15 years, underscoring a high level of domain expertise within the surveyed population.

As illustrated in Table 2, the primary deterrents to LSS implementation are identified as resistance to change, inadequate incentives for supplementary labour and ambiguous communication. All three constructs yielded high mean values, reflecting a strong consensus among the 378 respondents. Specifically, a mean score of 4.16 highlights significant employee resistance to LSS-driven process enhancements. Furthermore, the perception of LSS initiatives as uncompensated or unrecognised additional work was equally prominent, also returning a mean of 4.16. The most critical challenge identified was the lack of clarity regarding project objectives and communication, which attained the highest mean score of 4.25.

The empirical results presented in Table 3 indicate that LSS significantly optimises supply chain capacity by mitigating bottlenecks, enhancing production throughput and reducing lead times. Specifically, LSS was found to most effectively alleviate constraints within logistics and delivery systems, as evidenced by the highest mean rank of 2.16. The second most significant benefit identified was the improvement of production throughput, which achieved a mean rank of 2.13. Furthermore, the reduction of supply chain lead times was ranked third, with a mean rank of 1.71. The high mean scores across all categories (4.18, 4.21 and 3.78, respectively) confirm a strong consensus among the 378 respondents that LSS initiatives are instrumental in driving capacity optimisation.

The Pearson correlation matrix presented in the heat-map (Table 4) reveals strong positive associations across all four dimensions of LSS organisational culture. Correlation coefficients exceeding 0.92 indicate a high degree of interdependence among these constructs. The most significant relationship (r = 0.979) was observed between employee empowerment and involvement (EEI) and a CIC, suggesting that an engaged workforce is a primary catalyst for sustained operational refinement. Additionally, leadership and management support (LMS) demonstrate a robust correlation (r = 0.967) with CIC, reinforcing the premise that strategic leadership is essential for institutionalising improvement mindsets. Other notable associations, such as LMS with EEI (0.958) and collaborative communication (CC) with CIC (0.952), further underscore a high level of thematic convergence within the organisational culture framework. This conceptual framework (as shown in Figure 1) illustrates the interconnected relationships between four key organizational pillars—leadership, employee empowerment, communication, and culture—mapped through six distinct hypotheses (H_1 to H_6).

The structural model results presented in Table 5 provide empirical support for all six hypothesised relationships concerning the cultural dimensions of LSS.

Table 3. Mean Score Analysis on Lean Six Sigma in a Supply Chain Capacity Management.

		N = 378		Mean	
Particulars	Items	Mean	*SD*	Rank	Ranking
LSS projects have significantly reduced lead times in our supply chain	LSS1	3.78	0.917	1.71	III
LSS has helped to increase our overall production throughput	LSS2	4.21	0.933	2.13	II
LSS has reduced bottlenecks in our logistics and distribution network	LSS3	4.18	0.913	2.16	I

Source: Statistically analysed data.

Table 4. Heat-map Correlation for Key Dimensions of Organisational Culture in Lean Six Sigma.

Particulars	LMS	EEI	CC	CIC
Leadership and management support (LMS)	1	0.958	0.937	0.967
Employee empowerment and involvement (EEI)	0.958	1	0.941	0.979
Communication and collaboration (CC)	0.937	0.941	1	0.952
Continuous improvement culture (CIC)	0.967	0.979	0.952	1

Source: Statistically analysed data.

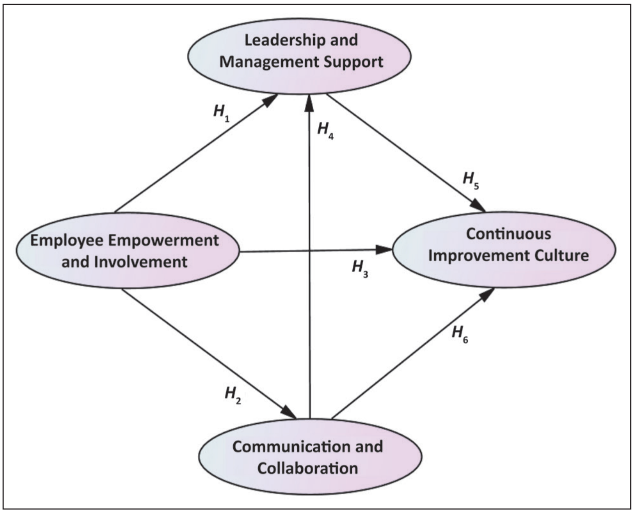

Figure 1. Result of Hypotheses Testing for Key Dimensions of Organisational Culture in Lean Six Sigma.

Source: Statistically analysed data.

Table 5. Result of Hypotheses Testing for Key Dimensions of Organisational Culture in Lean Six Sigma.

Hypotheses	Proposed Hypothesis Relationship	Path Coefficients	S.E.	*t*-statistics	*p* Value	Hypothesis Test Results
H_1	Employee empowerment and involvement → Leadership and management support	1.071	0.079	13.574	.000	Supported
H_2	Employee empowerment and involvement → Communication and collaboration	1.075	0.079	13.562	.016	Supported
H_3	Employee empowerment and involvement → Continuous improvement culture	1.115	0.082	13.584	.040	Supported
H_4	Communication and collaboration → Leadership and management support	1.050	0.077	13.607	.000	Supported
H_5	Leadership and management support → Continuous improvement culture	1.078	0.080	13.563	.022	Supported
H_6	Communication and collaboration → Continuous improvement culture	1.094	0.080	13.629	.002	Supported

Source: Statistically analysed data.

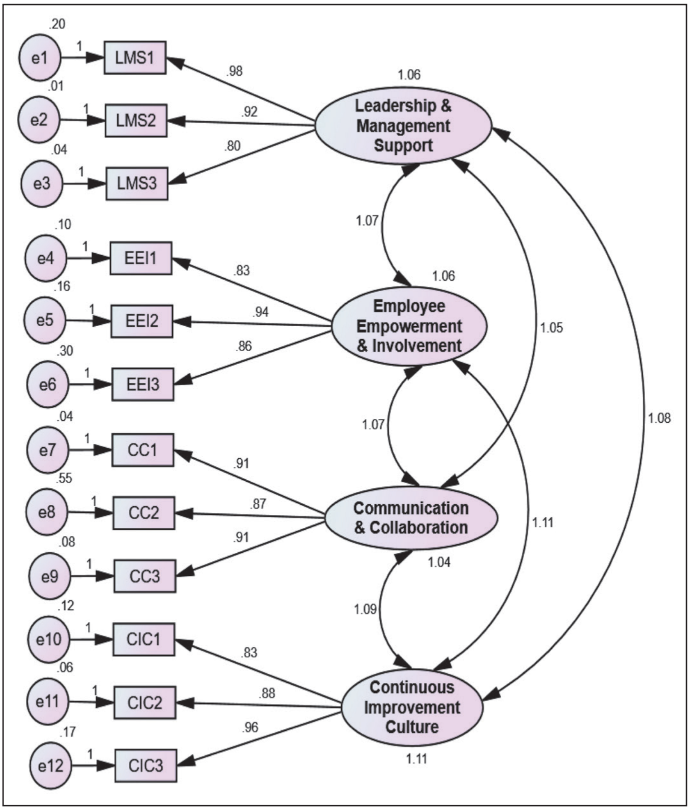

Figure 2. Measurement Model of Key Dimensions of Organisational Culture in Lean Six Sigma.

Source: Model framed during research study.

The analysis confirms that EEI serves as a primary antecedent as a primary antecedent, exerting a significant positive influence on LMS (beta = 1.071), communication and collaboration (CC) (beta = 1.075), and a CIC (beta = 1.115). Furthermore, CC was found to significantly impact both LMS (beta = 1.050) and CIC (beta = 1.094). Finally, the path from LMS to CIC demonstrated a strong positive effect (Path Coefficient: 1.078). All hypothesised paths reached statistical significance with *p* values consistently below the .05 threshold, validating the integrated nature of the proposed sociotechnical framework.

This measurement model (as shown in Figure 2) illustrates the multidimensional structure of organizational culture in a Lean Six Sigma context, specifically validating the causal links between leadership, empowerment, and communication. The results of the measurement model presented in Table 6 demonstrate high internal consistency and strong convergent validity across the four dimensions of LSS organisational culture: LMS, EEI, CC and CIC. Cronbach's alpha coefficients for the constructs range from 0.983 to 0.989, indicating robust scale reliability. These findings are further corroborated by composite reliability (CR) values ranging from 0.975 to 0.990, well above the recommended threshold.

Table 6. Measurement Model of Key Dimensions of Organisational Culture in Lean Six Sigma.

Item(s)	Factor Item	CFA Loading	Cronbach α (Item Wise)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Leadership and Management Support					
Our top management actively champions LSS initiatives	LMS1	0.980	0.985	0.975	0.952
Leaders in our organisation allocate sufficient resources (time, money, personnel) for LSS projects	LMS2	0.920	0.983		
My managers encourage me to take ownership of process improvements	LMS3	0.800	0.983		
Employee Empowerment and Involvement					
Employees at all levels are encouraged to participate in LSS projects	EEI1	0.830	0.983	0.989	0.969
I have received adequate training to contribute effectively to LSS initiatives	EEI2	0.940	0.984		
My ideas for process improvement are valued and considered by management	EEI3	0.860	0.986		
Communication and Collaboration					
There is open and transparent communication about the LSS project goals and results	CC1	0.910	0.983	0.990	0.970
Different departments (e.g., production, logistics, sales) collaborate effectively on LSS projects	CC2	0.870	0.989		
Information and data for LSS projects are easily accessible across the organisation	CC3	0.910	0.983		
Continuous Improvement Culture					
Our company's culture emphasises continuous improvement as a core value	CIC1	0.830	0.983	0.989	0.967
We celebrate both the successes and the learning from LSS projects, regardless of the outcome	CIC2	0.880	0.983		
Our organisation is proactive in identifying and solving problems, rather than being reactive	CIC3	0.960	0.984		

Source: Statistically analysed data.

Additionally, the average variance extracted (AVE) values range from 0.952 to 0.970; as these significantly exceed the 0.50 benchmark, it is confirmed that each construct accounts for a substantial proportion of item variance. Finally, confirmatory

Table 7. Discriminant Validity: Fornell–Larcker Criterion for Key Dimensions of Organisational Culture in Lean Six Sigma.

Particulars	LMS	EEI	CC	CIC
Leadership and management support (LMS)	0.975			
Employee empowerment and involvement (EEI)	0.958	0.984		
Communication and collaboration (CC)	0.937	0.941	0.985	
Continuous improvement culture (CIC)	0.967	0.979	0.952	0.983

Source: Statistically analysed data.

factor analysis (CFA) loadings range from 0.800 to 0.980, validating that the indicators effectively represent their respective latent constructs and affirming the overall reliability of the measurement instrument.

Table 7 presents the results of the Fornell–Larcker criterion analysis, which confirms the discriminant validity of the four core dimensions: LMS, EEI, CC and CIC. To satisfy this criterion, the square root of the AVE represented by the bolded diagonal values must exceed the inter-construct correlation coefficients within its respective row and column. As illustrated, the square root of the AVE for each construct consistently surpasses its correlation with all other latent variables. For instance, the square root of the AVE for LMS (0.975) is higher than its correlations with EEI (0.958), CC (0.937) and CIC (0.967). This pattern is maintained across all four dimensions, empirically validating that each construct represents a distinct and unique theoretical concept within the framework.

Findings

The demographic analysis reveals that the supply chain management workforce is predominantly female, featuring a significant concentration of procurement specialists and demand planners with substantial industry expertise. Despite the demonstrated efficacy of LSS in mitigating operational challenges and enhancing production throughput, internal organisational barriers frequently impede the realisation of its full potential. Specifically, the perception of LSS as uncompensated supplementary labour, employee resistance to change and fragmented communication regarding project objectives emerged as primary obstacles. Furthermore, the research identifies a strong correlation between successful LSS implementation and several critical cultural dimensions. A culture oriented towards continuous improvement is significantly bolstered by robust leadership advocacy, employee empowerment and cross-functional cooperation. Ultimately, the validated hypotheses and structural model results demonstrate that a supportive organisational culture is an indispensable prerequisite for the success of LSS initiatives.

Discussions and Suggestions

The findings indicate that while LSS initiatives enhance supply chain capacity by mitigating operational bottlenecks and increasing throughput, organisational constraints continue to impede their overall efficacy. Significant barriers include employee resistance to change, the perception of LSS as an ancillary or uncompensated burden, and fragmented communication channels. This study demonstrates that a culture of continuous improvement premised on leadership advocacy, employee empowerment and cross-functional collaboration is a prerequisite for strategic success. To institutionalise these gains, organisations must refine project-level communication, establish tangible incentives for engagement and ensure adequate resource allocation. By integrating staff into decision-making frameworks and providing comprehensive training, firms can redefine LSS as an indispensable operational competency rather than a discretionary responsibility.

To align with the standards of high-impact journals, this section acknowledges the study's boundaries with academic humility while providing a strategic roadmap for future researchers.

Limitations and Future Scope

Limitations of the Study

Despite the significant empirical findings, this research acknowledges several limitations that should be considered when interpreting the results. First, the study utilised a cross-sectional design, capturing organisational readiness and capacity outcomes at a single point in time. This prevents the establishment of long-term causal relationships, as cultural transformation is a longitudinal process.

Second, the geographic focus was restricted to the Indian manufacturing and logistics sectors. While this provides valuable insights into an emerging economy, the findings may not be fully generalisable to different cultural or institutional contexts, such as Western or East Asian supply chains, where organisational hierarchies and communication norms may vary.

Third, the study relied on self-reported, perceptual data from supply chain professionals. While this is appropriate for assessing organisational culture, it may introduce common method bias. Finally, the high correlation coefficients observed between cultural constructs suggest a high degree of multicollinearity, indicating that these variables are deeply intertwined and difficult to isolate in a practical setting.

Future Research Directions

Building upon the 'Cultural-Capability Nexus' framework, future research should consider several avenues:

- Longitudinal analysis: Future studies could employ a longitudinal approach to track the evolution of organisational culture and its impact on capacity optimisation over several years, providing a more robust understanding of the 'culture-to-performance' lifecycle.
- Geographic and sectoral expansion: Comparative studies between developed and developing economies would help validate the universality of

the proposed model. Additionally, applying this framework to the service or healthcare supply chains could reveal sector-specific cultural drivers.

- Integration of Industry 4.0: As supply chains become increasingly digitised, future research should investigate how Digital Readiness interacts with cultural readiness. Exploring the synergy between LSS, organisational culture, and technologies like AI or blockchain could redefine the parameters of capacity optimisation.
- Objective performance metrics: To complement the perceptual findings of this study, future research could integrate objective operational data (e.g., real-time ERP data on throughput and lead times) to provide a more holistic view of the nexus.
- Mediating/Moderating variables: Investigating moderating factors, such as firm size or market turbulence, could provide a more granular understanding of the conditions under which the cultural-capability nexus most effectively drives performance.

Boundary Conditions: Organisational Scale and Complexity

While the proposed 'Cultural-capability nexus' provides a robust framework for capacity optimisation, its application is subject to specific boundary conditions, particularly regarding organisational size and resource configuration.

Large corporations versus SMEs: In large corporations, the primary challenge to the nexus is often structural inertia and the presence of functional silos. In these environments, while 'LMS' may be formalised, the 'CC' dimension frequently suffers due to complex hierarchical layers. Consequently, LSS initiatives in large firms may be technically sound but culturally fragmented, requiring more aggressive 'Employee empowerment' to bridge the gap between executive vision and frontline execution.

Conversely, in small-to-medium enterprises (SMEs), the nexus operates under a different set of constraints. SMEs typically possess a more fluid and organic culture, which can accelerate 'CIC' due to shorter communication loops. However, they often lack the resource slack—both financial and human—to support the 'unrecognised supplementary work' of LSS. In this context, the boundary condition for success shifts from cultural alignment to resource availability. Without the 'Asset Assignment' mentioned in this study, even a highly motivated SME culture will struggle to translate readiness into measurable capacity optimisation.

Conclusion

Empirical evidence suggests that while LSS initiatives significantly optimise supply chain capacity by mitigating operational bottlenecks and enhancing throughput, their long-term sustainability is often compromised by sociocultural barriers. Critical impediments include employee resistance to organisational change, the perception of LSS as an ancillary or uncompensated burden and systemic communication failures. This study demonstrates that a culture of continuous improvement premised on robust leadership commitment, employee empowerment and cross-functional collaboration is a prerequisite for success. To institutionalise LSS, organisations must enhance project-level communication, establish clear incentives for engagement and ensure adequate resource allocation. By integrating staff into decision-making processes and providing comprehensive training, firms can transition LSS from a perceived discretionary task to an indispensable core operational competency.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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References

Achanga, P., Shehab, E., Roy, R., & Nelder, G. (2006). Critical success factors for lean implementation within SMEs. *Journal of Manufacturing Technology Management*, *17*(4), 460–474.

Ahlstrom, P. (1998). Sequences in the implementation of lean production. *European Journal of Innovation Management*, *1*(2), 89–106.

Antony, J. (2019). Six sigma and organizational culture: An empirical study. *International Journal of Quality & Reliability Management*, *36*(2), 273–289.

Antony, J., & Banuelas, R. (2002). Key ingredients for the effective implementation of a six sigma programme. *Journal of Manufacturing Technology Management*, *13*(7), 478–483.

Antony, J., & Psomas, E. (2018). Critical success factors of lean six sigma in service organizations. *The TQM Journal*, *30*(5), 577–593.

Ben Mabrouk, N., & Jarraya, B. (2020). Factors influencing the performance of supply chain management in Saudi SMEs. *Journal of Financial and Management Sciences*, *3*(1), 1–15.

Breyfogle, F. B. (2003). *Implementing six sigma: Smarter solutions using statistical methods*. Wiley.

Brodström, F. (2019). The role of lean tools in developing a culture of continuous improvement. *Total Quality Management & Business Excellence*, *30*(9–10), 1018–1033.

Cadden, T., O'Malley, S., & Prizeman, G. (2013). Organizational culture and the adoption of green supply chain management. *Management Research Review*, *36*(6), 576–593.

Carnell, B. (2004). *Managing change in organizations*. Pearson Education.

Gomaa, A. H. (2022). Lean six sigma for improving supply chain management: A literature review. *Operations and Supply Chain Management: An International Journal*, *15*(4), 415–427.

Gomaa, A. H. (2023). Improving supply chain management using lean six sigma: A case study. *Journal of Operations and Supply Chain Management*, *16*(3), 11–25.

Gomaa, A. H. (2024). Boosting supply chain effectiveness with lean six sigma. *Journal of Management and Business Review*, *7*(1), 45–60.

Henderson, K. M., & Evans, J. R. (2000). Successful implementation of six sigma: Benchmarking general electric company. *Benchmarking: An International Journal*, *7*(4), 260–282.

Huo, B., & Wang, Z. (2012). The impact of supply chain integration on firm performance. *Service Systems and Service Management (ICSSSM), 2012 9th International Conference on*, IEEE, 584–589.

Jeyaraman, K., & Teo, L. K. (2010). A conceptual framework for critical success factors of lean six sigma. *International Journal of Lean Six Sigma*, *1*(4), 282–297.

Kwaki, E., & Anbari, A. (2006). A framework for success: Critical success factors for six sigma implementation. *International Journal of Quality & Reliability Management*, *23*(1), 12–25.

Liker, J. K. (2004). *The Toyota way: 14 management principles from the world's greatest manufacturer*. McGraw-Hill.

Linnenluecke, M. K., & Griffiths, A. (2010). Corporate strategy, organizational culture and sustainability. *Journal of Corporate Citizenship*, *40*, 47–64.

Lopes, G. F., Mello, C. H. P., & Pires, S. R. I. (2015). The role of organizational culture in lean implementation: A case study in a manufacturing company. *Journal of Operations and Supply Chain Management*, *8*(2), 162–178.

Losonci, D., Demeter, K., & Szász, L. (2017). Factors influencing the success of lean implementation: Operationalizing the 'soft' side. *International Journal of Production Economics*, *185*, 162–174.

Lyons, A. C., Vidamour, K., Jain, R., & Sutherland, M. (2011). Developing an understanding of lean thinking in process industries. *Business Process Management Journal*, 17(3), 475–493.

Pande, P. S., Neuman, R. P., & Cavanagh, R. R. (2000). *The Six Sigma Way: How GE, Motorola, and Other Top Companies are Honing Their Performance*. McGraw-Hill.

Patel, G. A., & Dhillon, S. (2021). Identification and analysis of barriers to lean manufacturing implementation in SMEs. *Materials Today: Proceedings*, *47*, 3215–3221.

Roh, J., Hong, P., & Min, H. (2014). Implementation of a responsive supply chain strategy in global complexity: The case of manufacturing firms. *International Journal of Production Economics*, *147*, 198–210. (Note: Often cited as 2013 in early-access/online versions).

Scherrer-Rathje, M., Arnoscht, J., & Friese, M. (2009). Schneider's journey to lean: A case study. *International Journal of Production Economics*, *122*(2), 541–554.

Shah, R., & Ward, P. T. (2003). Lean manufacturing: Context, practice bundles, and performance. *Journal of Operations Management*, *21*(2), 129–149.

Soni, G., & Jain, V. (2020). Analysis of lean manufacturing implementation barriers in Indian SMEs. *International Journal of Productivity and Performance Management*, *69*(1), 1–22.

Srivastava, S. K. (2007). Green supply-chain management: A state-of-the-art literature review. *International Journal of Management Reviews*, *9*(1), 53–80.

Sroufe, R. (2017). Integration and organizational change towards sustainability. Journal of Cleaner Production, 162, 1634–1651.

Vlachos, I. (2015). The mediating role of organizational culture in the relationship between lean management and supply chain performance. *International Journal of Operations & Production Management*, *35*(1), 122–140.

Wiengarten, F., Pagell, M., & Fynes, B. (2015). The role of organizational culture in the relationship between lean management and operational performance. *Journal of Operations Management*, *34–35*, 1–13.

Zaman, K. A., & Ahsan, A. M. M. N. (2014). Lean supply chain performance measurement. *International Journal of Business and Social Science*, *5*(2), 24–35.

Zu, X., & Fredendall, L. D. (2010). The impact of organizational culture on supply chain integration: A contingency and configuration approach. *Supply Chain Management: An International Journal*, *15*(1), 24–41.

Research Paper

Why Do Consumers Prefer Online Shopping? An Investigation from the Lens of the Technology Acceptance Model

Review of Professional Management:
A Journal of Management
24(1) 26–43, 2026

DOI: 10.1177/09728686251409463
rpm.ndimdelhi.org

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Abstract

In recent years, the number of online consumers has increased significantly, with individuals dedicating substantial time to online shopping. Familiarity with online platforms has grown, and consumer behaviour has undergone considerable changes over the past two decades. The objective of the present study is to analyse consumer behavioural patterns and identify the factors influencing their current online shopping behaviour. A quantitative research method was employed, involving a sample of 300 respondents. A structured, self-administered research instrument was utilised to predict online consumer behaviour through the technology acceptance model using structural equation modelling. The results indicate that perceived usefulness, perceived ease of use and personal innovativeness significantly influence consumer attitudes, ultimately leading to the utilisation of online platforms for purchasing necessities. Furthermore, trust in online platforms plays a crucial role in shaping consumers' online shopping decisions. Therefore, the findings of this study are valuable for online marketers aiming to encourage consumers to purchase products and services through online platforms.

Keywords

Perceived ease of use, perceived usefulness, personal innovativeness, attitude, structural equation modelling, TAM

Received 04 April 2025; accepted 26 November 2025

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Introduction

Online shopping is often seen as a way to make our daily lives simpler and easier. Previously, people avoided shopping on online platforms because of a lack of trust in the e-marketplace. Nowadays, with improved digital systems, more trusted payment methods, and greater accessibility, online shopping has become a routine activity in modern life. It is increasingly popular worldwide because of its easy accessibility in every corner of society. The route of online shopping is linked to the invention of videotex, which was introduced in 1979 by Michael Aldrich in the United Kingdom.

With the rapid expansion of digital marketplaces, online shopping has become a vital part of the behaviour of consumers. The increasing reliance on e-commerce platforms has transmuted the way people browse, evaluate and purchase products. As digital technologies continue to advance, businesses and consumers alike have embraced the convenience, efficiency and accessibility offered by online shopping (Vhatkar et al., 2024). This shift has not only reshaped the retail landscape but also influenced the psychological and behavioural patterns of consumers, making it imperative for businesses to comprehend the underlying factors that drive online shopping decisions.

The growth of online choices has been fuelled by several factors, including the proliferation of internet access, the widespread adoption of smartphones and the evolution of secure digital payment systems. Businesses, both large and small, are increasingly shifting operations online to capture the growing e-commerce market. The ease of access, efficiency and 24/7 availability of online platforms have created new revenue streams and significantly lowered the entry barrier for sellers. As a result, the e-commerce sector has become a hyper-competitive space where user experience, technological innovation and data-driven marketing strategies determine success.

The commercial growth of online retail is driven by several enablers, including widespread smartphone adoption, high-speed internet connectivity and advancements in secure payment gateways. Additionally, advancements in artificial intelligence, big data analytics and personalised recommendation algorithms have further enhanced the online shopping experience, making it more user-friendly and tailored to individual preferences (Upadhyaya, 2024). Consumers today have access to a wide range of products at their fingertips, often with competitive pricing, user reviews and seamless return policies, which have increased the likelihood of digital shopping over traditional brick-and-mortar stores (Li et al., 2022).

As consumer behaviour continues to evolve, understanding the key factors influencing online shopping decisions is crucial for businesses aiming to enhance customer engagement and retention. Several psychological and technological factors contribute to the adoption of online shopping, including trust, perceived risk, convenience and user experience (Lăzăroiu et al., 2020). However, Makmor et al. (2019) suggested that two of the most significant factors influencing online buying behaviour are perceived usefulness (PU) and perceived ease of use (PEoU), as proposed by the technology acceptance model (TAM).

The TAM, introduced by Davis (1989), is extensively used to understand consumer behaviour from the perspective of adoption of technology. The model suggests that users' acceptance of a new technology is mostly influenced by two factors: PU and PEoU. PU describes the degree to which an individual feels that using a specific system or technology will improve their overall performance, while the PEoU relates to the degree to which an individual believes that using the system will be free of effort. Both of these elements significantly influence how consumers perceive and engage with online shopping, ultimately leading to their decision to engage in e-commerce transactions (Hajli et al., 2017).

This study aims to explore the determinants of online shopping behaviour through the lens of TAM, focusing on the impact of PU and PEoU on consumer attitudes and purchasing decisions. The study employed a structured, self-administered research instrument to collect data from respondents, allowing for a comprehensive analysis of the behaviour of consumers. The survey measured participants' perceptions of the usefulness and ease of use of online shopping platforms, as well as their attitudes towards purchasing online. Structural equation modelling (SEM) was used to analyse the data and determine the relationships between these variables. By analysing responses from 300 participants using a structured quantitative approach, the results revealed that PU and PEoU have a significant influence on consumer attitudes, which ultimately affect their likelihood of engaging in online shopping. The finding highlights the importance of ensuring that online platforms are both purposeful and user-friendly to encourage greater adoption and engagement.

The findings of this study are particularly useful for online marketers, retailers and e-commerce businesses aiming to enhance their digital strategies. By gaining insight into the major elements that influence consumer behaviour, companies can create more impactful marketing strategies, enhance the design and usability of their websites and refine overall user experiences, ultimately boosting customer satisfaction and loyalty.

Moreover, the study emphasises the importance of trust in online shopping. While PU and PEoU are critical factors, consumers also consider the safety of their personal and financial information when making online purchases. Businesses must prioritise cybersecurity measures, transparent policies and trustworthy branding to foster a sense of reliability among consumers.

The findings of this research have significance not only for individual firms but also for the wider e-commerce sector as a whole. As competition continues to intensify, understanding consumer behaviour through models like the TAM can provide valuable insights into market trends and emerging consumer preferences. Companies that leverage these insights to improve their digital strategy will be better positioned to retain and attract customers over the long run.

Literature Review and Development of Hypotheses

The TAM plays a noteworthy role in understanding consumer behaviour towards digital shopping. This model emphasises the importance of PU and PEoU, which directly influence consumers' attitudes and intentions to engage in online purchasing. The integration of TAM with factors such as personal innovativeness (PI) and behavioural control further enhances its applicability in the online business context (O'Dea, 2025).

Looking at the earlier studies, the model used to evaluate the users' attitude towards adoption of technology is the TAM model. According to this model, perceived utility and simplicity of use were important determinants of technology adoption (Davis, 1989). Subsequent research on internet shopping behaviour was made possible by this pioneering approach (Davis, 1989). Gefen and Straub expanded TAM by using it in an e-commerce setting. They discovered that consumer sentiments towards internet buying were significantly predicted by PU and simplicity of use. The usefulness of TAM in the online retail industry was confirmed by this study (Gefen & Straub, 2000). With an emphasis on perceptions of risk and trust, Pavlou adapted TAM to e-commerce. He discovered that trust is a key factor in consumer behaviour, impacting attitudes towards online purchasing in general as well as PU. By highlighting trust as a crucial component in customer decision-making, this research expanded on TAM (Pavlou, 2003). In their research, they suggested combining the TAM with the theory of planned behaviour (TPB) to create a more holistic framework for analysing consumer behaviour in online shopping. Their findings indicated that attitudes and subjective norms, alongside PEoU and PU, played a crucial role in forecasting intentions to shop online. In the same line, Gupta and Mukherjee (2022) investigated the changes in consumer behaviour regarding online shopping following the pandemic. Their findings indicated that elements such as perceived risk, online trust and the rise of mobile commerce played a crucial role in consumers' choices to adopt online shopping. The research highlighted the ongoing importance of the TAM but suggested the need for adjustments to incorporate emerging trends such as mobile shopping and privacy issues. Similarly, Huang and Benyoucef (2013) investigated the impact of social commerce, focusing on how social influence elements such as peer reviews and social interactions can affect consumer behaviour in online shopping. They incorporated these social elements into the TAM framework and discovered that social presence and interaction significantly contributed to increasing PU. We develop a research model based on a modified TAM with a trust variable.

Perceived Usefulness

In the TAM, it is argued that building of attitude of consumers is influenced by the PU (Davis, 1989). The proposed research framework brings together the core elements of the TAM, trust and relational exchange, linking them through the principles of the theory of reasoned action. The findings highlight how the attitudinal components of the original TAM, namely PU and PEoU, significantly shape users' responses. The results of this study revealed a strong, positive and significant relationship between PU and attitudes (Hsu et al., 2013). Therefore, researchers formulated the first hypothesis as:

H_1: The usefulness of shopping at online platforms has a positive effect on consumer attitudes.

Perceived Ease of Use

PEoU means a precise system is believed to be accessible and simple to use. In simple terms, when people find a technology effortless to operate while completing a task, they are more likely to appreciate it and adopt it frequently. PEoU, therefore, refers to the degree to which users feel comfortable and free of difficulty when interacting with a technology. Energy-efficient appliances incorporate new technological features, distinguishing them from conventional household devices. The degree to which a user believes that using a technology is free of effort. Research indicates that PEoU directly influences actual technology use, sometimes bypassing intentions (Or, 2024). Some customers might feel uncertain when faced with new technology and may think that the products are complicated to operate. As a result, they may hesitate to use them. In short, consumers' willingness to adopt a product is strongly influenced by how easy they believe it is to use. Thus, researchers formulated the second hypothesis as follows:

H_2: The ease-of-use shopping at online platforms has a significant and positive impact on consumer attitudes to shop online.

Personal Innovativeness

The willingness of users to accept and engage with new technologies plays a crucial role in determining how quickly they adopt them. PI refers to an individual's readiness or openness to experiment with and adopt new online shopping technologies. Previous studies by Hu et al. (2019) and Zhang et al. (2018) have found an association between user creativity and technology acceptance. Similarly, Leckie et al. (2018) demonstrated how innovation of technology engages customers actively towards adaptation, loyalty and value appraisal. In the same line, O'Cass and Carlson (2012) observed that the perception of a customer relating to the website's innovativeness can accurately predict their level of confidence. Users are more inclined to adopt a company's website when they perceive the technology as new, useful or innovative. Consequently, shoppers are more willing to engage in online purchasing when they view it as a modern and advanced technological option. In light of this understanding, the following hypotheses are presented below:

H_3: PI positively influences attitude to shop online.
H_4: PI positively develops the trust of online shoppers.

Attitude to Shop Online

Attitude is the degree of positive feelings that consumers have about participating in shopping, and it is assumed that this positive attitude provides ample opportunities for consumers to select the shopping options (Hsu et al., 2013; Suleman & Zuniarti, 2019). It involves assessing the potential outcomes of carrying out a particular behaviour, which can result in varying opinions based on individual evaluations. It represents a person's favourable or unfavourable judgement about using a technology. Even though energy-efficient appliances are widely considered beneficial for both the environment and daily living, individuals may still develop differing perspectives about their use. However, they will presumably buy them if they have a positive attitude towards energy-efficient appliances; otherwise, they will have no interest. Therefore, the next hypothesis formulated is:

H_5: The attitude to shop online has a positive impact on consumers' online shopping decisions.

Trust

The study considers another important construct to explore confidence of consumers in shopping from a digital platform, which is trust. In the earlier studies, it has been argued that trust is the most powerful and noteworthy factor that influences consumer attitude (Suleman & Zuniarti, 2019). Trust and accessibility have consistently been shown to share a strong and meaningful connection in previous research. Studies indicate that when consumers trust an online shopping platform, they are more willing to accept the risks involved in digital transactions, which ultimately shapes their purchasing choices (Indarsin & Ali, 2017). The findings also highlight that trust not only has a positive influence but also serves as a key factor in motivating consumers to engage in online shopping. Therefore, trust plays a critical role in determining online shopping behaviour. Therefore, the following hypothesis is projected:

H_6: Trust in shopping at online platforms has a positive effect on online shopping decisions.

Based on the above hypotheses, this study proposes a conceptual model designed to explore the relationship between TAM constructs, PI, attitude to shop online and consumers' choice to shop online. The study also examines the direct linkage between trust and consumers' decisions towards online shopping. Figure 1 illustrates the model of the study.

Research Method

This study employs a quantitative research design to examine the adoption of online shopping using the TAM and path analysis. The primary aim of the study is to examine the interconnection between PEoU, PU, attitude to shop online (ATSO), PI, trust (TR) and online shopping decision (OSD). A summarise definition of the constructs is presented in Table 1. The study adopts a survey-based approach, using a structured questionnaire to collect responses from participants. The data relate to the respondents' characteristics and the variables examined in

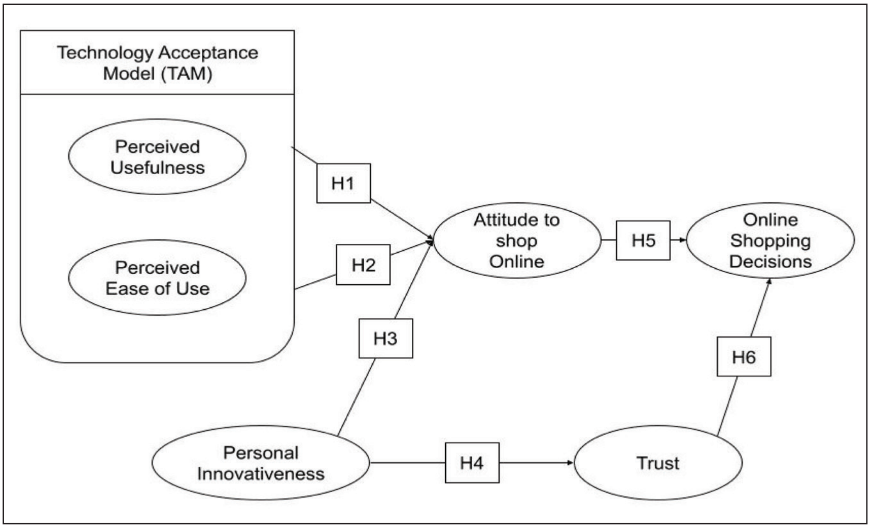

Figure 1. Conceptual Framework of the Study.

Table 1. Summarising Definition of Constructs.

Variables/ Construct	Definitions	Items	Sources
Perceived usefulness (PU)	Is a level where someone believes that a way of shopping online will improve performance	6	Jayasubramanian et al. (2015)
Perceived ease of use (PeoU)	Levels of consumers believe that online shopping can make it easier for them	5	Davis (1989)
Personal innovativeness (PI)	Willingness to access online shopping platforms and new technology	4	Hu et al. (2019); Zhang et al. (2018)
Trust (TR)	Positive expectations and consumers' trust to take risks	5	Suleman and Zuniarti (2019)
Attitude to shop online (ATSO)	Attitude pertains to a person's comprehensive assessment of online shopping as a method of purchasing, which may be characterised as either positive or negative.	6	Huang and Liaw (2005)
Online shopping decision (OSD)	Depth of positive feelings consumers have when shopping online	5	Fernandes et al. (2021)

the study. The participants consist of individuals who make purchases through the leading e-marketplace operating in West Bengal. A cross-sectional survey was conducted using a random sampling method to gather data from the respondents. A sample of 300 respondents was determined based on G* power statistical software and supported by Cohen's (1992) guidelines for SEM, ensuring statistical power and model reliability. The questionnaire was designed based on previously validated TAM constructs (Davis, 1989; Venkatesh & Davis, 2000) and adapted to fit the context of online shopping. Each construct in TAM was measured using multiple items to ensure reliability. To assess reliability, Cronbach's α was calculated, ensuring that each construct had acceptable values ($\alpha > 0.7$).

Population and Sample

For this study, three districts from West Bengal, namely Purulia, Bankura and Paschim Medinipur, collectively known as the Junglemahal region, have been selected. To obtain a comprehensive understanding of online shopping behaviour, the purposive sampling technique was adopted to identify individuals who are actively engaged in online shopping, ensuring that the responses are relevant to the research objectives. To ensure the true reflection of online buying patterns, both municipal areas and gram panchayat areas were considered for the study. The municipal areas represent urbanised zones with relatively advanced digital infrastructure, while the Gram Panchayat areas provide insights from semi-urban and rural contexts.

The researchers considered two municipalities and two gram panchayats to identify the prospective respondents for the study. As a result, a total of six municipalities and six gram panchayats were chosen across the three districts of the study area. Subsequently, 25 respondents were selected from each municipality and an equal number from each gram panchayat, resulting in a total of 300 respondents for the empirical analysis. Participants for the study were initially asked to answer the following screening questions with 'Yes' or 'No' options, such as:

1. Do you have a registered account with any online shopping platform?
2. Have you purchased any items from an online platform during the last three months?

Then, participants who have prior knowledge and experience with online shopping were invited to take part in the survey. It has observed that all participants were active online shoppers, enabling a comparative analysis of online shopping behaviour across diverse geographical and socio-economic settings.

Sample Size Determination

The G*Power software has been used to determine the sample size for the study. The researchers considered F-tests for linear multiple regression with fixed model, R^2 deviation from zero, assuming a medium effect size ($f^2 = 0.15$) at a 95% level of significance ($\alpha = 0.05$) (Faul et al., 2009). The analysis indicated that a minimum sample of 144 respondents would be required. However, the researchers selected 300 respondents for computing the empirical results, indicating that the sample size was more than adequate.

In addition, the SEM–PLS (SEM using partial least squares) method was applied with a total of 31 measurement items. According to the commonly accepted rule of thumb, the minimum sample size should be 5–10 times the number of items or indicators (Hair et al., 2019; Kline, 2016). Therefore, the sample size of 300 respondents satisfies this criterion as well, confirming its adequacy for the analysis.

Research Instrument

Data were collected using a structured and standardised research schedule, which was entirely self-developed. The schedule was divided into two sections: the first section gathered general information, including the socio-demographic profile of the respondents, while the second section focused on key determinants influencing consumer behaviour towards online shopping. To ensure the inclusion of relevant questions, a two-stage approach was followed. First, the questionnaire design was informed by a review of several previous empirical studies, including those conducted by Ajzen and Fishbein (1980), Rens (2001), Cook et al. (2002), Daly et al. (2003), Hsiu-Fen (2007), Ramayah et al. (2009), Numraktrakul et al. (2012), Al-Nahdi et al. (2015), Bag et al. (2021) and Upadhyaya (2024). Based on insights from these studies, 31 items were identified to assess the main factors influencing online consumer behaviour. A five-point Likert scale was employed to measure responses, ranging from '1 = strongly dissatisfied' to '5 = strongly satisfied'. Respondents were asked to indicate their level of agreement or satisfaction with each statement, allowing for a comprehensive evaluation of consumer attitudes towards online shopping.

Result and Analysis

Descriptive Statistics

The study collected a total of 320 questionnaires, out of which 300 were deemed valid for analysis. The demographic analysis revealed that the majority of respondents were male, constituting 94% of the total sample. Additionally, the respondents were mostly from the younger generation, with most falling within the age range of 21–30 years. In terms of income, a significant proportion of respondents reported earning less than one million rupees annually. Summarising demographic profile of the respondents is presented in Table 2.

Measurement of Internal Validity

Several testing methods were used to ensure the validity of the proposed model. Table 1 represents the Cronbach α (α), composite reliability (CR) and average

Table 2. Respondents Profile.

Measure	Category (*n*)	(%)	Measure	Category (*n*)	(%)
Gender	Male (198)	66	Age (years)	<21 (17)	5.6
	Female (102)	34		21–30 (168)	56
Education	High school (78)	26		31–40 (69)	23
	Graduate (157)	52.3		>42 (46)	15.4
	Postgraduate (51)	17	Family income	<25,000 (94)	31.3
	Others (14)	4.7	(₹)	>25,000 (206)	68.7

Table 3. Results of Measurement Model.

Constructs	α's Value	Value of CR	AVEs Score
PU	0.870	0.871	0.658
PEoU	0.858	0.859	0.636
PI	0.895	0.885	0.658
ATSO	0.814	0.816	0.618
TR	0.806	0.807	0.581
OSD	0.875	0.862	0.617

Note: PeoU: Perceived ease of use; PU: Perceived usefulness; ATSO: Attitude to shop online; PI: Personal innovativeness; TR: Trust; OSD: Online shopping decision.

variance extracted (AVE). All the values of α corresponding to each latent construct were higher than 0.7, indicating that all items used in the model were well-fitted followed by the loadings of item for each construct. Similarly, the values of CR ranged between 0.827 and 0.918, higher than the suggested threshold of 0.7 (Fornell & Larcker, 1981). The calculated values of AVE ranged between 0.627 and 0.698, greater than the recommended limit of 0.5 (Fornell & Larcker, 1981). Therefore, the results in Table 3 reflected that the model possessed acceptable convergent validity.

The discriminant validity of the latent constructs was assessed by two major criteria, namely HTMT and the Fornell–Larcker criterion, to confirm the existence of significant differences among the proposed latent variables. Heterotrait–monotrait analysis (Henseler et al., 2016) recommends that the value of each construct should be <0.85. However, another study (Hair et al., 2017) proposed that 0.9 should be considered as the threshold value. Table 4 presents the HTMT ratio, and Table 5 shows the result of the Fornell–Larcker criterion.

Structural Model Assessment

After confirming that the measurement model was satisfactory, the structural model was utilised to examine the relationships between the constructs using path analysis. The hypotheses were tested using 5,000 bootstrap resamples (Streukens & Leroi-Werelds, 2016).

For a comprehensive evaluation of the structural model, Henseler et al. (2016) recommend employing the standardised root mean square residual (SRMR) as a

Table 4. Results for Discriminant Validity (HTMT Ratio).

HTMT Ratio	PU	PEoU	PI	ATSO	TR	OSD
PU						
PEoU	0.854					
PI	0.797	0.838				
ATSO	0.775	0.874	0.853			
TR	0.799	0.781	0.749	0.761		
OSD	0.749	0.839	0.867	0.800	0.885	

Note: PeoU: Perceived ease of use; PU: Perceived usefulness; ATSO: Attitude to shop online; PI: Personal innovativeness; TR: Trust; OSD: Online shopping decision.

Table 5. Result of Fornell–Larcker Criterion.

Fornell–Larcker Criterion	PU	PEoU	PI	ATSO	TR	OSD
PU	0.811					
PEoU	0.754	0.797				
PI	0.707	0.738	0.811			
ATSO	0.751	0.674	0.653	0.786		
TR	0.713	0.731	0.749	0.761	0.762	
OSD	0.776	0.739	0.667	0.700	0.685	0.785

measure of model fit, with the criterion that it should be maintained at <0.10. The result of SRMR was 0.055. Furthermore, consistent with the approach outlined by Hair et al. (2017), the evaluation of the structural model's explanatory capability involved the computation of R^2 and Q^2 values. The R^2 values ranged between 0 and 1, with higher levels of R^2 indicating higher values of explanatory power. In the context of consumer behaviour, the acceptable value of R^2 is 0.2 or greater (Hair et al., 2016). The coefficient determination value (R^2) for ATSO (0.787) and OSD (0.782) exceeded the recommended values. Furthermore, Stone–Geisser's Q^2 values above 0.50 depict the larger predictive relevance of the path model (Hair et al., 2017). The results indicated that OSD (Q^2 = 0.778) and ATSO (Q^2 = 0.756) had stronger predictive relevance as the values were greater than 0.50. The results are summarised in Table 6. Moreover, the magnitude and direction of the relationship among the variables were tested, and the results are presented in Table 7 and Figure 2.

The path coefficient (0.570) and p value (.01) suggest a positive and significant relationship between PEoU and ATSO. The standardised coefficients (0.546, T value 6.111) of the variables are positive and significant at the 5% level of significance. This indicates that the easier an online platform is to use, the more favourable a buyer's attitude towards online purchasing. The coefficient value (0.218) and p value (.01) demonstrate a significant impact of PU on ATSO. Similarly, the standardised coefficients (0.301, T value 4.893) of the variables are positive and significant at the 5% level of significance. This implies that if buyers

Table 6. Results of Hypotheses' Testing Corresponding to the TAM.

Hypothesis Paths	Path Coefficients (β)	*p* Value	Remarks
PU → ATSO	0.218	.01	Supported
PEoU → ATSO	0.570	.01	Supported
PI → ATSO	0.694	.01	Supported
PI → TR	0.452	.01	Supported
AT → OSD	0.632	.01	Supported
TR → OSD	0.865	.01	Supported

Table 7. Magnitude and Direction of the Relationship.

Dimensions	Standardised Coefficients	SE	*t* Statistics	*p* Value
PU	0.301	0.041	4.893	.0000
PeOU	0.546	0.036	6.111	.0000
ATSO	0.764	0.034	8.868	.0000
PI	0.607	0.041	7.527	.0000
TR	0.868	0.021	9.253	.0000
Intercept	0	0.021	0	1.000

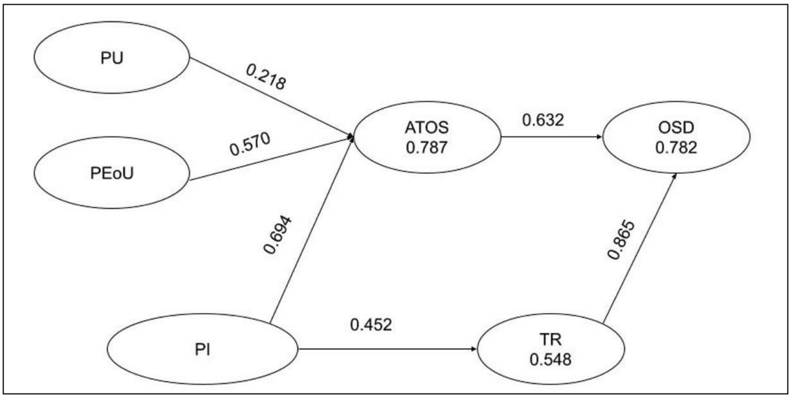

Figure 2. Results of the Path Model.

perceive online shopping as beneficial, their attitude towards using it improves. The strongest direct effect was observed between PEoU and PU, indicating that the more user-friendly an online shopping platform is, the more useful consumers perceive it to be. Moreover, PI with a coefficient value (0.694) and *p* value (.01) as well as standardised coefficients (0.607, *T* value 7.527) also has a significant impact on ATSO as well as trust (coefficient value 0.452 and *p* value = .01). It implies that users' knowledge and willingness to use technology reshape their attitude towards the technology and reduce the uncertainties of risk, thereby increasing trust. The result also reveals a strong positive effect between attitude towards shopping online (coefficient value 0.632, *p* value = .01, standardised coefficients 0.764, *T* value 8.868) and behavioural intention in the form of OSDs, confirming that a positive attitude significantly increases the likelihood of purchasing intention. Finally, results also reveal that trust (coefficient value 0.865, p value = .01, standardised coefficients 0.868, T value 9.253) plays a pivotal role in online shopping decisions. When the marketers ensure the risk-free as well as hassle-free use of technology, users paid highest attention to buy the products from digital platforms.

Thus, the study confirms that all hypothesised linkages in the model are statistically significant. PEoU significantly influences attitude towards online buying. Additionally, PU impacts attitude, which in turn affects behavioural intention.

Discussion

This study investigates the various antecedents that encourage the consumer to engage in online shopping to mitigate their need. The study proposes PI as the critical factor that has an immense impact on shaping the attitude of consumers towards online shopping. On the other hand, trust is considered an impactful antecedent influencing consumers' decisions related to online shopping, and tests the impact of these concepts using the extended TAM model.

The findings indicate that consumers' attitudes towards online shopping are shaped by how easy and useful they perceive the experience to be. Previous studies on online shopping behaviour (Elamin et al., 2025; Khatoon et al., 2024) reported comparable findings regarding consumers' intentions to engage in online shopping in the post-COVID-19 period. In addition, the study of Soomro and Habeeb (2025), on impulsive purchases in the context of mobile commerce, found PU has a strong impact on attitude toward online shopping. The finding also portrays that PI plays a crucial role in shaping the attitude towards online shopping. A previous green product e-shopping study found a similar association (Chauhan et al., 2021). Thus, a positive attitude, which is an outcome of PEoU and PU, and consumer innovativeness leads to effective online shopping decisions.

Moreover, trust of the consumer towards online shopping is an important predictor that ultimately influence online shopping decisions, which confirms the finding of the previous study (Jalil et al., 2024; Rasty et al., 2021).

The study confirms the robustness of TAM, exploring the consumer behaviour towards acceptance of technology in online shopping. With the application of an extended TAM with two additional constructs (i.e., PI and trust), this study finds that attitude towards online shopping is influenced by PU, ease of use and PI. Similarly, a positive attitude towards online buying and trust leads to final buying decisions to buy the products from online platforms.

Conclusion

The findings of this study confirm that all hypothesised relationships in the model are statistically significant, highlighting key factors influencing consumers' online shopping behaviour. The results indicate that PEoU significantly impacts consumers' attitudes towards online purchasing. A user-friendly platform enhances both PU and attitude, ultimately shaping positive behavioural intentions.

Additionally, PU plays a crucial role in improving consumers' attitudes, suggesting that when online shopping is perceived as beneficial, consumers are more likely to develop a favourable attitude towards it. PI and trust also emerge as significant determinants, reinforcing that consumers with higher technological adaptability and confidence in digital platforms are more inclined to engage in digital shopping.

Furthermore, the study reveals a strong link between attitude and behavioural intention, confirming that having a positive attitude greatly enhances the chances of making a purchase. Trust is identified as a pivotal factor in online shopping behaviour, with the highest coefficient value, underscoring the importance of ensuring risk-free and hassle-free experiences for consumers.

In conclusion, this study emphasises that user-friendly platforms, perceived benefits, trust and PI collectively shape online shopping behaviour. To enhance consumer engagement, online retailers should focus on improving platform usability, ensuring security and fostering consumer trust, ultimately driving higher purchase intentions and actual online shopping behaviour.

Implication of the Study

The factors influencing the online purchase decision have already been explored by previous research. However, most of the studies did not approach the object in an identical way or in the same way as the one we adopted. We considered all the important possible variables (variables of the TAM model and personal influencing factors like consumer innovativeness and trust) relating to online purchase decision into one single model. By considering a useful, holistic and comprehensive research framework, we suppose to make a significant contribution to the existing literature in consumer behaviour with special reference to the behaviour of digital natives.

The results of our study confirm those of previous studies that have used similar dimensions for empirical analysis; thus, the validity of the proposed hypotheses in our theoretical model has been well demonstrated regarding consumer preference towards online shopping. Therefore, given the advancement of technology and over changing nature of the digital buyers, the current study is a step towards offering insight into the use and acceptance of technology for online buying decisions.

By incorporating consumer innovativeness into this model, the study has given a new phenomenon that shapes attitude and OSD of individual consumers. Thus, the extended TAM model becomes comprehensive by acknowledging heterogeneity in the behaviour of consumers.

Moreover, the study adds trust as an important construct influencing online shopping decisions, reinforcing the idea that trust-related issues, like secure payment and user privacy, are essential preconditions for converting favourable perception about technology into actual buying behaviour.

Moreover, findings provide a crystal-clear roadmap for online retailers, particularly to increase their strategies for online business. Since PEoU positively impacted consumers' shopping attitude, retailers should give emphasis on simplified navigation, user-centric interface, etc., to ensure user satisfaction and enhance users' likelihood of making a buying decision. Similarly, the significant role of PU indicates that retailers should also focus on functional benefits of shopping online, including time saving, convenience and personalisation. Thus, retailers should emphasise the simple mechanism of online shopping that makes buying pleasant for consumers. Considering the consumer innovativeness which have an impact on shaping the attitude, retailers can target innovative customers as potential buyers and who spread positive word of mouth among conventional consumers. Finally, as trust emerged as a crucial determinant of online shopping behaviour, digital marketers should emphasise secure payment options, reliable information about products and effective customer support.

Future Avenues of the Study

Online platforms offer innumerable benefits to both sellers and buyers, and these advantages are also the reasons for the rising scope of online buying. This study examines the influence of six specific factors on online shopping behaviour. So, future studies can examine other factors like social influence, risk perception, digital shopping experience and others that have an impact on online shopping behaviour. Expanding this research to include other countries can provide deeper insights into people's online shopping behaviours. We fail to consider the consumer culture to predict the behaviour of consumers towards online shopping decisions, thus future studies may consider cultural factors to provide more generalisable results towards the behaviour of online shoppers. Furthermore, researchers can focus on a daily diary study for investigating actual behaviour of online shoppers.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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References

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behaviour. Prentice-Hall.

Al-Nahdi, T. S., Habib, S. A., & Abbaas Albdour, A. (2015). Factors influencing the intention to purchase real estate in Saudi Arabia: Moderating effect of demographic citizenship. *IJBM*, *10*(4), 35–48. http://dx.doi.org/10.5539/ijbm.v10n4p35

Bag, S., Ray, N., & Banerjee, B. (2021). Assessing the effects of experiential quality on behavioural intention of customers in banking services: The moderating role of experiential satisfaction. *FIIB Business Review*, *14*(5), 23197145211052817.

Chauhan, H., Pandey, A., Mishra, S., & Rai, S. K. (2021). Modeling the predictors of consumers' online purchase intention of green products: The role of personal innovativeness and environmental drive. *Environment, Development and Sustainability*, *23*(11), 16769–16785.

Cohen, J. (1992). Quantitative methods in psychology: A power primer. *Psychological Bulletin*, *112*(1), 155–159.

Cook, A. J., Kerr, G. N., & Moore, K. (2002). Attitudes and intentions towards purchasing GM food. *Journal of Economic Psychology*, *23*(5), 557–572.

Daly, J., Gronow, S., Jenkins, D., & Plimmer, F. (2003). Consumer behaviour in the valuation of residential property: A comparative study in the UK, Ireland and Australia. *Property Management*, *21*(5), 295–314.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319–340. http://dx.doi.org/10.2307/249008

Elamin, A. M., Ali, L., Ahmed, A. Z. E., & Aldabbas, H. (2025). Factors affecting attitudes toward e-shopping in the United Arab Emirates. *Cogent Business & Management*, *12*(1), 2442542.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160.

Fernandes, S., Venkatesh, V. G., Panda, R., & Shi, Y. (2021). Measurement of factors influencing online shopper buying decisions: A scale development and validation. *Journal of Retailing and Consumer Services*, *59*, 102394.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50.

Gefen, D., & Straub, D. W. (2000). The relative importance of perceived ease of use in IS adoption: A study of e-commerce adoption. *Journal of the Association for Information Systems*, *1*(1), 8.

Gupta, A. S., & Mukherjee, J. (2022). Long-term changes in consumers' shopping behavior post-pandemic: An exploratory study. *International Journal of Retail & Distribution Management*, *50*(12), 1518–1534.

Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems*, *117*(3), 442–458.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2019). *A primer on partial least squares structural equation modeling* (PLS-SEM) (2nd ed.). Sage Publications.

Hair, Jr, J. F., Sarstedt, M., Matthews, L. M., & Ringle, C. M. (2016). Identifying and treating unobserved heterogeneity with FIMIX-PLS: Part I–method. *European Business Review*, *28*(1), 63–76.

Hajli, N., Wang, Y., Tajvidi, M., & Hajli, M. S. (2017). People, technologies, and organizations interactions in a social commerce era. *IEEE Transactions on Engineering Management*, *64*(4), 594–604.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2016). Testing measurement invariance of composites using partial least squares. *International Marketing Review*, *33*(3), 405–431.

Hsiu-Fen, L. (2007). Predicting consumer intentions to shop online: An empirical test of competing theories. *Electronic Commerce Research and Applications*, *6*(2007), 433–442.

Hsu, C. L., Lin, J. C. C., & Chiang, H. S. (2013). The effects of blogger recommendations on customers' online shopping intentions. *Internet Research*, *23*(1), 69–88.

Hu, Z., Ding, S., Li, S., Chen, L., & Yang, S. (2019). Adoption intention of fintech services for bank users: An empirical examination with an extended technology acceptance model. *Symmetry*, *11*, 340.

Huang, H. M., & Liaw, S. S. (2005). Exploring users' attitudes and intentions toward the web as a survey tool. *Computers in Human Behavior*, *21*(5), 729–743.

Huang, Z., & Benyoucef, M. (2013). From e-commerce to social commerce: A close look at design features. *Electronic Commerce Research and Applications*, *12*(4), 246–259.

Indarsin, T., & Ali, H. (2017). Attitude toward using m-commerce: The analysis of perceived usefulness perceived ease of use, and perceived trust: Case study in Ikens wholesale trade, Jakarta–Indonesia. *Saudi Journal of Business and Management Studies*, *2*(11), 995–1007.

Jalil, F., Yang, J., Al-Okaily, M., & Rehman, S. U. (2024). E-commerce for a sustainable future: Integrating trust, green supply chain management and online shopping satisfaction. *Asia Pacific Journal of Marketing and Logistics*, *36*(10), 2354–2370.

Jayasubramanian, P., Sivasakthi, D., & Ananthi, P. K. (2015). A study on customer satisfaction towards online shopping. *International Journal of Applied Research*, *1*(8), 489–495.

Khatoon, S., Anwar, I., Shamsi, M. A., & Chaudhary, A. (2024). Consumers' behavioral intention toward online shopping in the post-COVID-19 period. *International Journal of Consumer Studies*, *48*(1), e13001.

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). The Guilford Press.

Lăzăroiu, G., Neguriţă, O., Grecu, I., Grecu, G., & Mitran, P. C. (2020). Consumers' decision-making process on social commerce platforms: Online trust, perceived risk, and purchase intentions. *Frontiers in Psychology*, *11*, 890.

Leckie, C., Nyadzayo, M. W., & Johnson, L. W. (2018). Promoting brand engagement behaviors and loyalty through perceived service value and innovativeness. *Journal of Service Marketing*, *32*, 70–82.

Li, X., Chen, Z., & Sun, Y. (2022). A deep learning approach to predicting user behavior in web applications. *Computers in Human Behavior, 105*, *106*–118.

Makmor, N., Aziz Abd, N., & Alam Shah, S. (2019). Social commerce an extended technology acceptance model: The mediating effect of perceived ease of use and perceived usefulness. *Malaysian Journal of Consumer and Family Economics*, *22*, 119–136.

Numraktrakul, P., Ngarmyarn, A., & Panichpathom, S. (2012). *Factors affecting green housing purchase*. In the 17th International Business Research Conference.

O'Cass, A., & Carlson, J. (2012). An e-retailing assessment of perceived website-service innovativeness: Implications for website quality evaluations, trust, loyalty and word of mouth. *Australasian Marketing Journal*, *20*, 28–36.

O'Dea, M. (2025). Are technology acceptance models still fit for purpose? *Journal of University Teaching and Learning Practice*, *21*(8). https://doi.org/10.53761/1bdbms32

Or, C. (2024). Thirty-five years of the technology acceptance model: Insights from meta-analytic structural equation modelling. *OTESSA Journal*, *4*(3), 1–26. https://doi.org/10.18357/otessaj.2024.4.3.66

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, *7*(3), 101–134.

Ramayah, T., Yusoff, Y. M., Jamaludin, N., & Ibrahim, A. (2009). Applying the theory of planned behavior (TPB) to predict internet tax filing intentions. *International Journal of Management*, *26*(2), 272.

Rasty, F., Mirghafoori, S. H., Saeida Ardekani, S., & Ajdari, P. (2021). Trust barriers to online shopping: Investigating and prioritizing trust barriers in an intuitionistic fuzzy environment. *International Journal of Consumer Studies*, *45* 1030–1046.

Rens, S. (2001). Supporting the online consumer decision process: Electronic commerce in a small Australian retailer. *ACIS 2001 Proceedings*, *75*. https://aisel.aisnet.org/acis2001/75

Soomro, S. A., & Habeeb, Y. O. (2025). Impact of perceived ease of use on impulsive buying behaviour through mobile commerce with hedonic and utilitarian effects. *Asia-Pacific Journal of Business Administration*, *17*(3), 796–813.

Streukens, S., & Leroi-Werelds, S. (2016). Bootstrapping and PLS-SEM: A step-by-step guide to get more out of your bootstrap results. *European Management Journal*, *34*(6), 618–632.

Suleman, D., & Zuniarti, I. (2019). Consumer decisions toward fashion product shopping in Indonesia: The effects of attitude, perception of ease of use, usefulness, and trust. *Management Dynamics in the Knowledge Economy*, *7*(2/24), 133–146.

Upadhyaya, N. (2024). Artificial intelligence in web development: Enhancing automation, personalization, and decision-making. *Artificial Intelligence*, *4*(1), 12–28.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186–204.

Vhatkar, M. S., Raut, R. D., Gokhale, R., Kumar, M., Akarte, M., & Ghoshal, S. (2024). Leveraging digital technology in retailing business: Unboxing synergy between omnichannel retail adoption and sustainable retail performance. *Journal of Retailing and Consumer Services*, *81*, 104047.

Zhang, L., Chen, L., Wu, Z., Zhang, S., & Song, H. (2018). Investigating young consumers' purchasing intention of green housing in China. *Sustainability*, *10*, 1044.

Research Paper

Sustainability in Indian Banking: A Comprehensive Study on Environmental Reporting Practices

Review of Professional Management:
A Journal of Management
24(1) 44–60, 2026

DOI: 10.1177/09728686251411693
rpm.ndimdelhi.org

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Abstract

Sustainability consciousness has grown incrementally on a global front. Organisations are striving to include all aspects of sustainability in their business contexts. This research investigates Indian banks' environmental sustainability strategies, with an emphasis on environmental reporting. Using a sample of 30 public and private sector banks in a longitudinal study, descriptive and exploratory research approaches, and statistical techniques such as descriptive statistics and inferential statistics, the research evaluated their environmental initiatives across 42 key indicators divided into five major categories. According to the analysis, private banks perform better in terms of reporting and are more proactive in environmental management. None of the banks covered every indicator. The recommendations include regulatory assistance, capacity building activities and a tracking mechanism to promote accountability and transparency. This study emphasises the relevance of environmental reporting in establishing sustainable banking practices and provides insights for policymakers, regulators and financial institutions to move forward.

Keywords

Environmental reporting, environmental sustainability, financial sector, Indian banking sector, sustainable development

Received 16 December 2024; accepted 08 December 2025

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Introduction

The word 'sustainability' is used everywhere around the world as it is all around us. Protecting the environment has become the top priority for individuals, organisations and society as a whole to prevent human destruction of our planet (Appiah et al., 2019). The concept of sustainable development has been evolving over the years. This moving target has gone across societies, organisations and industries. It has even reached the banking sector and taken the form of 'sustainable banking'. As banks are the backbone of an economy, they guide the economic players towards sustainable development (Nizam et al., 2019).

Sustainable development aims to meet the needs of both present and future generations by integrating sustainability into decision-making (Fischer et al., 2023). Increasing individual benefits and national economic growth are the goals of the economic component of sustainable development. Giving everyone in society equal access to resources that will improve their well-being is the goal of the social dimension. Preserving natural resources for the current generation without compromising the demands of future generations is the focus of the environmental dimension. It is based on the idea of balancing ecosystem capacity and human needs. But achieving progress in all areas while balancing complexity is the ultimate goal of sustainable development.

The concept of sustainable development has been evolving over the years. It has spread across societies, organisations and industries. It has even reached the banking sector and is now known as 'sustainable banking'. As banks are the backbone of an economy, they play a key role in guiding the economic players towards sustainable development (Nizam et al., 2019).

To achieve sustainability in the financial sector, banking institutions have gone through four stages. Sustainable banking has evolved from defensive to offensive banking, excluding the first layer of preventive banking. Primarily, banking institutions have moved from the inner layer to the outermost layer. The first layer is defensive banking. As banking institutions are profit-making organisations, they are reluctant to follow environmental laws for fear of incurring losses. In this stage, they consider environmental management as an additional cost to the institution (Deegan & Gordon, 1996) and irrelevant to performance. The second layer is preventive banking. At this stage, banking institutions will work on their internal processes and actively integrate environmental management and risk assessment into their core business activities. The shift in objective is due to externalities that include government institutions, NGOs and potential investors who pressure banking institutions to address environmental issues. The next layer is offensive banking. This stage considers activities that promote environmental sustainability in the financial sector. Here, banks fund environmentally friendly projects, develop green products and services and report on their environmental initiatives to get social licence (Chakroun et al., 2017; Day & Woodward, 2009). Finally, the outermost layer is green banking. At this point, the bank does not look for higher returns; it looks for steady returns. A green bank will fund projects with higher risks, lower returns and longer payback periods. But lately the concept of green banking has emerged on the back of the environmental, social and governance (ESG) framework that promotes sustainable development in the banking sector.

With sustainability growing in all organisations, it adds incremental liability and responsibility on the backbone of the economy—the banking sector to get on the sustainability bandwagon. Thus, a study on banks' practices on environmental sustainability and reporting becomes essential as it will give an insight into the current state and provide actionable recommendations to create a greater impact.

Literature Review

Corporate environmental reporting has been in the spotlight for almost three decades now. Since the early 1990s, Indian corporates were facing competition from global corporates who were setting up shop in India. These global corporates were reporting their corporate social responsibility (CSR) activities, including environmental initiatives. This led to stakeholders' expectations from Indian corporates to report their information to be accountable to society. So, to be accountable to stakeholders and society at large, Indian corporates started reporting their environmental activities in their annual reports, websites, newsletters, etc.

In India, corporate environmental reporting procedures are still in their infancy (Sahay, 2004). It was discovered that reporting procedures were insufficient, disorganised and fragmented. Indian chartered accountants believed that in order to increase the credibility of their reports, Indian corporations should create environmental reports that are validated by an outside group of certified environmental auditors (Pahuja, 2007). Furthermore, the majority of Indian corporations were simply posting mandatory environmental documentation, according to an examination of an environmental information audit. According to Chatterjee and Mir (2008), Indian businesses were revealing more environmental information on their websites than in their yearly reports. Furthermore, the study discovered that none of the sample firms reported negative information on environmental issues; instead, they solely reported neutral and positive information. Nonetheless, it was discovered that the disclosure was descriptive and narrative in character (Prasad et al., 2016; Sen et al., 2011). Previous empirical research has revealed variations in environmental reporting within Indian sectors, underscoring the fact that procedures differed both within and between Indian industries (Kumar et al., 2015; Prasad et al., 2016). Additionally, it was shown that there are variations among sectors regarding the more general aspect of sustainability reporting. However, the kind of business tasks carried out by these corporates can be a critical factor in explaining the significant differences in reporting across corporates of different sectors. Indian companies are just starting to adopt global reporting indicators (GRI) (Goel & Misra, 2017). Companies that use GRI indicators disclose more on sustainability than those that don't (Kumar, 2020). Since GRI reporting companies are doing better, Indian companies should adopt sustainable codes of conduct such as SDGs, UNGC principles and GRI to improve their sustainability reporting (Hossain & Reaz, 2007). The reporting guidelines of Companies Act 2013 and SEBI guidelines are responsible for the growing trend of environmental reporting (Prasad et al., 2016; Kumar et al., 2022; Yadav & Sinha, 2021). After the Companies Act 2013 was amended, which made it mandatory for the companies listed on BSE and NSE to publish, the quality and quantity of corporate environmental reporting by Indian entities has increased.

Earlier research has shown that public sector companies reported on environmental issues more than private sector companies (Pahuja, 2009). Compared to private sector companies in India, government companies disclose more sustainability information in their annual reports. Also, it was found that bigger polluting companies disclosed more environmental information than smaller ones (Pahuja, 2007). Several studies have looked into the variables affecting Indian companies' socio-environmental reporting practices as per the literature (Chandok & Singh, 2017; Nurhayati et al., 2016). According to Sandhu et al. (2012), corporate environmental responsiveness in Indian organisations is a two-order construct. Pressure from the company's internationalisation efforts and supply chain clients drives level one responsiveness, while the institution's cultural foundation and value system, which has its roots in the history of social responsiveness, is responsible for level 2 responsiveness. In India, the size of the audit committee, brand development and company size affect social and environmental reporting (Nurhayati et al., 2016). Also, it was found that age and company size had a positive impact on Indian companies' environmental reporting (Chandok & Singh, 2017). But this study found that a company's success and leverage had a negative impact on its environmental reporting. In India, the degree of sustainability reporting is positively affected by board size, board meetings and government ownership (Kumar et al., 2022). But there is a negative correlation between sustainability reporting and the percentage of independent directors.

Environmental reporting is limited in India, especially in the banking sector. As per Kumar et al. (2017), Indian financial institutions are gradually moving towards sustainability reporting, which includes social, environmental and economic factors. As per GRI guidelines, the sustainability reporting of top Indian banks was studied. The findings show that sustainability disclosure is not fully adopted by Indian banks. Though they report on environmental measures, they do not address many important aspects such as GHG emissions, climate change policies, etc. Indian banks are still in the early stages of sustainability, as per earlier studies. The Indian banking sector has been slower to respond to sustainability challenges (Kumar & Prakash, 2019). As per research, Indian banks are just starting to disclose their environmental activities, which are heavily dependent on their green technology. A study on 42 Indian commercial banks' sustainability reporting policy supported the above conclusions by showing that Indian banks are still in early stages of disclosing their environmental activities. Though most Indian banks have adopted green banking initiatives such as green products, green funding and green innovation processes, they are still in early stages of these programmes. Public and private sector banks in India report on the environment differently (Sharma & Choubey, 2021).

Research Gap

Environmental reporting has gained critical significance across the globe (Kılıç & Kuzey, 2019). Institutions globally have been reporting in great detail in their annual reports about their environmental activities. Meanwhile, these reporting organisations get a lot out of telling their stakeholders about their financial and non-financial data. As per research, reporting improves an institution's long-term financial performance (Agostini et al., 2021; Chouaibi et al., 2021; Radhouane et al., 2018). Additionally, these strategies have been shown to improve institutions' reputations over time (Agyei & Yankey, 2019). They assist them in creating distinctive assets that are essential for obtaining a competitive advantage in the marketplace (Banker et al., 2014). Furthermore, by significantly reducing the input–output costs related to company operations, these methods increase an institution's operational efficiency (Biswas & O'Grady, 2016). Furthermore, institutional investors protect business institutions from unfavourable market conditions since they take into account both the financial and non-financial performance of institutions when making investment decisions (Godfrey, 2005; Ye & Zhang, 2011). Nevertheless, even if reporting procedures incur additional expenses, a number of organisations use them to align their operations with social norms, values and beliefs (Tilt, 2006) and to justify their activities to the public. More significantly, it gives its stakeholders confidence and fosters a feeling of trust in the organisation. Given this, it is essential to address this area of study, which has significant advantages for a variety of stakeholder groups, including consumers, workers, government agencies, corporate organisations and the general public. However, following SEBI's rules on required disclosure requirements for listed financial institutions, Indian banks have also been aggressively disclosing their environmental projects and practices. It is essential to assess Indian financial organisations' contributions to the environment and society in light of the growing significance of environmental reporting.

Theoretical Background of the Study

Legitimacy Theory

According to legitimacy theory, institutions have to be in line with societal norms, values and beliefs to be socially accepted. It says organisations and society have a social contract that requires them to uphold moral principles and promote the well-being of society. Institutions use environmental reporting to uphold their legitimacy and address social attitudes and legal requirements. Legitimacy can be achieved through institutional practices (e.g., following industry standards and laws) or strategic activities (e.g., responding to public awareness or legal pressure). Some organisations use symbolic measures to influence stakeholder views, while others take concrete steps to close the legitimacy gap. Environmental reporting has become a way for banks to show their legitimacy and commitment to sustainability. According to the theory, organisations highlight positive information to support their reputation and use environmental disclosure to keep good relations with society.

Stakeholder Theory

Freeman proposed the stakeholder theory in 1984. It states that businesses should consider the interests of all the groups that influence or are affected by their choices, not only those that maximise profits but also non-stockholder organisations such as the environment and local communities. With stakeholders pressuring institutions to address environmental challenges, this has gradually come into line with sustainability. In order to improve a company's reputation, increase its worth and draw in investors and clients that respect CSR, stakeholder engagement includes accountability, transparency and environmental performance reporting. Institutions are also under pressure from governments and regulatory agencies to practice environmental responsibility. Meeting stakeholder needs is the focus of stakeholder theory.

Objectives of the Study

The study has the following two objectives:

1. To assess the environmental reporting practices of selected banks in India.
2. To analyse and compare the environmental reporting practices of selected banks in India.

Research Methods

The present research is a longitudinal study for a 10-year consecutive time period of 2014–2024. It is a quantitative study. The sample consists of 30 Indian banks: 12 public sector banks and 18 private sector banks. The study is based on secondary data. The required data were obtained through various sources, inclusive of annual reports, sustainability reports and business responsibility reports of the concerned banks. Tools and techniques for the analysis include extensive content analysis, descriptive statistics and inferential statistics as Levene's test for equality of variance and t-test for equality of means.

For the 30 selected banks, public sector banks include State Bank of India, Punjab National Bank, Bank of Baroda, Canara Bank, Union Bank, Bank of India, Indian Bank, Central Bank of India, Indian Overseas Bank, UCO Bank, Bank of Maharashtra, Punjab and Sind Bank. Private sector banks include HDFC Bank, ICICI Bank, Kotak Mahindra Bank, Axis Bank, IndusInd Bank, Yes Bank, IDFC First Bank, Federal Bank, South Indian Bank, RBL Bank, Bandhan Bank, CSB Bank, IDBI Bank, Karur Vysya Bank, City Union Bank, Dhanlaxmi Bank, Karnataka Bank and Tamilnad Mercantile Bank.

An extensive literature review yielded the following 42 environmental parameters upon which the banks were extensively evaluated and compared: Evaluation of GHG emission, Initiatives to save fuel consumption, Adoption of tools to reduce air pollution/carbon footprint, Targets to reduce emissions and control air pollution, Initiatives to reduce and recycle material/paper usage, Waste disposal mechanism, Installation of waste recycling units, Targets to reduce waste generation, Installation of water recycling units, Adoption of water conservation tools, Information on units of water saved, Targets to reduce water consumption, Use of alternative/renewable sources of energy, Installation of energy-efficient systems/tools/equipment, Information on units of energy saved, Targets to reduce energy consumption, Tree plantation/afforestation activities initiatives, Initiatives/programmes to restore the ecology, Environmental policy, Environmental risk management system, Adoption of environmental risk management strategies/tool, Identification/evaluation of climate-related risk, Financing renewable energy projects, Financing green projects, Investments in environmental-related research and developmental activities, Investments in green technology, Maintenance of an exclusion list, Inclusion of environmental aspect in the bank's lending policy, Information on the amount saved from environmental initiatives, Adoption of digital communication channels, Adoption of green technology, Provision of internet and mobile banking apps, Certification for environmental management system, Environmental compliance agreements, Signatory to environmental principles/standards, Awards for environmental practices and initiatives, Presence of environmental departments, councils and committees, Environmental awareness programmes, Environmental training programmes for bank employees, Environmental promotional activities, Presence of an internal/external environmental audit and Delivery of green products and services.

Environmental risk management, environmental finance, environmental compliance, environment management initiatives and practices and environment-related policies are the five domains into which the parameters were logically divided.

Analysis and Discussion

Environmental Reporting Score of Selected Banks: Aggregate/Average-wise

Over the course of 10 consecutive years, the environmental reporting scores of these 30 Indian banks were assessed using aggregate/average-wise criteria. Public sector banks' individual environmental reporting scores are displayed in Figure 1. For the relevant 10-year period, the State Bank of India obtains the highest environmental reporting score. Next are Punjab National Bank and Indian Bank. The banks with the lowest environmental reporting scores are Indian Overseas Bank and Punjab & Sind Bank. The private sector banks' individual environmental reporting scores are displayed in Figure 2. In terms of the relevant 10-year timeframe, Yes Bank has the greatest score. Next are Kotak Mahindra Bank and Axis Bank. The banks with the lowest scores include Dhanlaxmi Bank

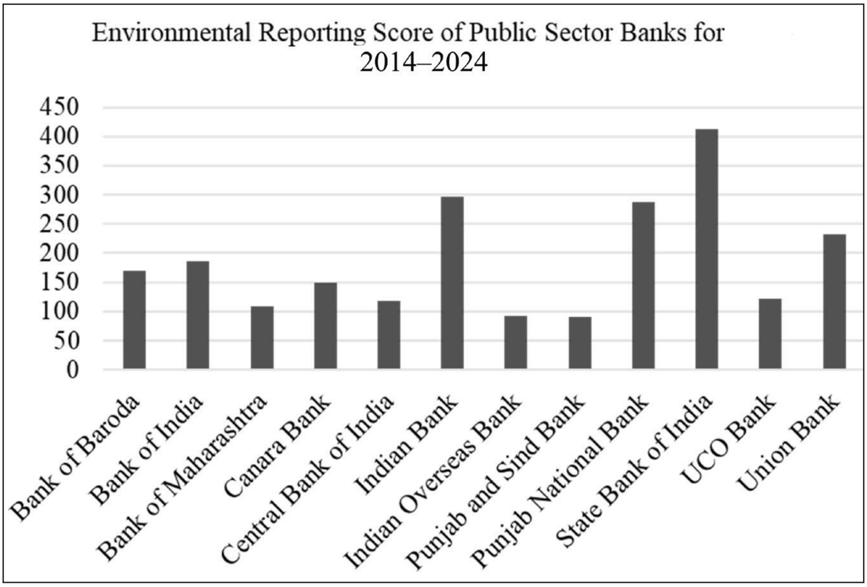

Figure 1. Environmental Score of Public Sector Banks.

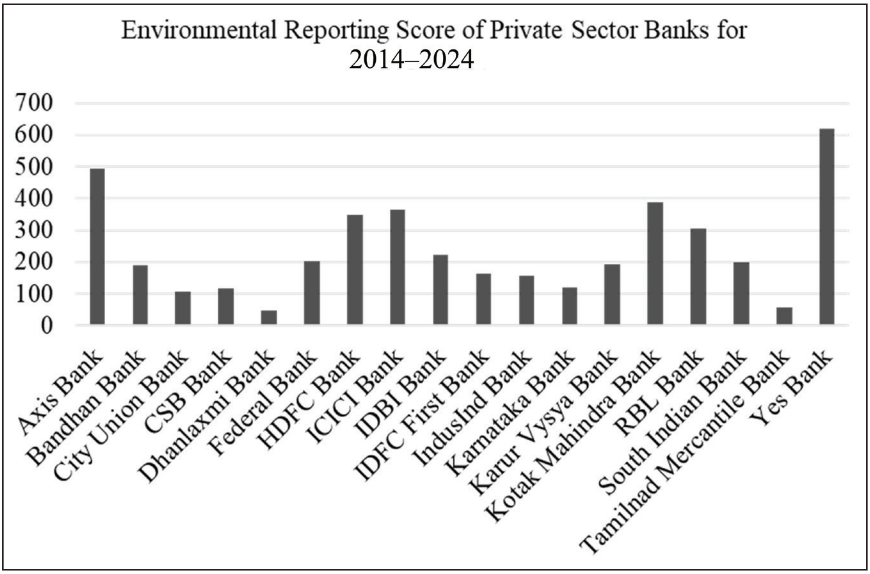

Figure 2. Environmental Score of Private Sector Banks.

and Tamilnad Mercantile Bank. IndusInd Bank has the most indicators out of 42 indicators, according to a further study done in the context of the indicator-wise criterion. Next in line for a tie-up are Axis Bank, HDFC Bank and ICICI Bank. The second-ranked banks are closely followed by the State Bank of India and Yes Bank. Furthermore, the results make it evident that Tamilnad Mercantile Bank and Indian Overseas Bank meet on the fewest number of metrics. The same is true for Bank of Maharashtra and Dhanlaxmi Bank. Therefore, it is abundantly evident that none of the sample banks are fulfilling their environmental obligations and disclosing them in accordance with all 42 indicators.

Environmental Reporting Score of Selected Banks: Category-wise

A category-wise analysis of 30 chosen banks was conducted after the 42 indicators were divided into five main categories: environment-related policies, environment risk management, environmental finance, environmental compliance and environment management initiatives and practices. The banks in the sample are reporting under environmental management initiatives and practices, which have the highest score, as shown in Figure 3. Next are environmental policies. Third is environmental finance. The sample banks are reporting the least amount of environmental compliance during the research period, with environmental risk management coming in at number four (Tables 1 and 2).

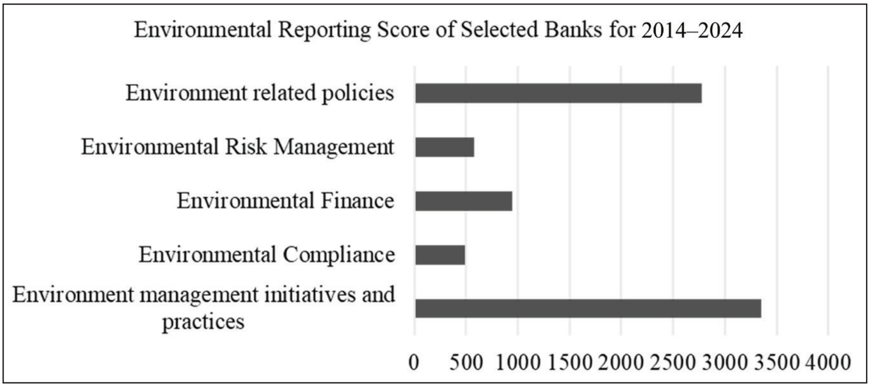

Figure 3. Total Environmental Reporting Score Category-wise.

Table 1. Descriptive Statistics for Selected Banks for the Different Dimensions.

Group Statistics	Bank Type	*N*	Mean	Standard Deviation	Standard Error Mean
Environment-related policies	Public	12	65.22	34.83	6.69
	Private	18	168	109.35	33.04
Environmental risk management	Public	12	8.6	4.47	1.27
	Private	18	28.15	14.66	4.28
Environmental finance	Public	12	18.39	16.43	4.93
	Private	18	50.05	38.11	8.91
Environmental compliance	Public	12	15.01	6.36	1.89
	Private	18	26.71	12.01	2.49
Environment management initiatives and practices	Public	12	82.04	28.43	7.41
	Private	18	135.5	51.99	19.7

Table 2. Inferential Statistics for Selected Banks for Environment-related Policies.

		Levene's Test of Variances		*t* Test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	*t*	*df*	Sig. (Two-tailed)	Mean Difference	Std Error Difference	Lower	Upper
Environment-related policies	Equal variances assumed	14.533	0.001	−3.008	22	0.005	−89.358	32.991	−167.94	−33.27
	Equal variances not assumed			−3.008	13	0.009	−89.358	32.991	−167.94	−27.29
Environmental risk management	Equal variances assumed	31.76	0.001	−3.351	22	0.005	−15.05	4.439	−25.57	−5.52
	Equal variances not assumed			−3.351	13	0.008	−15.05	4.439	26.02	−4.08
Environmental finance	Equal variances assumed	8.769	0.007	−3.007	22	0.006	−36.076	9.909	−53.91	−9.59
	Equal variances not assumed			−3.007	15	0.008	−36.076	9.909	−53.91	−9.63
Environmental compliance	Equal variances assumed	7.406	0.014	−3.081	22	0.004	−11.761	3.251	−18.54	−3.78
	Equal variances not assumed			−3.081	19	0.005	−11.761	3.251	−18.54	−3.68
Environment management initiatives and practices	Equal variances assumed	12.974	0.002	−2.57	22	0.013	−53.008	18.751	−84.98	−16.81
	Equal variances not assumed			−2.57	15	0.017	−53.008	18.751	86.29	−15.05

Quantitative Analysis

There exist notable distinctions between public and private banks' environmental measures. The much higher mean ratings of private banks show a far higher level of commitment than those of state banks. A substantial difference in variances is indicated by Levene's test, indicating that private banks are more aggressive in putting environmental rules into place. Private banks perform better than public banks, as seen by higher mean scores and Levene's test showing considerable variance inequality. This is because private banks have greater integration of risk management methods connected to environmental challenges. The findings suggest that private banks could place more emphasis on environmental responsibility and sustainability, either as a result of regulatory requirements or competitive pressures.

Significant distinctions between public and private banks in the context of environmental finance are highlighted by the analysis. The much higher mean ratings of private banks show a far higher level of commitment than those of state banks. The results of Levene's test shows a negligible difference in variances, indicating that public and private banks are roughly equally aggressive in providing funding for projects that address environmental issues. Greater environmental compliance is reflected in higher mean scores, which show that private banks perform better than public banks. Private and public banks appear to be about equally aggressive in extending compliances and regulatory concerns from an environmental standpoint, according to Levene's test, which shows a minor difference in variances. Private banks perform better than public banks, as seen by higher mean scores and Levene's test showing considerable variance inequality. This is because private banks have superior environmental management programmes and policies. The findings suggest that environmental responsibility and sustainability may be given more attention by private banks.

To determine whether differences in environmental disclosure persist beyond structural and financial capacity, a multiple regression was estimated across 30 major Indian banks (Table 3). The model, with R^2 of 0.58 ((adjusted $R^2 = 0.55$, F = 20.4, $p < .001$), reveals that logarithm of total assets is a strong and significant predictor ($\beta = 5.21$, $p < .001$), indicating that larger banks disclose more on environmental practices. Net profit also has a positive and significant effect

Table 3. Regression of Environmental Score on Bank-level Controls.

Predictor	Coefficient (β)	Std Error	*t* Statistic	*p* Value
Intercept (β_0)	–12.34	8.16	–1.51	.135
Log (total assets) (β_1)	5.21	1.47	3.54	<.001
Net profit (β_2)	0.00105	0.00041	2.56	.013
Ownership (β_3)	3.75	1.58	2.38	.020
R^2	0.58			
Adjusted R^2	0.55			
F-statistic	20.4 ($p < .001$)			

Model: $EnvScore_i = \beta_0 + \beta_1 \cdot \log(TotalAssets_i) + \beta_2 \cdot NetProfit_i + \beta_3 \cdot Ownership_i + \varepsilon_i$.

($\beta = 0.00105$, $p = .013$), indicating that more profitable banks engage in deeper environmental reporting. Ownership remains a significant factor ($\beta = 3.75$, $p = .020$), confirming that private banks score on average 3.75 points higher than public sector banks, even after accounting for size and profit.

Illustrative Qualitative Insights from Bank Reports

While this research is quantitative, some quotes from public disclosures provide a qualitative context to banks' environmental commitments. These quotes are from publicly available sustainability and annual reports and show how banks frame their environmental strategy beyond checklists.

> SBI's commitment to sustainable development is reflected in our ESG framework, which prioritizes responsible lending, adoption of renewable energy, and afforestation drives. In FY24, SBI financed 5,213 MW of renewable energy capacity and initiated 1.1 million tree plantations under its Green India initiative. (SBI Sustainability Report 2024, p. 12)

> We are integrating ESG factors across our lending and investment portfolios. Our 'Parivartan' platform focuses on green product innovation, low-carbon lending, and supporting communities vulnerable to climate change. (HDFC Bank ESG Report 2024, p. 8)

> As the first Indian bank to sign the UNEP-FI Principles for Responsible Banking, we aim to become a catalyst for India's green transition. Our commitment to responsible banking is operationalized through internal green bond frameworks and sector-specific environmental risk assessments. (Yes Bank BRSR 2024, p. 10)

These narrative disclosures support the numbers which state that banks with higher scores tend to integrate sustainability more into their core strategy. Private banks in particular use environmental reporting not only for compliance but also for stakeholder engagement and market positioning.

Findings

Banks have definitely been boosting their environmental reporting during this time, even if they are still in the early stages of implementing full environmental reporting processes. Since none of the sample banks reported on all 42 environmental indicators, there are gaps in the complete reporting of environmental commitments. The greater increase rate in environmental reporting indicates that private sector banks have taken a more active approach to environmental initiatives. The independent sample *t*-test reveals notable distinctions between public and private sector banks in each area of environmental reporting, with private banks outperforming public ones across the board. Controlling for size and profitability, private banks report significantly more on environmental issues than public banks, while larger banks and higher profitability are also positively associated with stronger reporting. Qualitative excerpts from the bank reports support that private sector banks articulate a clearer and more integrated sustainability story, as do their higher scores. Finally, there is still a tremendous need for improvement, particularly in public sector banks' environmental reporting and operations, even though both private and public sector banks are making progress.

Recommendation

Based on the results of the thorough analysis and the lengthy investigation that was carried out, the following practical recommendations or proposals have been made. Banks must think about meeting all environmental indicators in order to achieve complete and transparent environmental reporting success. Both public and private banks are required to submit more thorough and transparent reports on their environmental initiatives, along with particular goals and outcomes. Banks must have continuous procedures to track and evaluate the effectiveness of their environmental initiatives in order to be held accountable. Banks must spend money on educating those in charge of environmental reporting if they want to obtain better and more accurate data. To encourage banks to enhance their environmental disclosures and practices, government and regulatory agencies must provide clear guidelines and incentives.

Implications of the Study

Important new information about the relationship between corporate reporting in the banking industry and environmental sustainability is provided by this study. By improving CSR and environmental reporting, banks will make a stronger case for environmental responsibility. The study shows that customers, investors and regulators prefer banks that are more environmentally committed and stronger environmental reporting is associated with better financial performance and competitive advantage. This is in line with stakeholder theory, which states that for organisations to succeed they must meet the expectations of multiple stakeholders, including environmental ones.

The study provides policymakers and regulators with insights to promote better environmental reporting in India's banking sector. According to the study, regulatory frameworks should encourage public and private banks to have more extensive and clear environmental reporting requirements. The government can play a big role by having regulations that ensure uniformity across the industry. The study shows how banks can not only comply with regulations but also become leaders in sustainability by integrating sustainability into their core operations, using green financing, improving internal processes and being transparent about environmental data.

To enhance the policy relevance and generalisability of the findings, the study's indicators were thoroughly examined in light of global sustainability benchmarks, specifically the United Nations Sustainable Development Goals

Table 4. Mapping of Selected Environmental Indicators to UN SDGs and GRI Standards.

Study Indicator	Relevant UN SDG(s)	GRI Standard(s)
GHG emission evaluation	SDG 13: Climate action	GRI 305: Emissions
Renewable energy usage	SDG 7: Affordable and clean energy	GRI 302: Energy
Water conservation and recycling	SDG 6: Clean water and sanitation	GRI 303: Water and effluents
Waste management and reduction	SDG 12: Responsible consumption	GRI 306: Waste
Financing of green projects	SDG 9: Industry, innovation	GRI 203: Indirect economic impacts
Environmental training for employees	SDG 4: Quality education	GRI 404: Training and education
Tree plantation and ecological restoration	SDG 15: Life on land	GRI 304: Biodiversity
Environmental compliance agreements	SDG 16: Peace, justice and institutions	GRI 307: Environmental compliance
Green products and services	SDG 12: Responsible consumption	GRI 416: Customer health and safety
Environmental policies and risk management frameworks	SDG 13: Climate action	GRI 102/103: General disclosures, management approach

(UN SDGs) and the GRI Standards. Table 4 maps the selected environmental indicators used in the study to relevant SDG targets and GRI disclosure standards.

The mapping in Table 4 highlights that the indicators analysed in the study are relevant not merely for local and institutional improvements but also tend to contribute to the broader international sustainability agenda. As Indian banks progress in environmental reporting, alignment with these global frameworks will enhance transparency, comparability and stakeholder trust, whilst enabling a better tracking of progress towards global climate and sustainability goals.

The report highlights how environmental sustainability can be a business advantage for the banking sector. Strong environmental reporting will attract partners, investors and customers who value sustainability. Their market positioning can improve with this trend, especially with customers who care for the environment. Private banks can increase customer loyalty and reputation by showcasing their commitment to sustainability. But if they do not invest in sustainable practices, public sector banks will lag behind and miss out on green financing, new revenue streams and alignment with national and international sustainability goals.

Conclusion

This study demonstrates how reporting practices have advanced, particularly among banks in the private sector. There are still shortcomings in public sector banks' use of comprehensive environmental indicators, notwithstanding the advancements. Through transparent reporting and thorough environmental policies, Indian banks may foster stakeholder trust and align with global sustainability standards. According to the report, coordinated tracking systems, capacity building initiatives and regulatory backing are required to increase the sector's environmental responsibility. By bolstering banks' finances and accomplishing the larger objective of sustainable development, better environmental regulations will eventually help both the economy and the environment.

Future Scope of the Study

The study's stated limitations may serve as a springboard for more investigation in the targeted field. A longer time range and the utilisation of primary data over and above secondary data might be tried, improved generalisation by more rational classification and analysis using other pertinent statistical methods. Further, the inclusion of foreign banks might provide greater comparison insights.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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References

Agostini, M., Costa, E., & Korca, B. (2021). Non-financial disclosure and corporate financial performance under Directive 2014/95/EU: Evidence from Italian listed companies. *Accounting in Europe*, *19*(1), 78–109. https://doi.org/10.1080/17449480.2021.1979610

Agyei, S. K., & Yankey, B. (2019). Environmental reporting practices and performance of timber firms in Ghana. *Journal of Accounting in Emerging Economies*, *9*(2), 268–286. https://doi.org/10.1108/jaee-12-2017-0127

Appiah, B. K., Donghui, Z., Majumder, S. C., & Monaheng, M. P. (2019). Effects of environmental strategy, uncertainty and top management commitment on the environmental performance: Role of environmental management accounting and environmental management control system. *International Journal of Energy Economics and Policy*, *10*(1), 360–370. https://doi.org/10.32479/ijeep.8697

Banker, R. D., Mashruwala, R., & Tripathy, A. (2014). Does a differentiation strategy lead to more sustainable financial performance than a cost leadership strategy? *Management Decision*, *52*(5), 872–896. https://doi.org/10.1108/md-05-2013-0282

Biswas, S., & O'Grady, W. (2016). Using external environmental reporting to embed sustainability into organisational practices. *Accounting Research Journal*, *29*(2), 218–235. https://doi.org/10.1108/arj-04-2015-0063

Chakroun, R., Matoussi, H., & Mbirki, S. (2017). Determinants of CSR disclosure of Tunisian listed banks: A multi-support analysis. *Social Responsibility Journal*, *13*(3), 552–584. https://doi.org/10.1108/srj-04-2016-0055

Chandok, R. I. S., & Singh, S. (2017). Empirical study on determinants of environmental disclosure. *Managerial Auditing Journal*, *32*(4/5), 332–355. https://doi.org/10.1108/maj-03-2016-1344

Chatterjee, B., & Mir, M. Z. (2008). The current status of environmental reporting by Indian companies. *Managerial Auditing Journal*, *23*(6), 609–629. https://doi.org/10.1108/02686900810882138

Chouaibi, S., Rossi, M., Siggia, D., & Chouaibi, J. (2021). Exploring the moderating role of social and ethical practices in the relationship between environmental disclosure and financial performance: Evidence from ESG companies. *Sustainability*, *14*(1), 209. https://doi.org/10.3390/su14010209

Day, R., & Woodward, T. (2009). CSR reporting and the UK financial services sector. *Journal of Applied Accounting Research*, *10*(3), 159–175. https://doi.org/10.1108/09675420911006398

Deegan, C., & Gordon, B. (1996). A study of the environmental disclosure practices of Australian corporations. *Accounting and Business Research*, *26*(3), 187–199. https://doi.org/10.1080/00014788.1996.9729510

Fischer, M., Foord, D., Frecè, J., Hillebrand, K., Kissling-Näf, I., Meili, R., Peskova, M., Risi, D., Schmidpeter, R., & Stucki, T. (2023). Sustainable business. In *SpringerBriefs in business.* Springer. https://doi.org/10.1007/978-3-031-25397-3

Godfrey, P. C. (2005). The relationship between corporate philanthropy and shareholder wealth: A risk management perspective. *Academy of Management Review*, *30*(4), 777–798. https://doi.org/10.5465/amr.2005.18378878

Goel, P., & Misra, R. (2017). Sustainability reporting in India: Exploring sectoral differences and linkages with financial performance. *Vision the Journal of Business Perspective*, *21*(2), 214–224. https://doi.org/10.1177/0972262917700996

Hossain, M., & Reaz, M. (2007). The determinants and characteristics of voluntary disclosure by Indian banking companies. *Corporate Social Responsibility and Environmental Management*, *14*(5), 274–288. https://doi.org/10.1002/csr.154

Kılıç, M., & Kuzey, C. (2019). Determinants of climate change disclosures in the Turkish banking industry. *International Journal of Bank Marketing*, *37*(3), 901–926. https://doi.org/10.1108/ijbm-08-2018-0206

Kumar, K. (2020). Emerging phenomenon of corporate sustainability reporting: Evidence from top 100 NSE-listed companies in India. *Journal of Public Affairs*, *22*(1). https://doi.org/10.1002/pa.2368

Kumar, K., Kumari, R., Nandy, M., Sarim, M., & Kumar, R. (2022). Do ownership structures and governance attributes matter for corporate sustainability reporting? An examination in the Indian context. *Management of Environmental Quality*, *33*(5), 1077–1096. https://doi.org/10.1108/meq-08-2021-0196

Kumar, K., & Prakash, A. (2019). Managing sustainability in banking: Extent of sustainable banking adaptations of banking sector in India. *Environment Development and Sustainability*, *22*(6), 5199–5217. https://doi.org/10.1007/s10668-019-00421-5

Kumar, R., Pande, N., & Afreen, S. (2017). Developing a GRI-G4-based persuasive communication framework for sustainability reporting (SR). *International Journal of Emerging Markets*, *13*(1), 136–161. https://doi.org/10.1108/ijoem-01-2017-0015

Kumar, V., Gunasekaran, A., Singh, K., Papadopoulos, T., & Dubey, R. (2015). Cross sector comparison of sustainability reports of Indian companies: A stakeholder perspective. *Sustainable Production and Consumption*, *4*, 62–71. https://doi.org/10.1016/j.spc.2015.08.005

Nizam, E., Ng, A., Dewandaru, G., Nagayev, R., & Nkoba, M. A. (2019). The impact of social and environmental sustainability on financial performance: A global analysis of the banking sector. *Journal of Multinational Financial Management*, *49*, 35–53. https://doi.org/10.1016/j.mulfin.2019.01.002

Nurhayati, R., Taylor, G., Rusmin, R., Tower, G., & Chatterjee, B. (2016). Factors determining social and environmental reporting by Indian textile and apparel firms: A test of legitimacy theory. *Social Responsibility Journal*, *12*(1), 167–189. https://doi.org/10.1108/srj-06-2013-0074

Pahuja, S. (2007). Environmental reporting verification: A critical evaluation of accountants' views and corporate practices in India. *Social Responsibility Journal*, *3*(2), 22–31. https://doi.org/10.1108/17471110710829696

Pahuja, S. (2009). Relationship between environmental disclosures and corporate characteristics: A study of large manufacturing companies in India. *Social Responsibility Journal*, *5*(2), 227–244. https://doi.org/10.1108/17471110910964504

Prasad, M., Mishra, T., & Kalro, A. D. (2016). Environmental disclosure by Indian companies: An empirical study. *Environment Development and Sustainability*, *19*(5), 1999–2022. https://doi.org/10.1007/s10668-016-9840-5

Radhouane, I., Nekhili, M., Nagati, H., & Paché, G. (2018). The impact of corporate environmental reporting on customer-related performance and market value. *Management Decision*, *56*(7), 1630–1659. https://doi.org/10.1108/md-03-2017-0272

Sahay, A. (2004). Environmental reporting by Indian corporations. *Corporate Social Responsibility and Environmental Management*, *11*(1), 12–22. https://doi.org/10.1002/csr.51

Sandhu, S., Smallman, C., Ozanne, L. K., & Cullen, R. (2012). Corporate environmental responsiveness in India: Lessons from a developing country. *Journal of Cleaner Production*, *35*, 203–213. https://doi.org/10.1016/j.jclepro.2012.05.040

Sen, M., Mukherjee, K., & Pattanayak, J. (2011). Corporate environmental disclosure practices in India. *Journal of Applied Accounting Research*, *12*(2), 139–156. https://doi.org/10.1108/09675421111160709

Sharma, M., & Choubey, A. (2021). Green banking initiatives: A qualitative study on Indian banking sector. *Environment Development and Sustainability*, *24*(1), 293–319. https://doi.org/10.1007/s10668-021-01426-9

Tilt, C. A. (2006). Linking environmental activity and environmental disclosure in an organisational change framework. *Journal of Accounting & Organizational Change*, *2*(1), 4–24. https://doi.org/10.1108/18325910610654108

Yadav, M. P., & Sinha, N. (2021). Investigating the impact of corporate social responsibility on competitive performance: An empirical study based on panel data analysis. *FIIB Business Review*, *11*(2), 165–173. https://doi.org/10.1177/23197145211015443

Ye, K., & Zhang, R. (2011). Do lenders value corporate social responsibility? Evidence from China. *Journal of Business Ethics*, *104*(2), 197–206. https://doi.org/10.1007/s10551-011-0898-6

Research Paper

Culinary Delights in Tourism and Hospitality: A Review and Future Research Prospects

Review of Professional Management:
A Journal of Management
24(1) 61–81, 2026
© The Author(s) 2025
DOI: 10.1177/09728686251342314
rpm.ndimdelhi.org

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Abstract

This study presents a comprehensive descriptive analysis of culinary tourism literature. We conducted meticulous research, identifying 231 relevant articles from the Scopus database using keywords such as 'Food Tourism', 'Culinary Tourism', 'Gastronomy', 'Tourist Destination' and 'Tourism Development'. The analysis covered various aspects, including the distribution of publications over the years, prominent journals, authorship patterns, bibliographic coupling and theoretical perspectives. Our study employed rigorous selection criteria, focusing exclusively on English language articles related to culinary tourism. By examining these scholarly works, we aim to provide insights into the evolving landscape of culinary tourism research, offering valuable information to academics, practitioners and policymakers interested in this dynamic field. Through this endeavour, we contribute to the advancement of knowledge and scholarship in culinary tourism, fostering a deeper understanding of its multifaceted dimensions and implications.

Keywords

Culinary tourism, food tourism, gastronomy tourism, hospitality research and bibliometric analysis

Received 20 July 2024; accepted 04 March 2025

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Introduction

Culinary tourism, an emerging field in the nexus of gastronomy and tourism, has garnered increasing scholarly attention in recent years. This interdisciplinary domain explores the intricate relationship between food, culture and tourism experiences, offering insights into how culinary traditions, gastronomic events, and dining experiences shape tourist perceptions, destination appeals and economic development (Kovalenko et al., 2023; Park & Widyanta, 2022; Testa et al., 2019; Wondirad et al., 2021). Drawing on a rich body of literature encompassing diverse themes and theoretical frameworks, this study provides a comprehensive retrospective overview of research in culinary tourism, identifying prominent themes, theories and future research directions through bibliometric analysis techniques.

One of the central themes in culinary tourism research is the assessment of service quality at gastronomic festivals and restaurants. Scholars have endeavoured to develop models that encapsulate dimensions such as tangibility, reliability, responsiveness and adequacy to understand how these factors influence tourist satisfaction and destination image (Kaushal & Yadav, 2021; Marek & Wiśniewska, 2021; Soonsan et al., 2023). Moreover, there is growing recognition of the role of local culinary offerings in shaping tourists' perceptions and experiences. Studies have emphasised the significance of promoting local food and products, often registered with geographical indications, as a means of enhancing destination branding and attracting tourists seeking authentic gastronomic experiences (Anton Martin et al., 2021; Kanupriya, 2024; Matthew et al., 2022).

Wine tourism has emerged as another focal point of inquiry in the culinary tourism landscape. Scholars have explored the potential of wine tourism to stimulate demand in rural destinations and to contribute to regional development (Bruwer & Lesschaeve, 2012; Duarte et al., 2022). Case studies, particularly in regions renowned for wine production such as the Demarcated Douro region in Portugal, have underscored the economic, cultural and environmental benefits of wine tourism initiatives (Crespi-Vallbona & Mascarilla-Miró, 2020; Ghosh & Das, 2017). Furthermore, the socio-cultural dimensions of culinary tourism have been extensively examined, with researchers investigating how tourists' backgrounds, values and preferences influence their food consumption behaviours and evaluations of destination food offerings (Kumar & Gupta, 2019; Wondirad et al., 2021). Studies have also explored the role of food in identity formation, place attachment and cultural exchange, highlighting its significance beyond mere sustenance.

Policy and governance issues have also been featured prominently in culinary tourism research. Scholars have analysed the role of government interventions, regulations and governance structures in supporting culinary tourism development, promoting sustainable practices and enhancing destination competitiveness (Matthew et al., 2018; Teixeira & Ribeiro, 2013). Furthermore, the impact of food festivals and gastronomic events on destination images has been explored, with researchers examining how local agents and social media platforms shape perceptions through food-related experiences. Additionally, emerging topics, such as the integration of technology into culinary businesses and the exploration of niche markets, have sparked interest among scholars, offering new avenues for research and innovation in the field of culinary tourism (Stone et al., 2022).

In this study, we aim to provide a comprehensive understanding of the intellectual and conceptual structure of culinary tourism literature. To achieve this, we draw upon the conceptualisations of terms such as ‘Food Tourism’, ‘Culinary Tourism’, ‘Gastronomy’, ‘Tourist Destination’, ‘Tourism Development’ and ‘Hospitality’ from existing literature. These terms serve as the foundation for defining research themes in culinary tourism over the years, helping to delineate the boundaries and scope of our study.

Through a systematic review of existing studies on culinary tourism, we sought to address several key research questions. First, we aim to uncover the intellectual and conceptual structure of culinary research literature, shedding light on the foundational theories, methodologies and thematic trends that have shaped scholarly inquiry in this field. Second, we endeavoured to identify the theoretical perspectives that have been most commonly employed to study culinary tourism, examining how various theoretical frameworks have been applied to understand the complex interplay between food, culture and tourism experiences. Finally, we aim to outline promising future avenues for research in culinary tourism, leveraging insights from the existing literature to identify gaps, emerging trends and areas that need further exploration.

By systematically synthesising and analysing the existing body of research on culinary tourism, this study seeks to contribute to the advancement of theoretical and practical understanding in the field. By elucidating the intellectual landscape, theoretical underpinnings and future research directions in culinary tourism, we aim to provide scholars and practitioners with valuable insights to inform their work and drive innovation in this dynamic and multifaceted domain.

Research Themes Over the Year

Research on culinary tourism spans diverse themes, including destination branding, tourist motivations, sustainability, technological innovation, cultural preservation and policy frameworks. Scholars highlight how destination promotion, authentic experiences and technological advancements shape culinary tourism while emphasising economic growth, cultural preservation and visitor satisfaction.

Destination Development and Branding

Destination branding is crucial in attracting culinary tourists by promoting unique gastronomic offerings and cultural heritage (Inversini et al., 2024; Pérez Gálvez et al., 2020). Initiatives such as UNESCO-awarded tea traditions in East Frisia, Germany, enhance tourism by showcasing cultural authenticity. Collaboration between local stakeholders and educational institutions, such as private social dining concepts, has strengthened destination competitiveness and culinary tourism pathways (Sharma et al., 2020).

Tourist Motivations and Experiences

Understanding culinary tourists’ motivations and experiences is vital for destination management. Factors such as the quest for authenticity, perceived value and gastronomic satisfaction influence tourist behaviour (Carvache-Franco et al., 2022; Villagómez-Buele et al., 2020). Sociocultural backgrounds shape food consumption behaviours and evaluations of destination cuisine (Gurbaskan Akyuz, 2019; Lin et al., 2023). Destination marketers must tailor offerings to diverse culinary preferences to enhance visitor engagement and loyalty.

Sustainability and Socio-economic Impacts

Sustainability is integral to culinary tourism's long-term viability. Studies underscore socio-economic factors, stakeholder collaboration and environmental stewardship as key to sustainable gastronomic tourism. For instance, Timor-Leste utilises food tourism for economic diversification and cultural promotion while ensuring environmental sustainability (Berno et al., 2022; Caldicott & Giang, 2022). Transitioning traditional rural livelihoods into culinary tourism, such as cheese tourism in rural areas, fosters rural development and livelihood diversification (Fusté-Forné & Mundet i Cerdan, 2021).

Technological Influence and Innovation

Technology significantly impacts culinary tourism by shaping consumer behaviour and business accessibility. Online platforms in North Sumatra, Indonesia, have facilitated easier access to traditional cuisine, transforming the culinary landscape (Hadromi & Murdani, 2019; Okumus et al., 2018). Innovations like virtual reality in food tourism promotion and social media engagement strategies enhance culinary tourism experiences (De Canio et al., 2022).

Cultural Preservation and Identity

Culinary tourism preserves and promotes cultural traditions and identities. Traditional culinary practices, regional food festivals and gastronomic heritage shape destination images and attract tourists (Okumus et al., 2018; Teixeira & Ribeiro, 2013). Studies in regions such as Córdoba, Spain and Cornwall, England, demonstrate how local cuisine influences tourist behaviour and regional identity (Busby et al., 2013; Hernández-Rojas et al., 2022). Emphasising authenticity in branding efforts differentiates destinations in a competitive tourism market.

Policy and Governance in Culinary Tourism Development

Government policies, regulations and governance structures shape culinary tourism development. Research highlights the role of government interventions in finance, marketing, infrastructure and human resource management in enhancing destination competitiveness (Crespi-Vallbona & Mascarilla-Miró, 2020; Guan et al., 2019). Studies explore financial incentives, destination marketing and food safety regulations (Ahlawat et al., 2019). Additionally, stakeholder collaboration, public-private partnerships and community engagement in culinary tourism development are critical areas for sustainable policy interventions (Lee, Packer, & Scott, 2015). Understanding policy landscapes helps identify challenges and opportunities for sustainable culinary tourism growth.

Research Methodology

This study employs a contextual literature review methodology guided by Fraser and Fredline, 2021, and Rachao et al., 2020, to explore the multifaceted domain of culinary tourism. Utilising the PRISMA protocol, a systematic review process was executed in four steps: keyword database search for article identification, scholarly filtration for screening, manual screening and coding for eligibility, and snowball sampling for inclusion and analysis (Kumar et al., 2022, 2023). This rigorous methodology (see Figure 1) ensures the comprehensive coverage of relevant academic literature on culinary tourism, facilitates an in-depth analysis of its various dimensions, and contributes to the advancement of scholarly understanding in the field.

Step 1: Identification of Keywords and Database

The initial stage of the research entailed a comprehensive search within the Scopus database, using specific keywords encompassing the realms of culinary

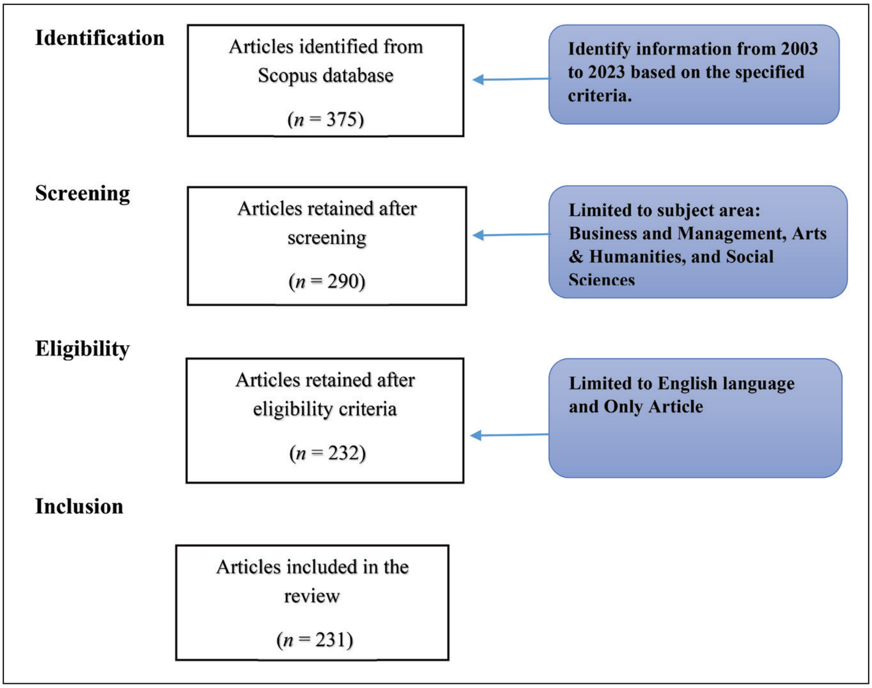

Figure 1. Inclusion and Exclusion Criteria Steps.

tourism and destination development. The search parameters included terms such as ‘Food Tourism’, ‘Culinary Tourism’ and ‘Gastronomy’, in conjunction with phrases like ‘Tourist Destination’ and ‘Tourism Development’. This meticulous process identified 375 relevant articles published between 2003 and 2023, meeting the predetermined criteria for inclusion in the study.

Step 2: Screening and Filtration

Second, we rigorously applied scholarly filtration protocols to refine the articles retrieved from our database. Initially, articles were filtered based on specific subject criteria, focusing on areas such as Business and Management, Arts & Humanities and Social Sciences. Following this stringent screening process, 290 articles were retained for further analysis, ensuring that only relevant scholarly works closely aligned with the research focus were included in the study.

Step 3: Eligibility and Inclusion

In the third step, we meticulously screened the articles, excluding those not in English or unrelated to the culinary tourism domain. Subsequently, we scrutinised the remaining 231 articles to ensure their relevance and alignment with our research objectives.

Descriptive Analysis

The descriptive analysis of the culinary tourism literature encompasses trends in year-wise publications, prominent journals, influential authors, bibliographic coupling and theoretical frameworks, providing insights into research dynamics and scholarly foundations.

Year-wise Publications

Figure 2 visually captures the dynamic evolution of culinary tourism research over time. The graph highlights a significant increase in publications in 2020, influenced by global events and heightened public interest, underscoring the impact of the field. The consistent rise in research output from 2014 to 2019 reflects continuous scholarly attention, while solitary publication in 2003 marks the modest inception and acknowledgement of culinary tourism. Exploration of factors such as global events and technology contributes to a better understanding of the research landscape. Delving into themes, regions, and collaborations offers a nuanced perspective on culinary tourism. In summary, the growth pattern and peak in 2020 (constituting 16.47% of the total) underscore the enduring significance of culinary tourism in academic inquiry, encouraging further exploration and ongoing scholarly engagement.

Figure 2. Year-wise Growth of Culinary Tourism Research.

Journals of Publication

Table 1 outlines the prominent journals in culinary tourism research, considering both document count and Citescore. 'Sustainability Switzerland' leads with 32 publications and a Citescore of 5.8. Notably, 'Tourism Management' stands out with a substantial Citescore of 22.9, despite a lower document count of 12. Journals like 'Current Issues In Tourism' and the 'International Journal of Tourism Research' share 11 documents but differ significantly in Citescores, indicating varying impact. The diverse range of Citescores for journals like 'International Journal of Culture Tourism and Hospitality Research', 'Anatolia', 'Asia Pacific Journal of Tourism Research', 'British Food Journal' and 'International Journal of Gastronomy and Food Science' underscores the nuanced landscape of culinary tourism scholarship. This information aids researchers in identifying influential outlets for their work based on both document count and impact metrics.

Authorship

Table 2 outlines the ten most cited studies in culinary tourism research, shedding light on impactful contributions. Topping the list is Everett and Aitchison's (2008) study in the 'Journal of Sustainable Tourism' boasts 353 citations. Okumus et al. (2007) work in 'Tourism Management' and secure the second spot with 326 citations. Studies by Chang et al. (2010, 2011), published in the 'Annals of Tourism Research' and 'Tourism Management', respectively, claim third and sixth positions with 322 and 230 citations, respectively. Horng and Tsai's (2010) contribution to 'Tourism Management' secures the fourth spot with 246 citations, while du Rand and Heath's (2006) work in 'Current Issues in Tourism' occupies the fifth position with 232 citations. This ranking underscores the enduring influence of specific studies, providing researchers with insights into foundational works that have significantly shaped culinary tourism research.

Table 1. Most Productive Journals.

Source	Documents	Citescore
Sustainability Switzerland	32	5.8
Geojournal of Tourism and Geosites	16	3.2
Tourism Management	12	22.9
Current Issues in Tourism	11	13.7
International Journal of Tourism Research	11	7.6
International Journal of Culture Tourism and Hospitality Research (Consumer Behaviour in Tourism and Hospitality)	8	5.3
Anatolia	7	4.3
Asia Pacific Journal of Tourism Research	6	6.8
British Food Journal	6	5.4
International Journal of Gastronomy and Food Science	6	4.5

Table 2. Ten Most Cited Studies.

Rank	Study	Journal	Citations
1	(Everett & Aitchison, 2008)	*Journal of Sustainable Tourism*	*353*
2	(Okumus et al., 2007)	*Tourism Management*	*326*
3	(Chang et al., 2010)	*Annals of Tourism Research*	*322*
4	(Horng & Tsai, 2010)	*Tourism Management*	*246*
5	(du Rand & Heath, 2006)	*Current Issues in Tourism*	*232*
6	(Chang et al., 2011)	*Tourism Management*	*230*
7	(Horng et al., 2012)	*Tourism Management*	*215*
8	(Kim et al., 2011)	*Tourism Management*	*164*
9	(Lee & Arcodia, 2011)	*International Journal of Tourism Research*	*157*
10	(Stone et al., 2017)	*Journal of Travel Research*	*149*

Bibliographic Coupling

In our study, we utilised bibliographic coupling analysis to identify emerging themes and critical research areas within the culinary tourism literature. Bibliographic coupling is a similarity measure that uses citation analysis to establish connections between documents. Specifically, it identifies instances in which two studies reference a common third work in their bibliographies. This technique enables the identification of similar publications and themes, shedding light on niche areas and recent developments in the field.

Articles were selected as the unit of analysis through bibliographic coupling analysis conducted using VOSviewer, with a threshold set to at least 20 citations per article. This process resulted in the identification of five distinct clusters in 92 documents (see Figure 3), each of which is interconnected through nodes. These clusters represent thematic groupings within the literature, allowing for the recognition of evolving trends and providing insight into potential future research directions. Overall, bibliographic coupling analysis serves as a valuable tool for uncovering thematic clusters and guiding future research in culinary tourism. By identifying areas of commonality and connectivity among scholarly works, this analysis facilitates a deeper understanding of the evolving landscape of research in this domain, ultimately contributing to the advancement of culinary tourism knowledge and scholarship.

Cluster 1: 'Gastronomy and Tourism Dynamics'

Academic research on culinary tourism highlights its growing importance in destination development and marketing. Governments and tourism providers increasingly target senior travellers due to their active participation in gastronomic experiences (Balderas-Cejudo et al., 2019; Berbel-Pineda et al., 2019). However, limited studies explore the socio-demographics of older gastronomic tourists, revealing a gap in understanding their needs and preferences (Campón-Cerro et al., 2017). Gastronomic tourists exhibit diverse behaviours, with some seeking novel culinary experiences while others prefer familiar foods due to health or dietary concerns (Getz & Robinson, 2014; Guan et al., 2019). Additionally, gastronomy significantly influences destination image and visitor satisfaction, shaping tourists' revisit intentions and recommendations. The sustainability of rural tourism is increasingly linked to preserving local culinary traditions, reinforcing gastronomy's economic and cultural role in tourism (Getz & Robinson, 2014; Guan et al., 2019). Addressing these gaps can enhance destination management, marketing strategies and sustainable tourism development. By understanding the motivations and behaviours of gastronomic tourists, research can further contribute to advancing theory and practice in this evolving field.

Cluster 2: Culinary Tourism Dynamics

The cluster 2 research highlights its development, marketing strategies and role in destination branding. Studies emphasise the significance of various forms of knowledge—local, scientific, managerial and political—in shaping food tourism (Bertella, 2011; Boyne et al., 2003; Busby et al., 2013). Scientific and global managerial knowledge play a crucial role in gourmet food tourism, as seen in Lofoten, Norway, while local knowledge and governance drive more traditional food tourism experiences in regions like Maremma Toscana, Italy (Carvache-Franco et al., 2020; Everett & Aitchison, 2008; Gyimóthy, 2017; Horng & Tsai, 2010). Regional food festivals contribute to destination branding, cultural identity and sustainability (Horng & Tsai, 2010, 2012; Kim et al., 2010, 2011). Moreover, tourists' lifestyle preferences, such as those of Slow Food members, influence their engagement with food tourism experiences (Lai et al., 2020). The role of digital platforms, particularly government tourism websites, in promoting culinary tourism has been explored, revealing their importance in shaping perceptions of food destinations. However, gaps in cohesive marketing strategies remain (Kumar et al., 2023; Lee, Packer, & Scott, 2015; Okumus et al., 2007; Plummer et al., 2006; Şahin & Güzel, 2020; Stone et al., 2017). These insights underscore the need for strategic branding, digital engagement and experiential marketing in culinary tourism.

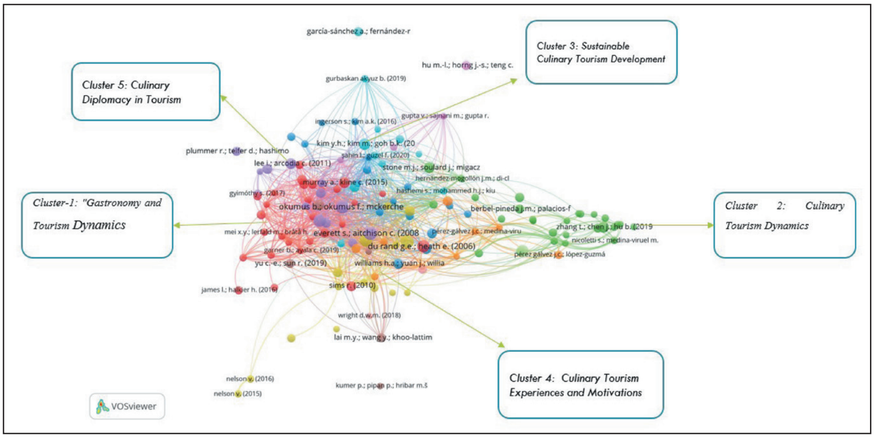

Figure 3. Major Thematic Cluster Identified Through Bibliographic Coupling.

Cluster 3: Sustainable Culinary Tourism Development

Cluster 3 explores sustainable culinary tourism, consumer behaviour, the Michelin-starred chefs' role, and marketing strategies. A key contribution is a theoretical framework based on stakeholder and social practice theory (SCT) to understand sustainable culinary tourism development (Bertella, 2020; Broadway, 2017). Empirical research with restaurant operators identifies socio-economic and environmental issues like over-fishing and supply fluctuations, highlighting the importance of ethical conduct and proactive strategies (Duarte Alonso et al., 2018). Another focus is consumer behaviour, emphasising food involvement, gastronomic identity and travel motivations. Studies show that food enthusiasts exhibit distinct behaviours and preferences, underscoring the need for tailored destination marketing (Gordin et al., 2016; Hillel et al., 2013).

Michelin-starred chefs are identified as influencers of destination appeal through unique gastronomic experiences and the promotion of local products (James & Halkier, 2014). Longitudinal studies on Michelin-starred restaurants reveal strategies like the gastronomisation of rural areas to enhance destination attractiveness (Mei et al., 2017; Murray & Kline, 2015). Additionally, destination marketing strategies, such as Ireland's 'Place on a Plate', highlight the role of local gastronomy in enhancing destination identity, though challenges in stakeholder collaboration and implementation remain (Nilsson et al., 2011; Okumus et al., 2018). Overall, the cluster offers insights into sustainable culinary tourism, providing a comprehensive understanding of its development and opportunities.

Cluster 4: Culinary Tourism Experiences and Motivations

Culinary tourism is an emerging field that explores tourists' motivations, experiences and its impact on destination development. This cluster highlights the significance of gastronomic experiences in enhancing destination attractiveness

(Baah et al., 2020; Bertan, 2020; Bitsani & Kavoura, 2012). Studies investigate factors influencing international tourists' acceptance of local cuisine, the role of restaurants in gastronomic tourism, and motivations for attending wine festivals (Lee, Packer, & Scott, 2015; Luoh et al., 2020). Additionally, cultural background influences on ethnic restaurant experiences and sources of enjoyment in cooking learning tourism are explored (López-Guzmán et al., 2019).

Research in this cluster also examines drivers of destination competitiveness in culinary tourism, focusing on branding and the quality of culinary experiences in shaping tourist satisfaction and behaviour (Ingerson & Kim, 2016; Pérez Gálvez et al., 2017). The economic and social benefits of gastronomic events and festivals are emphasised, showcasing their role in local community development (Sohn & Yuan, 2013; Su et al., 2020). Overall, these studies provide valuable insights into culinary tourism's role in destination marketing, sustainable tourism development and enhancing tourist engagement through memorable gastronomic experiences.

Cluster 5: Culinary Diplomacy in Tourism

This cluster presents a diverse range of articles that focus on the intersection of food, tourism and diplomacy, particularly through the lens of culinary diplomacy or gastrodiplomacy. These studies examined how nations strategically use their cuisine to influence perceptions and promote cultural diplomacy on a global scale (Leong et al., 2017). Research in this cluster contributes to a deeper understanding of the role of food and tourism in national branding and public diplomacy efforts (Mykletun & Gyimóthy, 2010; Suntikul, 2019). By exploring the various ways in which food is used as a tool for diplomatic engagement, these studies shed light on the complex dynamics of gastrodiplomacy in tourism (Nelson, 2015, 2016). Furthermore, these articles highlight the importance of integrated and holistic approaches to gastrodiplomacy, emphasising the need to consider the entire 'foodscape' of a nation as a realm of diplomatic potential. Overall, this cluster underscores the significance of culinary diplomacy in shaping international relations and promoting cultural exchanges through tourism.

Theoretical Perspectives

Theoretical perspectives in culinary tourism provide valuable frameworks for understanding tourist behaviour and destination development. From recreation specialisation to cultural experience theory, these perspectives offer insights into niche market targeting, destination image management and cultural immersion opportunities, enriching both academic research and practical strategies in the field.

Recreation Specialisation Theory

This theory posits that individuals develop specialised interests in recreational activities such as culinary tourism based on their preferences and experiences. Understanding the levels of specialisation among tourists helps destination marketers tailor offerings to specific niche markets, thereby enhancing visitor satisfaction and destination competitiveness (Sánchez-Cañizares & López-Guzmán, 2012). By catering to diverse interests and preferences, destinations can differentiate themselves, attract a wider range of visitors, and contribute to the sustainable growth of culinary tourism.

Place Reputation Theory

This theory focuses on how external audiences perceive a destination and the role of reputation management in shaping this perception. Managing a destination's reputation, particularly in terms of its culinary offerings, is crucial for attracting tourists. Highlighting unique food culture through media and promotions enhances a destination's image and appeal (Nelson, 2015). By leveraging positive perceptions, marketers can differentiate their destination, increase visitor arrivals and foster destination loyalty through positive word-of-mouth.

Attitude Theory

Attitude theory suggests that individuals' attitudes toward activities like gastronomy tourism significantly influence their behavioural intentions and decision-making processes. By examining tourists' attitudes towards culinary experiences, marketers gain insights into motivations and preferences, enabling targeted marketing strategies (Sanchez-Cañizares & Castillo-Canalejo, 2015). Shaping positive attitudes through strategic messaging enhances a destination's appeal, competitiveness and overall tourism revenue.

Gastrodiplomacy Theory

Gastrodiplomacy employs cuisine as a strategic tool for shaping national perceptions and fostering cultural diplomacy. In tourism, it plays a key role in destination branding and international relations (Suntikul, 2019). By showcasing their culinary heritage and engaging visitors through food-related experiences, destinations enhance visibility, encourage cross-cultural understanding and strengthen diplomatic ties, ultimately benefiting their global image and tourism growth.

Cultural Experience Theory

Cultural experience theory underscores the pivotal role of cultural immersion in augmenting tourist satisfaction and enriching tourists' experiences (Stone et al., 2022). In culinary tourism, food serves as a conduit for cultural engagement, allowing visitors to explore local traditions and customs. An academic exploration of this theory offers profound insights into how gastronomic experiences are intertwined with cultural authenticity, shaping both visitor perceptions and destination appeal.

Summary, Research Opportunities and Limitations

Summary and Contribution

This study presents a comprehensive overview of the development of culinary tourism research, examining its evolution over the years and identifying key trends, influential journals, authorship patterns and theoretical perspectives. Through visual representations and quantitative analyses, this study highlights the growing scholarly interest in culinary tourism, with a significant increase in publications observed in 2020. This surge in research output reflects the field's enduring significance and its impact on academic inquiry, spurred by global events and heightened public interest. Moreover, the study delves into thematic clusters within culinary tourism research, offering insights into diverse areas, such as gastronomy and tourism dynamics, culinary tourism dynamics, sustainable culinary tourism development, culinary tourism experiences and motivations and culinary diplomacy in tourism. Each thematic cluster explored critical topics, research gaps and theoretical frameworks, contributing to a deeper understanding of the multifaceted nature of culinary tourism and its implications for destination management, marketing and sustainable tourism development. Furthermore, the identification of research questions within each thematic cluster provides a roadmap for future research endeavours, guiding scholars in addressing key gaps and advancing knowledge in culinary tourism. From understanding the socio-demographic characteristics and preferences of gastronomic tourists to exploring the role of culinary experiences in destination branding and diplomacy, the research questions offer valuable directions for scholarly inquiry and practical interventions in the field. In summary, this study makes a significant contribution to the academic discourse on culinary tourism by synthesising the existing research, identifying emerging trends and outlining future research directions. By providing a comprehensive overview of the field's development, thematic clusters and research questions, this study offers valuable insights to researchers, practitioners and policymakers involved in culinary tourism development and management.

Practical Implications

A comprehensive analysis of culinary tourism research has several practical implications for stakeholders in the tourism industry. First, destination managers should capitalise on the increasing interest in culinary tourism by diversifying their gastronomic offerings and tailoring experiences to cater to different market segments, including seniors, food enthusiasts and cultural explorers. This necessitates collaboration with local stakeholders such as chefs, producers and festival organisers to curate authentic and immersive culinary experiences that align with destination branding efforts. In addition, destination marketers can leverage digital platforms to promote destination-specific gastronomic content and engage with prospective visitors, thereby enhancing destination visibility and attracting culinary tourists. Furthermore, policymakers should prioritise sustainable culinary tourism development by implementing regulations that support environmental stewardship, cultural preservation and socioeconomic benefits for local communities. This entails fostering partnerships between government agencies, businesses and community organisations to ensure responsible tourism practices and the equitable distribution of economic gains. Overall, these practical implications underscore the importance of strategic planning, collaboration and sustainability for harnessing the potential of culinary tourism for destination development and competitiveness.

Interwoven Relationships Between the Thematic Clusters

The interwoven relationships between thematic clusters in culinary tourism research underscore the multidimensional nature of this field and its interconnectedness. Cluster 1, which focuses on gastronomy and tourism dynamics, lays the foundation for highlighting the significance of gastronomy in destination development and visitor satisfaction. This sets the stage for Cluster 2, which explores culinary tourism dynamics, including knowledge exchange and destination branding, building upon the understanding of the gastronomic importance established in Cluster 1. Cluster 3 delves deeper into sustainable culinary tourism development, bridging the gap between gastronomic significance and practical implementation by addressing socioeconomic and environmental issues. Meanwhile, Cluster 4 examines culinary tourism experiences and motivations, providing insights into tourist behaviour and destination competitiveness, thereby enriching the discussions initiated in Clusters 1–3. Finally, Cluster 5 explored culinary diplomacy in tourism, linking gastronomic experiences with cultural diplomacy efforts on a global scale, thus demonstrating the intricate connections between culinary tourism, diplomacy and international relations.

Cross-fertilisation of Theoretical Perspectives

The cross-fertilisation of theoretical perspectives in culinary tourism research offers a nuanced understanding of tourist behaviour and destination development. By integrating Recreation Specialisation Theory with Attitude Theory, researchers can discern how specialised interests influence tourists' attitudes towards culinary experiences, thereby informing targeted marketing strategies tailored to niche markets. Furthermore, the fusion of Place Reputation Theory with Gastrodiplomacy Theory illuminates how destination image management intersects diplomatic efforts, emphasising the strategic leveraging of culinary heritage to enhance a destination's global reputation and diplomatic standing. Cultural Experience Theory, when integrated with Place Reputation Theory, underscores the significance of authentic cultural immersion in shaping destination perceptions, suggesting that effective reputation management should prioritise highlighting a destination's culinary authenticity to foster memorable cultural experiences for tourists. This interdisciplinary approach facilitates a comprehensive framework for destination marketers and policymakers to craft holistic strategies that capitalise on culinary tourism's potential for sustainable growth and international engagement.

Limitations and Future Research Directions on Thematic Cluster

The study's limitations include reliance on the Scopus database for data extraction and potentially overlooking non-indexed journals. Future research could mitigate this limitation by accessing additional databases, such as WOS, EBSCO, Google Scholar and ProQuest for a more comprehensive review. Second, the exclusion of books, edited book chapters, and conference proceedings may have led to the omission of valuable insights. Subsequent scholars could incorporate these sources to enhance culinary tourism research. Finally, the study's focus on specific areas such as business, management, social science and art humanists within culinary tourism contexts may limit the generalizability of the findings. Future scholars should explore other relevant fields such as sociology, psychology, economics, or interdisciplinary studies to provide a broader perspective on culinary tourism. Table 3 provides potential future research directions in the culinary tourism research area

Table 3. Potential Future Research Direction.

Thematic Clusters	Research Questions
Gastronomy and culinary tourism dynamics	1. How do socio-demographic characteristics and motivations of gastronomic tourists vary across market segments? 2. What role do regional food festivals and local gastronomy play in destination branding and visitor satisfaction? 3. How can digital platforms and marketing strategies enhance tourists' culinary experiences and destination choices? 4. What are the economic, cultural and sustainability implications of promoting local culinary traditions?
Culinary tourism development	1. How does knowledge exchange between local and scientific food practices influence food tourism development? 2. What are the strengths and shortcomings of digital platforms in promoting culinary tourism destinations? 3. How can cohesive marketing strategies be developed to enhance culinary tourism experiences?
Sustainable culinary tourism	1. What socio-economic and environmental challenges impact sustainable culinary tourism, and how can they be mitigated? 2. How does food involvement influence consumer behaviour and sustainable destination marketing? 3. How can Michelin-starred chefs and other stakeholders contribute to local gastronomic sustainability?
Culinary tourism experiences and motivations	1. What factors influence tourists' acceptance of local cuisine, and how do cultural backgrounds shape perceptions? 2. How do culinary experiences impact tourist satisfaction, behavioural intentions and sustainable development? 3. How do food festivals, restaurants and local gastronomy contribute to destination competitiveness?
Culinary diplomacy in tourism	1. How do nations leverage cuisine for cultural diplomacy and international tourism branding? 2. What are the opportunities and challenges in implementing culinary diplomacy initiatives? 3. How do perceptions of a nation's culinary identity impact its tourism appeal and visitor preferences?

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

References

Ahlawat, M., Sharma, P., & Gautam, P. K. (2019). Slow Food and Tourism development: A case study of slow food tourism in Uttarakhand, India. *Geo Journal of Tourism and Geosites*, *26*(3), 751–760.

Anton Martin, C., Camarero Izquierdo, C., & Laguna-Garcia, M. (2021). Culinary tourism experiences: The effect of iconic food on tourist intentions. *Tourism Management Perspectives*, *40*, 100911. https://doi.org/10.1016/j.tmp.2021.100911

Baah, N. G., Bondzi-Simpson, A., & Ayeh, J. K. (2020). How neophilia drives international tourists' acceptance of local cuisine. *Current Issues in Tourism*, *23*(18), 2302–2318. https://doi.org/10.1080/13683500.2019.1619676

Balderas-Cejudo, A., Patterson, I., & Leeson, G. W. (2019). Senior foodies: A developing niche market in gastronomic tourism. *International Journal of Gastronomy and Food Science*, *16*, 100152. https://doi.org/10.1016/j.ijgfs.2019.100152

Berbel-Pineda, J. M., Palacios-Florencio, B., Ramírez-Hurtado, J. M., & Santos-Roldán, L. (2019). Gastronomic experience as a factor of motivation in the tourist movements. *International Journal of Gastronomy and Food Science*, *18*, 100171. https://doi.org/10.1016/j.ijgfs.2019.100171

Berno, T., Rajalingam, G., Miranda, A. I., & Ximenes, J. (2022). Promoting sustainable tourism futures in Timor-Leste by creating synergies between food, place and people. *Journal of Sustainable Tourism*, *30*(2–3), 500–514. https://doi.org/10.1080/09669582.2021.1895819

Bertan, S. (2020). Impact of restaurants in the development of gastronomic tourism. *International Journal of Gastronomy and Food Science*, *21*, 100232. https://doi.org/10.1016/j.ijgfs.2020.100232

Bertella, G. (2011). Knowledge in food tourism: The case of Lofoten and Maremma Toscana. *Current Issues in Tourism*, *14*(4), 355–371. https://doi.org/10.1080/13683500.2010.489638

Bertella, G. (2020). Re-thinking sustainability and food in tourism. *Annals of Tourism Research*, *84*, 103005. https://doi.org/10.1016/j.annals.2020.103005

Bitsani, E., & Kavoura, A. (2012). Connecting oenological and gastronomical tourisms at the wine roads, Veneto, Italy, for the promotion and development of agrotourism. *Journal of Vacation Marketing*, *18*(4), 301–312. https://doi.org/10.1177/1356766712460738

Boyne, S., Hall, D., & Williams, F. (2003). Policy, support and promotion for food-related tourism initiatives. *Journal of Travel & Tourism Marketing*, *14*(3–4), 131–154. https://doi.org/10.1300/J073v14n03_08

Broadway, M. J. (2017). 'Putting place on a plate' along the West Cork Food Trail. *Tourism Geographies*, *19*(3), 467–482. https://doi.org/10.1080/14616688.2016.1276615

Bruwer, J., & Lesschaeve, I. (2012). Wine tourists' destination region brand image perception and antecedents: Conceptualization of a winescape framework. *Journal of Travel & Tourism Marketing*, *29*(7), 611–628. https://doi.org/10.1080/10548408.2012.719819

Busby, G., Huang, R., & Jarman, R. (2013). The Stein effect: An alternative film-induced tourism perspective. *International Journal of Tourism Research*, *15*(6), 570–582.

Caldicott, R. W., & Giang, T. H. T. (2022). Developing resilience for small island tourism planning: A qualitative design infusing the sustainability trilogy with three streams of resilience thinking. *Journal of Marine and Island Cultures*, *11*(1), 1–30.

Campón-Cerro, A. M., Folgado-Fernández, J. A., & Hernández-Mogollón, J. M. (2017). Rural destination development based on olive oil tourism: The impact of residents' community attachment and quality of life on their support for tourism development. *Sustainability*, *9*(9), 1624.

Carvache-Franco, M., Carvache-Franco, W., Carvache-Franco, O., Hernández-Lara, A. B., & Buele, C. V. (2020). Segmentation, motivation, and sociodemographic aspects of tourist demand in a coastal marine destination: A case study in Manta (Ecuador). *Current Issues in Tourism*, *23*(10), 1234–1247.

Carvache-Franco, M., Orden-Mejía, M., Carvache-Franco, W., Carmen Lapo, M. d., & Carvache-Franco, O. (2022). Gastronomy motivations as predictors of satisfaction at coastal destinations. *Sustainability*, *14*(18), 11437.

Chang, R. C. Y., Kivela, J., & Mak, A. H. N. (2010). Food preferences of Chinese tourists. *Annals of Tourism Research*, *37*(4), 989–1011. https://doi.org/10.1016/j.annals.2010.03.007

Chang, R. C. Y., Kivela, J., & Mak, A. H. N. (2011). Attributes that influence the evaluation of travel dining experience: When East meets West. *Tourism Management*, *32*(2), 307–316. https://doi.org/10.1016/j.tourman.2010.02.009

Crespi-Vallbona, M., & Mascarilla-Miró, O. (2020). Wine lovers: Their interests in tourist experiences. *International Journal of Culture, Tourism and Hospitality Research*, *14*(2), 239–258. https://doi.org/10.1108/IJCTHR-05-2019-0095

De Canio, F., Martinelli, E., Peruzzini, M., & Cavallaro, S. (2022). Experiencing a food production site using wearable devices: The indirect impact of immersion and presence in VR tours. *Sustainability*, *14*(5), 3064.

du Rand, G. E., & Heath, E. (2006). Towards a framework for food tourism as an element of destination marketing. *Current Issues in Tourism*, *9*(3), 206–234. https://doi.org/10.2164/cit/226.0

Duarte Alonso, A., Kok, S., & O'Brien, S. (2018). 'We are only scratching the surface': A resource-based and dynamic capabilities approach in the context of culinary tourism development. *Tourism Recreation Research*, *43*(4), 511–526. https://doi.org/10.1080/02508281.2018.1473196

Duarte Alonso, A., Martens, W., & Ong, J. L. T. (2022). Food tourism development in wine regions: Perspectives from the supply side. *Current Issues in Tourism*, *25*(12), 1968–1986. https://doi.org/10.1080/13683500.2021.1935791

Everett, S., & Aitchison, C. (2008). The role of food tourism in sustaining regional identity: A case study of Cornwall, South West England. *Journal of Sustainable Tourism*, *16*(2), 150–167. https://doi.org/10.2167/jost696.0

Fusté-Forné, F., & Mundet i Cerdan, L. (2021). A land of cheese: From food innovation to tourism development in rural Catalonia. *Journal of Tourism and Cultural Change*, *19*(2), 166–183. https://doi.org/10.1080/14766825.2020.1797757

Getz, D., & Robinson, R. N. S. (2014). Foodies and food events. *Scandinavian Journal of Hospitality and Tourism*, *14*(3), 315–330. https://doi.org/10.1080/15022250.2014.946227

Ghosh, S., & Das, J. K. (2017). Problems & perspectives of financing tourism industry in West Bengal: An empirical study. *Review of Professional Management*, *15*(1), 9–16.

Gordin, V., Trabskaya, J., & Zelenskaya, E. (2016). The role of hotel restaurants in gastronomic place branding. *International Journal of Culture, Tourism and Hospitality Research*, *10*(1), 81–90. https://doi.org/10.1108/IJCTHR-05-2015-0049

Guan, J., Gao, J., & Zhang, C. (2019). Food heritagization and sustainable rural tourism destination: The case of China's Yuanjia Village. *Sustainability*, *11*(10), 2858.

Gurbaskan Akyuz, B. (2019). Factors that influence local food consumption motivation and its effects on travel intentions. *Anatolia*, *30*(3), 358–367. https://doi.org/10.1080/13032917.2019.1595072

Gyimóthy, S. (2017). The reinvention of terroir in Danish food place promotion. *European Planning Studies*, *25*(7), 1200–1216. https://doi.org/10.1080/09654313.2017.1281229

Hadromi, H., & Murdani, M. (2019). The development strategy of fish fumigation industry as a driving force of culinary tourism destination in Bandarharjo, Semarang-Indonesia. *GeoJournal of Tourism and Geosites*, *25*(2), 383–390.

Hernández-Rojas, R. D., Huete-Alcocer, N., & Hidalgo-Fernández, A. (2022). Analysis of the impact of traditional gastronomy on loyalty to a world heritage destination. *International Journal of Gastronomy and Food Science*, *30*, 100585. https://doi.org/10.1016/j.ijgfs.2022.100585

Hillel, D., Belhassen, Y., & Shani, A. (2013). What makes a gastronomic destination attractive? Evidence from the Israeli Negev. *Tourism Management*, *36*, 200–209. https://doi.org/10.1016/j.tourman.2012.12.006

Horng, J.-S., Liu, C.-H., Chou, H.-Y., & Tsai, C.-Y. (2012). Understanding the impact of culinary brand equity and destination familiarity on travel intentions. *Tourism Management*, *33*(4), 815–824. https://doi.org/10.1016/j.tourman.2011.09.004

Horng, J.-S., & Tsai, C.-T. (2010). Government websites for promoting East Asian culinary tourism: A cross-national analysis. *Tourism Management*, *31*(1), 74–85. https://doi.org/10.1016/j.tourman.2009.01.009

Horng, J.-S., & Tsai, C.-T. (2012). Exploring marketing strategies for culinary tourism in Hong Kong and Singapore. *Asia Pacific Journal of Tourism Research*, *17*(3), 277–300. https://doi.org/10.1080/10941665.2011.625432

Ingerson, S., & Kim, A. K. (2016). Exploring the value of an ethnic restaurant experience: A consumer perspective towards Korean restaurants. *Tourism Recreation Research*, *41*(2), 199–212. https://doi.org/10.1080/02508281.2016.1151163

Inversini, A., Aeberli, C., & Talhouk, S. N. (2024). Smart host-guest relationship in a rural context: The case of Lebanon. *Journal of Destination Marketing & Management*, *31*, 100851. https://doi.org/10.1016/j.jdmm.2023.100851

James, L., & Halkier, H. (2014). Regional development platforms and related variety: Exploring the changing practices of food tourism in North Jutland, Denmark. *European Urban and Regional Studies*, *23*(4), 831–847. https://doi.org/10.1177/0969776414557293

Kanupriya. (2024). Digital circular economy and the global ecotourism sector: A critical perspective. *Review of Professional Management*, 97–108. https://doi.org/10.1177/09728686241254586

Kaushal, V., & Yadav, R. (2021). Understanding customer experience of culinary tourism through food tours of Delhi. *International Journal of Tourism Cities*, *7*(3), 683–701. https://doi.org/10.1108/IJTC-08-2019-0135

Kim, Y. H., Kim, M., & Goh, B. K. (2011). An examination of food tourist's behavior: Using the modified theory of reasoned action. *Tourism Management*, *32*(5), 1159–1165. https://doi.org/10.1016/j.tourman.2010.10.006

Kovalenko, A., Dias, Á., Pereira, L., & Simões, A. (2023). Gastronomic experience and consumer behavior: Analyzing the influence on destination image. *Foods*, *12*(2), 315.

Kumar, S., & Gupta, A. (2019). Trend analysis of foreign direct investment in tourism industry in India: An empirical study. *Review of Professional Management*, *17*(1), 70–83.

Kumar, S., Saini, A., Kumar, S., & Kumar, V. (2022). Bibliometric analysis on Internet of Things (IoT) and tourism industry: A study based on Scopus database. *South Asian Journal of Tourism and Hospitality*, *2*(1), 76–95.

Kumar, S., Valeri, M., Kumar, V., Kumar, S., & Bhatt, I. K. (2023). Mapping the research trends on sports tourism and sustainability: A bibliometric analysis. *Sport and Tourism*, 1–22.

Lai, I. K. W., Lu, D., & Liu, Y. (2020). Experience economy in ethnic cuisine: A case of Chengdu cuisine. *British Food Journal*, *122*(6), 1801–1817. https://doi.org/10.1108/BFJ-08-2018-0517

Lee, A. H. J., Wall, G., & Kovacs, J. F. (2015). Creative food clusters and rural development through place branding: Culinary tourism initiatives in Stratford and Muskoka, Ontario, Canada. *Journal of Rural Studies*, *39*, 133–144. https://doi.org/10.1016/j.jrurstud.2015.05.001

Lee, I., & Arcodia, C. (2011). The role of regional food festivals for destination branding. *International Journal of Tourism Research*, *13*(4), 355–367. https://doi.org/10.1002/jtr.852

Lee, K.-H., Packer, J., & Scott, N. (2015). Travel lifestyle preferences and destination activity choices of Slow Food members and non-members. *Tourism Management*, *46*, 1–10. https://doi.org/10.1016/j.tourman.2014.05.008

Leong, Q.-L., Ab Karim, S., Awang, K. W., & Abu Bakar, A. Z. (2017). An integrated structural model of gastronomy tourists' behaviour. *International Journal of Culture, Tourism and Hospitality Research*, *11*(4), 573–592. https://doi.org/10.1108/IJCTHR-05-2016-0047

Lin, J., Cui, Q., & Xu, H. (2023). Beyond novelty–familiarity dualism: The food consumption spectrum of Chinese outbound tourists. *Journal of China Tourism Research*, *19*(2), 155–175. https://doi.org/10.1080/19388160.2022.2049942

Luoh, H.-F., Tsaur, S.-H., & Lo, P.-C. (2020). Cooking for fun: The sources of fun in cooking learning tourism. *Journal of Destination Marketing & Management*, *17*, 100442. https://doi.org/10.1016/j.jdmm.2020.100442

Marek, A., & Wiśniewska, A. (2021). Culinary tourism in Lower Silesia (Poland) in 2014–2017. *Geo Journal of Tourism and Geosites*, *34*(1), 226–232.

Mei, X. Y., Lerfald, M., & Bråtå, H. O. (2017). Networking and collaboration between tourism and agriculture: Food tourism experiences along the National Tourist Routes of Norway. *Scandinavian Journal of Hospitality and Tourism*, *17*(1), 59–75. https://doi.org/10.1080/15022250.2016.1262514

Murray, A., & Kline, C. (2015). Rural tourism and the craft beer experience: Factors influencing brand loyalty in rural North Carolina, USA. *Journal of Sustainable Tourism*, *23*(8–9), 1198–1216. https://doi.org/10.1080/09669582.2014.987146

Mykletun, R. J., & Gyimóthy, S. (2010). Beyond the renaissance of the traditional Voss sheep's-head meal: Tradition, culinary art, scariness and entrepreneurship. *Tourism Management*, *31*(3), 434–446. https://doi.org/10.1016/j.tourman.2009.04.002

Nelson, V. (2015). Place reputation: Representing Houston, Texas as a creative destination through culinary culture. *Tourism Geographies*, *17*(2), 192–207. https://doi.org/10.1080/14616688.2014.986751

Nelson, V. (2016). Peru's image as a culinary destination. *Journal of Cultural Geography*, *33*(2), 208–228. https://doi.org/10.1080/08873631.2016.1153269

Nilsson, J. H., Svärd, A.-C., Widarsson, Å., & Wirell, T. (2011). 'Cittáslow' eco-gastronomic heritage as a tool for destination development. *Current Issues in Tourism*, *14*(4), 373–386. https://doi.org/10.1080/13683500.2010.511709

Okumus, B., Okumus, F., & McKercher, B. (2007). Incorporating local and international cuisines in the marketing of tourism destinations: The cases of Hong Kong and Turkey. *Tourism Management*, *28*(1), 253–261. https://doi.org/10.1016/j.tourman.2005.12.020

Okumus, B., Xiang, Y., & Hutchinson, J. (2018). Local cuisines and destination marketing: Cases of three cities in Shandong, China. *Asia Pacific Journal of Tourism Research*, *23*(6), 584–599. https://doi.org/10.1080/10941665.2018.1469521

Park, E., & Widyanta, A. (2022). Food tourism experience and changing destination foodscape: An exploratory study of an emerging food destination. *Tourism Management Perspectives*, *42*, 100964. https://doi.org/10.1016/j.tmp.2022.100964

Pérez Gálvez, J. C., Torres-Matovelle, P., Molina-Molina, G., & González Santa Cruz, F. (2020). Gastronomic clusters in an Ecuadorian tourist destination: The case of the province of Manabí. *British Food Journal*, *122*(12), 3917–3934. https://doi.org/10.1108/BFJ-11-2019-0870

Pérez Gálvez, J. C., Torres-Naranjo, M., Lopez-Guzman, T., & Carvache Franco, M. (2017). Tourism demand of a WHS destination: An analysis from the viewpoint of gastronomy. *International Journal of Tourism Cities*, *3*(1), 1–16. https://doi.org/10.1108/IJTC-10-2016-0039

Plummer, R., Telfer, D., & Hashimoto, A. (2006). The rise and fall of the Waterloo-Wellington Ale Trail: A study of collaboration within the tourism industry. *Current Issues in Tourism*, *9*(3), 191–205. https://doi.org/10.2167/cit/194.0

Şahin, İ., & Güzel, F. Ö. (2020). Do experiential destination attributes create emotional arousal and memory? A comparative research approach. *Journal of Hospitality Marketing & Management*, *29*(8), 956–986. https://doi.org/10.1080/19368623.2020.1746214

Sanchez-Cañizares, S., & Castillo-Canalejo, A. M. (2015). A comparative study of tourist attitudes towards culinary tourism in Spain and Slovenia. *British Food Journal*, *117*(9), 2387–2411. https://doi.org/10.1108/BFJ-01-2015-0008

Sánchez-Cañizares, S. M., & López-Guzmán, T. (2012). Gastronomy as a tourism resource: Profile of the culinary tourist. *Current Issues in Tourism*, *15*(3), 229–245. https://doi.org/10.1080/13683500.2011.589895

Sharma, S., Ram, P., & Srivastava, S. (2020). Intention of hospitality students towards entrepreneurial education. *Review of Professional Management*, *18*(1), 27–38.

Sohn, E., & Yuan, J. (2013). Who are the culinary tourists? An observation at a food and wine festival. *International Journal of Culture, Tourism and Hospitality Research*, *7*(2), 118–131. https://doi.org/10.1108/IJCTHR-04-2013-0019

Soonsan, N., Phakdee-auksorn, P., & Suksirisopon, P. (2023). Determining food attributes for measuring and evaluating a gastronomic destination's appeal to visitors. *Journal of Hospitality and Tourism Insights*, *6*(5), 1755–1775. https://doi.org/10.1108/JHTI-02-2022-0048

Stone, M. J., Migacz, S., & Wolf, E. (2022). Learning through culinary tourism and developing a culinary tourism education strategy. *Journal of Tourism and Cultural Change*, *20*(1–2), 177–195. https://doi.org/10.1080/14766825.2021.1876078

Stone, M. J., Soulard, J., Migacz, S., & Wolf, E. (2017). Elements of memorable food, drink, and culinary tourism experiences. *Journal of Travel Research*, *57*(8), 1121–1132. https://doi.org/10.1177/0047287517729758

Su, D. N., Johnson, L. W., & O'Mahony, B. (2020). Analysis of push and pull factors in food travel motivation. *Current Issues in Tourism*, *23*(5), 572–586. https://doi.org/10.1080/13683500.2018.1553152

Suntikul, W. (2019). Gastrodiplomacy in tourism. *Current Issues in Tourism*, *22*(9), 1076–1094. https://doi.org/10.1080/13683500.2017.1363723

Teixeira, V. A. V., & Ribeiro, N. F. (2013). The lamprey and the partridge: A multi-sited ethnography of food tourism as an agent of preservation and disfigurement in Central Portugal. *Journal of Heritage Tourism*, *8*(2–3), 193–212.

Testa, R., Galati, A., Schifani, G., Di Trapani, A. M., & Migliore, G. (2019). Culinary tourism experiences in agri-tourism destinations and sustainable consumption: Understanding Italian tourists' motivations. *Sustainability*, *11*(17), 4588.

Villagómez-Buele, C., Carvache-Franco, M., Carvache-Franco, O., Carvache-Franco, W., & Villavicencio-Párraga, M. (2020). Gastronomic experience as a factor of motivation and satisfaction in coastal destinations. *Journal of Environmental Management & Tourism*, *11*(6), 1328–1337.

Wondirad, A., Kebete, Y., & Li, Y. (2021). Culinary tourism as a driver of regional economic development and socio-cultural revitalization: Evidence from Amhara National Regional State, Ethiopia. *Journal of Destination Marketing & Management*, *19*, 100482.

Research Paper

A Systematic Literature Review on the Impact of Capital Structure on Corporate Financial Performance

Review of Professional Management:
A Journal of Management
24(1) 82–93, 2026

DOI: 10.1177/09728686251404428
rpm.ndimdelhi.org

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Abstract

The study attempts to consider the theoretical foundations and empirical literature on the relationship between the capital structure of a firm and corporate financial performance using a systematic literature review approach. Systematic literature review methodology attempts to study the existing literature on a research question in a scientific manner that is transparent and replicable. It is a methodology that is becoming increasingly popular in research due to the transparency and replicability of the approach. Research papers reviewed were compiled based on a systematic approach, using research papers indexed in web of science database. Literature surveyed reveals that studies have been conducted at the economy level, sectoral level (manufacturing, services) and for specific industries. While most studies conclude that there is indeed a significant impact of capital structure of a firm on the financial performance, they differ in their opinions on the nature of the impact. The studies lack unanimity on whether the level of debt employed in the capital has a positive or negative impact on financial performance. Differences have been observed in terms of the impact of short-term debt and long-term debt on financial performance as well.

Keywords

Capital structure, leverage, financial performance, profit, systematic literature review, financial economics, business policy

Received 24 August 2024; accepted 31 October 2025

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Introduction

Capital structure is among the key financial decisions in a firm. Capital structure represents the proportionate relationship between debt and equity (Pandey, 2010). Long-term sources of finance are said to constitute the capital structure rather than short-term sources. It is a decision which influences the shareholders' return and risk. Thus, capital structure decision has implications on the financial performance of a company. This study examines the state of literature on the relationship between these two critical aspects, namely capital structure and corporate financial performance. Although there are many theories pertaining to the relation between these two variables, there is a need for empirical testing as financial performance is a key variable for the survival of a firm. The objective of this study is to focus on studies specific to the relation between capital structure and financial performance, integrate the results, and synthesise and present them in a summarised manner.

One of the early studies focussing on capital structure was conducted by Modigliani and Miller in 1958. The study focussed on capital structure and the market value of a firm, wherein they argued that in perfect capital markets, the market value of a firm is not affected by changes in capital structure (Pandey, 2010). A later study by Modigliani and Miller in 1963 showed that in the presence of taxes, the debt component in the capital structure of a firm can enhance the value of the firm (Pandey, 2010). Miller in 1977 conducted a study which considered both corporate and personal taxes and concluded that the benefits due to the use of corporate borrowing in the capital structure are reduced by personal tax loss (Pandey, 2010). According to the trade-off theory, although debt in the capital structure is beneficial due to the tax advantage, it also brings the disadvantages associated with financial distress and agency costs (Pandey, 2010). The optimum level of debt could be in the scenario where the advantage due to tax benefits of debt is balanced by the cost of financial distress (Pandey, 2010). As per the pecking order theory, the preferred option for financing by managers is internal finance, followed by debt and finally issue of shares (Pandey, 2010).

The theories related to capital structure are not new. Yet, a consensus on what could be the optimal capital structure has not been arrived at yet (Abor, 2005). There has been no dearth of empirical papers trying to test the impact of capital structure on various parameters of financial performance. But when it comes to the outcomes of these empirical papers, the results have been divergent on the nature of the impact whether positive or negative. The significance of capital structure decision is indisputable, but assessments of the nature of the impact have been inconclusive. Apart from the divergent conclusions, various papers have resorted to varying theories to support their conclusions, including trade-off theory, agency costs approach and pecking-order theory. Thus, when the conclusions of empirical studies have been divergent, can research enable a practising manager to get reliable guidance while taking such a critical decision. Faced with such diverging conclusions and divergent reasoning for the same, the current study has been performed with the objective to analyse, interpret, synthesise and arrive at coherent conclusions and practical implications from the current literature on the impact of capital structure on financial performance by adopting a systematic approach that is replicable, scientific and transparent.

The paper is divided into keywords, introduction, methodology, systematic literature review, results and discussion, findings, policy implications and conclusion and finally bibliography.

Methodology

Systematic literature review, as compared to normal literature reviews, performs the review in a systematic manner. Tranfield et al. (2003) state that systematic literature review involves adopting a replicable, scientific and transparent process for conducting the review of literature; consequently, the bias in the review gets reduced. Systematic literature review helps in identifying the key scientific contributions in a field (Tranfield et al., 2003). The systematic literature review for this paper was conducted over multiple stages. In the first stage, 'Web of Science' was selected as the search database. Within Web of Science, the search was limited to the 'Core Collection'. Web of Science Core Collection is the world's leading citation database containing records of articles from the highest-impact journals worldwide (Web of Science Core Collection, 2021). In the second stage, the keywords were decided. The keywords decided were 'capital structure' and 'financial performance'. The Web of Science database was searched to get the list of all research papers with the keywords in any of the fields. The search string used was 'ALL = "Capital Structure" and "Financial Performance"'. The keyword 'ALL' searches for the terms in all the fields in the record. The Boolean operator 'And' was used to ensure that Web of Science finds records with both the terms 'Capital Structure' and 'Financial Performance' (Search Operators, 2023). The search string was given in quotations to ensure exact text match. Overall '160' research papers came in the search results, of which 4 research papers were not retrievable for download. In the third stage the 156 Web of Science indexed research papers were studied. These papers were initially analysed based on title, abstract and keywords. Apart from the subject focus on capital structure and financial performance, studies focussing primarily on profit-oriented corporate firms were selected. Only papers published in English language were selected. Tranfield et al. (2003) suggests detailed evaluation of the full text for finally selecting the papers for the systematic literature review. So, subsequent to the initial screening, from among the articles found as relevant, a further reading of the full text of the articles were done. This ensured that only articles pertaining to the specific topic were included. Based on such detailed analysis in multiple stages, it was found that 20 research papers were focussing specifically on the relationship between capital structure on Corporate Financial Performance. These papers were used for the systematic literature review. A systematic literature should be able to bring out the key emerging themes and research questions (Tranfield et al., 2003). The key themes from the selected papers are discussed in this study, along with the key findings, policy implications and possible research questions. The steps involved in the systematic literature review process are shown in Figure 1. The Web of Science database search was conducted during November 2023.

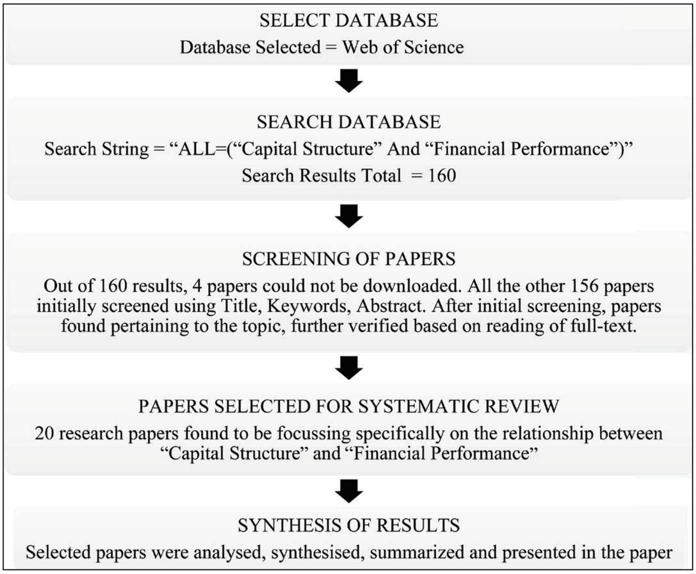

Figure 1. Systematic Literature Review Flowchart.

Systematic Literature Review

Gleason et al. (2000) studied the nature of influence of capital structure on financial performance for retailers in 14 European countries. The relationship between capital structure and performance was found to be negative. The possible reason was that excess debt was taken to tackle agency issues, which may ultimately be lowering the performance of a firm.

Phillips and Sipahioglu (2004) studied the capital structure and corporate performance with regard to hotel companies. The study relied on data collected from quoted organisations in the United Kingdom. The study resulted in the conclusion that no significant relationship could be established between the proportion of debt in a firm's capital structure and financial performance.

Dawar (2014) studied the impact of the choice of capital structure on the performance in the case of listed Indian firms, using return on assets (ROA) and return on equity (ROE) as measures of financial performance. The results indicated that debt has a negative effect on profitability.

Bayaraa (2017) examined the ratios which determine the financial performance of Mongolian companies. The companies were categorised into six major sectors. The results confirmed that capital structure is one of the determinants of financial performance in Mongolia. Sector wise, only for the mining and agricultural sector was the ratio of long-term debt to total assets found to be significant. The ratio of short-term debt to total assets was found to be a significant determinant in the case of the service sector alone.

Bărbuță-Mișu et al. (2019) investigated how financial variables influence firms' financial performance. Results indicated that leverage positively affected firm performance.

Botta (2019) investigated an optimal capital structure for Italian small and medium enterprises (SME) in the hotel sector. The study analysed the relationship between financing decisions and financial performance. The results pointed towards an optimal capital structure, while too little or too much debt both adversely impacted the financial performance. The results give support to the predictions of the trade-off theory.

Özcan (2019) examined how the capital structure affects profitability in the case of publicly traded airports. The study relied on a sample from 20 countries. The results showed that long-term leverage and total leverage reduced the ROA, but were associated with higher ROE.

Ramli et al. (2019) examined the determinants of capital structure for its impact on financial performance of firms in Malaysia and Indonesia. Also, the mediation effect of firm leverage was studied. The finding of the study was that there is a positive significant correlation between firm leverage and firm financial performance in the case of the Malaysian sample.

Mardones and Cuneo (2020) analysed the financial performance of Latin American companies with regard to the relationship with capital structure and ownership structure. The study focussed on companies from Brazil, Chile, Mexico and Peru. As for the effect of leverage on financial performance, as mixed results were seen regarding the impact of short-term debt and long-term debt, the results were inconclusive.

Parvin et al. (2020) analysed the effect of capital structure on financial performance focussing on micro-finance institutions from Bangladesh. The effect of equity to asset ratio (EAR) on ROA was found to be positive and significant.

Ullah et al. (2020) studied the role of capital structure in determining the financial performance. The study focussed on 90 textile firms listed in Pakistan Stock Exchange (PSX). Return on equity was used for measuring for financial performance. A negative and significant relationship was found between debt-to-equity ratio and financial performance.

Xu et al. (2021) studied how capital structure impacts financial performance in the case of listed agricultural companies from China. ROA and ROE were the variables used as measures of financial performance. Total debt, short-term debt and long-term debt ratios were used as measures for capital structure. The variables total debt ratio and short-term debt ratio were found to negatively impact the financial performance, whereas the variable long-term debt ratio was found to have no significant impact on ROA and ROE.

Ghardallou (2022) studied the relationship between financing decisions and firm performance. Quantile regression methodology was employed in the study. The sample studied included 120 listed non-financial companies. The companies were listed in Tadawul Stock Exchange during the period 2017–2020. Results demonstrated that more debts adversely affected the performance.

Luo and Jiang (2022) studied the impact that corporate capital structure has on financial performance. The methodology employed was based on convolutional neural network. The conclusion arrived at was that short-term liabilities can have a favourable influence on the operating income of a company.

Ulbert et al. (2022) studied whether the golden ratio–based capital structure had a positive impact on financial performance. They used data from manufacturing and service firms from the United States and Europe. The results affirmed that capital structure based on golden ratio could enhance financial performance. The relationship was found to be more obvious in the case of the United States. Moreover, the relationship was found to be stronger in the case of service firms.

Vuković et al. (2022) analysed the major factors that impact financial performance. The sample consisted of 460 European agricultural companies. Short-term debt to total asset ratio, long-term debt to total asset ratio and debt to asset ratio were found to have a negative correlation with performance.

Adam et al. (2023) analysed the influence of leverage on financial performance. The study focussed on Brazilian and Mexican family businesses. Higher debt was found to be associated with lower financial performance in terms of ROA.

Amin and Cek (2023) studied the deviation of capital structure from the golden ratio for the impact on financial performance. The study used a sample of non-financial firms from France and the United Kingdom. The results revealed that capital structure based on golden ratio can have a positive significant impact on the financial performance in both the countries. Also, deviation from the golden ratio did have a negative significant effect on financial performance.

Mazanec (2023) estimated business performance using selected indicators including capital structure of transport companies in Central Europe. As per the results, a high debt ratio negatively impacts corporate performance.

Szőllősi and Erdős (2023) studied companies engaged in crop production, focussing on the V4 countries, namely Poland, Slovakia, Czechia and Hungary. With respect to capital structure, higher financial profitability was found to be associated with a lower debt rate.

Results and Discussion

Review of the literature reveals that some of the studies point to a positive relation between the proportion of debt present in the capital structure and the financial performance of the firm. Ramli et al. (2019) found a positive relation between firm leverage and firm financial performance with regards to the Malaysian sample. Debt can indeed have a positive impact on financial performance, as it brings with it tax advantages. As we know the interest paid on debt is deductible while computing tax, it thus provides what is known as interest tax shield to the firm. This interest tax shield reduces the cost of capital of the firm. Bărbuță-Mișu et al. (2019) observed leverage and performance as having a positive relationship. The study explained the result based on agency theory: that in order to reduce agency costs associated with free cash flows, it would be beneficial for profitable firms to take on higher leverage.

On the contrary, some of the studies, including Gleason et al. (2000), pointed towards a negative relationship between the level of debt present in the capital structure and the financial performance. This could be due to the fact that, although debt does bring in tax advantages, it also brings with it the disadvantages of possible financial distress and agency costs of debt. Financial distress refers to the situation in which the firm is not able to meet the interest obligations. Even when a formal default is avoided, there could be indirect costs that the firm might have to incur, due to the increased possibility of financial distress, as the level of debt in capital structure increases. There could also be agency costs of debt, which include the cost to the firm due to restrictive covenants which creditors might impose. Parvin et al. (2020) suggest that, as institutions use leverage as a measure to avoid agency conflicts, the resultant overleveraging can negatively affect performance.

Interestingly, there were also some studies such as Mardones and Cuneo (2020) which could not arrive at a definitive conclusion on the relationship between the proportion of debt in the capital structure and financial performance.

Ramli et al. (2019) pointed out that attributes specific to the countries studied, such as development of stock markets in the country, development of bond market in the country and inflation, may influence the relationship between leverage and financial performance of the firm. This study was conducted using a Malaysian sample and an Indonesian sample. Interestingly, a positive significant correlation between the studied variables was found only in the case of the Malaysian sample. Such sector-based and country-based differences were also pointed out by Ulbert et al. (2022). The study, relying on data from manufacturing and service firms from the United States and Europe, affirmed the beneficial effects of golden ratio–based capital structure. Such beneficial effects were more observable in the case of firms from the United States as compared to Europe. Also, the effect was more pronounced in the case of service firms as compared to manufacturing companies.

The question here is what could be the reason for these differences in conclusion by various researchers. Let us analyse the possible reasons for the same. As we know even today that there is a large gap in the level of development of capital markets and financial institutions among the countries globally. Consequently, the lack of a developed capital market can increase the cost of equity faced by business organisations in such nations, leading to equity being a less-preferred component in the capital structure. Alternatively, if the financial institutions including the banking sector is underdeveloped in a nation, it can increase the cost of debt incurred by the business organisations, leading to debt being a less-preferred component in the capital structure. Further, it needs to be kept in mind that the development capital market in a nation is a continuously evolving process. To take the case of India, prior to the 1990s, capital markets in India were under the regime of the 'Controller of Capital Issues'. Since liberalisation was undertaken in the financial sector in the 1990s, the capital markets in India have grown manifold. Joshi (2020) highlighted that in the Indian corporate sector, the reliance on debt has been on the decline especially after the mid-1990s. Globally, many emerging market economies around the world have seen such rapid development in capital markets in the last couple of decades, thereby making equity capital much more easily accessible in these nations. Another reason for the observed difference could be the intrinsic differences between the industries being focussed as part of the study. As we are aware, various industries such as steel industry and cement industry differ in various respects, including the investment in raw materials, the production process and the level of investment in current assets and fixed assets, to name a few.

Another interesting aspect observed in the studies is that even within an industry, there could be a difference between the impact of the short-term and long-term debt component in the capital structure on financial performance, as observed by Xu et al. (2021). The study used ROA ratio and ROE ratio as measures of financial performance. As per the study, short-term debt ratio and total debt ratio had a negative influence on financial performance of firms in the agricultural sector in China. But when it comes to long-term debt ratio, there was no significant impact. The difference in interest costs, with higher costs usually associated with long-term debt, could be a reason for this contradiction in impact between short-term debt component and long-term debt component.

The question also deserves attention from a theoretical standpoint as many theories have been propounded on the relationship between the capital structure and the financial performance: trade-off theory, agency costs theory and pecking order theory to name a few. Kraus and Litzenberger (1973) stated that achieving optimum financial structure in a firm involves considering the trade-off between the benefit of tax advantage due to debt and the adverse impact of possibility of bankruptcy. Jensen (1986) highlighted the role of debt in mitigating the agency costs associated with free cash flows available with managers. The danger of not being able to make interest payments of debt can motivate organisations to become more efficient. But it needs to be kept in mind that debt also has agency costs associated with it. As the level of debt increases, the agency cost of debt also increases. So, achieving optimal capital structure would involve considering both the benefits and costs associated with debt. Bărbuță-Mișu et al. (2019) explained the positive relationship between leverage and ROA found in the study using the 'Agency Theory'. The study suggested more profitable firms have a necessity to take on higher levels of debt to mitigate the adverse impacts associated with agency costs of free cash flow. Botta (2019), on the other hand, pointed towards the adverse impact of agency costs of debt; that is, incurring excessive debt can hamper profits. Myers and Majluf (1984) highlighted that for the purpose of sourcing funds, firms look first for internal sources. Among the external sources of funds, debt is preferred over equity. This points towards a hierarchy or 'Pecking Order' in terms of preferences for sources of finance (Myers, 1984). Botta (2019), while studying the financial decisions of Italian hotel SMEs, also found a financing pattern consistent with such a pecking order model with a hierarchy in terms of financing preferences with a strong reliance on internal funds among Italian hotel SMEs.

As for the methodology employed by the researchers, as observed in the systematic literature review, the most common methodology was regression analysis–based techniques using panel data (Dawar, 2014). Panel data are multi-dimensional in the sense that they are about multiple entities or firms over multiple years (Parvin et al., 2020). Specific models coming under panel data–based analysis include pooled OLS, fixed effects model and random effects model (Ulbert et al., 2022). Hausman test can be used to choose whether the fixed effects model or the random effects model should be used (Dawar, 2014). Panel unit root tests can be used to check for stationarity of the data (Amin & Cek, 2023; Ullah et al., 2020). Checks for multicollinearity (Amin & Cek, 2023; Mazanec, 2023), heteroskedasticity (Amin & Cek, 2023) and autocorrelation (Amin & Cek, 2023; Özcan, 2019) are also performed.

As for the proxy variables used to study capital structure, debt to asset ratios have been most commonly used. Dawar (2014) used short-term debt to total assets ratio and long-term debt to total assets ratio as measures for representing the capital structure. As for the proxy for measuring financial performance, many of the studies used ROE and ROA (Dawar, 2014; Phillips & Sipahioglu, 2004). The other variables which were identified to have an effect on financial performance and, therefore, whose effect has been controlled for in the studies include asset tangibility and size of the firm. Dawar (2014), relying on prior research, states that the impact of tangibility on profitability is inconclusive. The study proposes that tangible assets may play a role in mitigating agency conflicts. But at the same time, firms with intangible assets may have more funds to invest, thus leading to a negative relationship between tangibility and profitability (Dawar, 2014). Vuković et al. (2022) found that the relationship between asset tangibility and financial performance is negative in the case of agricultural companies in Europe. The study suggested that this could be the result of the lack of optimal use of fixed assets by these companies. Mardones and Cuneo (2020) found a positive relation between size and performance and suggested that this could be due to the fact that large companies face lower bankruptcy costs, leading to higher profitability. Vuković et al. (2022) also found the relationship between firm size and financial performance as positive in the case of European agricultural companies and suggested that reasons could be that larger companies would have easier access to financial resources and advantages from economies of scale.

Findings of the Literature Review

The literature review gave valuable insights on the existing literature on the impact of capital structure on financial performance. It is seen that studies have been conducted at the economy level, sectoral level (manufacturing sector, services sector) and for specific industries (such as cement industry, steel industry, hotel industry, etc.). The conclusions of the studies point to the fact that they lack unanimity on whether the level of debt present in the capital structure has a positive or negative impact on the financial performance. Further, there is a difference between the nature of the impact of short-term debt on financial performance and the nature of the impact of long-term debt on financial performance. Studies reveal that industry specific differences have a role in the impact of the different sources of finance in the capital structure on the corporate financial performance. Trade-off theory, the Agency costs theory and the Pecking-order theory are among theories used to explain the findings regarding the relationship between capital structure and corporate financial performance. As for the variables employed in the studies, commonly used proxy variables for capital structure are the ratios of Short-Term Debt to Total Assets ratio and Long-Term Debt to Total Assets ratio. Commonly used proxy variables for financial performance are return on equity ratio and return on assets ratio. Control variables commonly studied include Asset tangibility and size of the firm. Multiple regression analysis methods using panel data is commonly adopted in many of the studies.

Policy Implications

Each source of capital has advantages and disadvantages. Debt has beneficial tax shield effects. Moreover, debt can reduce the agency costs associated with free cash flows. These factors do make debt an interesting proposition. But there are disadvantages of debt, including the cost of financial distress. There is agency cost associated with debt as well. Thus, while taking a decision on capital structure, all these advantages and disadvantages of the respective source of capital need to be kept in mind. Inter-industry differences also need to be kept in mind while taking capital structure decisions. Country-based differences, including the development of bond markets, capital markets and inflation levels, should also be kept in mind. Within the debt component of capital, the term of debt, whether short-term or long-term, is also a crucial aspect. From a theoretical perspective, the study indicates the scope for a more comprehensive theory, which can explain the impact of capital structure on financial performance. The country-based differences imply that the rules established by regulatory bodies, can impact the relationship between capital structure and financial performance, by facilitating the development of capital markets, bond market and banking sector. Such well-developed financial markets can very well reduce the costs associated with sourcing of capital and can have a salutary effect on enhancing the financial performance of firms.

Conclusion

The study is an attempt to perform a systematic literature review on the important topic of the impact of capital structure on financial performance and to summarise the conclusions arrived at by the existing literature. The systematic literature review invariably shows that capital structure indeed does have an impact on the financial performance of the firm. But studies conducted in various nations and various sectors differ in their assessment of the nature of impact. Differences are also observed in the impact of short-term debt and long-term debt as sources of finance. The contradictory results suggest the need for further sector-specific and industry-specific empirical studies, focussing on specific countries, using recent data. The variations in the empirical results and the purported reasons for such behaviour, also suggests the possibility of building further theories which might be able to better explain the relation between capital structure and financial performance in a more comprehensive manner. The review also highlights the need to assess the impact of other determinants of financial performance apart from capital structure including firm size, asset tangibility among others. Overall, the systematic literature review reveals that capital structure decision is indeed a significant decision, which necessitates more empirical research while keeping in mind the country-based and industry-based differences and nuances of the source of capital, such as short-term or long-term in case of debt.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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References

Abor, J. (2005). The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana. *The Journal of Risk Finance*, *6*(5), 438–445. https://doi.org/10.1108/15265940510633505

Adam, C., Domingues, D. G., Gomes, D. G. D., & Silva, T. P. D. (2023). Evidence of diversification and leverage in the performance of Brazilian and Mexican family businesses. *Latin American Research Review*, *58*(4), 892–907. https://doi.org/10.1017/lar.2023.10

Amin, H. I. M., & Cek, K. (2023). The effect of golden ratio-based capital structure on firm's financial performance. *Sustainability*, *15*(9), 7424. https://doi.org/10.3390/su15097424

Bărbuță-Mișu, N., Madaleno, M., & Ilie, V. (2019). Analysis of risk factors affecting firms' financial performance—Support for managerial decision-making. *Sustainability*, *11*(18), 4838. https://doi.org/10.3390/su11184838

Bayaraa, B. (2017). Financial performance determinants of organizations: The case of Mongolian companies. *Journal of Competitiveness*, *9*(3), 22–33. https://doi.org/10.7441/joc.2017.03.02

Botta, M. (2019). Financing decisions and performance of Italian SMEs in the hotel industry. *Cornell Hospitality Quarterly*, *60*(4), 335–354. https://doi.org/10.1177/1938965518816948

Dawar, V. (2014). Agency theory, capital structure and firm performance: Some Indian evidence. *Managerial Finance*, *40*(12), 1190–1206. https://doi.org/10.1108/MF-10-2013-0275

Ghardallou, W. (2022). Capital structure decisions and corporate performance: Does firm's profitability matter? *Journal of Scientific and Industrial Research (JSIR)*, *81*(08), 859–865. https://doi.org/10.56042/jsir.v81i08.59697

Gleason, K. C., Mathur, L. K., & Mathur, I. (2000). The interrelationship between culture, capital structure, and performance: Evidence from European retailers. *Journal of Business Research*, *50*(2), 185–191. https://doi.org/10.1016/S0148-2963(99)00031-4

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, *76*(2), 323–329.

Joshi, D. V. (2020). Indian corporate and its capital structure: Changing trends. *International Journal in Management and Social Science, 08*(02).

Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. *The Journal of Finance*, *28*(4), 911–922. https://doi.org/10.1111/j.1540-6261.1973.tb01415.x

Luo, Y., & Jiang, C. (2022). The impact of corporate capital structure on financial performance based on convolutional neural network. *Computational Intelligence and Neuroscience*, *2022*, 1–7. https://doi.org/10.1155/2022/5895560

Mardones, J. G., & Cuneo, G. R. (2020). Capital structure and performance in Latin American companies. *Economic Research-Ekonomska Istraživanja*, *33*(1), 2171–2188. https://doi.org/10.1080/1331677X.2019.1697720

Mazanec, J. (2023). Capital structure and corporate performance: An empirical analysis from Central Europe. *Mathematics*, *11*(9), 2095. https://doi.org/10.3390/math11092095

Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*, *39*(3), 574–592. https://doi.org/10.1111/j.1540-6261.1984.tb03646.x

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, *13*(2), 187–221. https://doi.org/10.1016/0304-405X(84)90023-0

Özcan, İ. Ç. (2019). Capital structure and firm performance: Evidence from the airport industry. *European Journal of Transport and Infrastructure Research*, *19*(3), 177–195. https://doi.org/10.18757/ejtir.2019.19.3.4384

Pandey, I. M. (2010). *Financial management* (10th ed). Vikas Publications.

Parvin, S. S., Hossain, B., Mohiuddin, M., & Cao, Q. (2020). Capital structure, financial performance, and sustainability of micro-finance institutions (MFIs) in Bangladesh. *Sustainability*, *12*(15), 6222. https://doi.org/10.3390/su12156222

Phillips, P. A., & Sipahioglu, M. A. (2004). Performance implications of capital structure: Evidence from quoted UK organisations with hotel interests. *The Service Industries Journal*, *24*(5), 31–51. https://doi.org/10.1080/0264206042000276829

Ramli, N. A., Latan, H., & Solovida, G. T. (2019). Determinants of capital structure and firm financial performance—A PLS-SEM approach: Evidence from Malaysia and Indonesia. *The Quarterly Review of Economics and Finance*, *71*, 148–160. https://doi.org/10.1016/j.qref.2018.07.001

Search Operators. (2023). *Web of science help*. https://webofscience.help.clarivate.com/en-us/Content/search-operators.html

Szőllősi, L., & Erdős, A. D. (2023). Income and asset situation of companies producing arable crops in the Visegrad countries. *Agriculture*, *13*(8), 1589. https://doi.org/10.3390/agriculture13081589

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, *14*(3), 207–222. https://doi.org/10.1111/1467-8551.00375

Ulbert, J., Takács, A., & Csapi, V. (2022). Golden ratio-based capital structure as a tool for boosting firm's financial performance and market acceptance. *Heliyon*, *8*(6), e09671. https://doi.org/10.1016/j.heliyon.2022.e09671

Ullah, A., Pinglu, C., Ullah, S., Zaman, M., & Hashmi, S. H. (2020). The nexus between capital structure, firm-specific factors, macroeconomic factors and financial performance in the textile sector of Pakistan. *Heliyon*, *6*(8), e04741. https://doi.org/10.1016/j.heliyon.2020.e04741

Vuković, B., Milutinović, S., Mijić, K., Krsmanović, B., & Jakšić, D. (2022). Analysis of financial performance determinants: Evidence from the European agricultural companies. *Custos e Agronegócio*, *18*(1), 285–306.

Web of Science Core Collection. (2021). *Web of science help*. https://webofscience.help.clarivate.com/Content/wos-core-collection/wos-core-collection.htm

Xu, J., Sun, Z., & Shang, Y. (2021). Capital structure and financial performance in China's agricultural sector: A panel data analysis. *Custos e Agronegócio*, *17*(2), 445–463.

Perspective Article

Technology for Sustainable Health Ecosystem: A Hybrid-narrative Review for Achieving Universal Health Coverage Through Digital Health

Review of Professional Management:
A Journal of Management
24(1) 94–105, 2026

DOI: 10.1177/09728686251394903
rpm.ndimdelhi.org

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Abstract

The 17 Sustainable Development Goals (SDGs) address the global challenges and aim to create a more sustainable and equitable world by 2030. As countries strive towards achieving these goals, SDG-3, which focuses on ensuring healthy lives and promoting well-being for all, is of paramount importance to build a sustainable health ecosystem. Countries must build a resilient health ecosystem which can sustain future pandemics as well. One of the prominent targets of this SDG is achieving Universal Health Coverage (UHC), which focuses on ensuring quality, accessibility, and affordability of health services for all. Digital health initiatives in the healthcare sector are one of the key emerging technologies and have gained enormous attention from healthcare organisations, various stakeholders, and even scholars. These technological interventions can further be leveraged to attain SDG-3. In light of these points, we conducted a hybrid-narrative review to provide a holistic view of the current literature, the opportunities and the pitfalls for stakeholders. Further, future research directions for academicians were discussed. Digital health technologies can help in support of registration, financial support, the spread of awareness, unique identification, and maintenance of health records, which can facilitate a more robust healthcare system. A cascading model is presented for operationalising the role of digital health in achieving

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UHC and thus, moving towards a more sustainable healthcare system. Finally, the article summarises the key recommendations for various stakeholders and policymakers to maximise the impact of digital health for achieving UHC and thus, advancing the SDGs.

Keywords

Health care management, technology & innovation, health information technology, management

Received 25 May 2024; accepted 12 October 2025

Introduction

Digital health, or the integration of digital technologies in the healthcare domain, refers to the use of Information and Communications Technology (ICT) to support health and health-related fields (World Health Organization, 2019). With the integration of advanced hardware, software, and computing sciences, the term digital health is readily being used as an umbrella term encompassing numerous ICT initiatives in the healthcare industry (WHO, 2019). The concept of digital health technologies has been well-known for decades. Digital health includes numerous health system initiatives, including electronic health (eHealth), mobile health (mHealth), telemedicine, electronic medical records (EMR), wearable devices, remote monitoring, decision support systems, AI, robotics and many more.

However, since the COVID-19 pandemic, acceptance of digital health technologies has increased tremendously due to the health risks and lockdown restrictions imposed during the pandemic. The pandemic created a burden on healthcare delivery, and thus, across the world, digital technologies were integrated into the healthcare domain to tackle the disease threat associated with the sudden pandemic situation. These digital health tools have revolutionised the healthcare sector and transformed various aspects of the patient care delivery process.

With the adoption of modern technologies, the patient pathway can be more streamlined from symptom identification to treatment and further long-term support. With the potential of providing wider access to healthcare provisions, reduced costs, and patient-specific services, the healthcare industry has seen a paradigm shift post-pandemic (Awad et al., 2021). These technical capabilities are enabling new experiences for healthcare providers as well as for users. These new technologies can play a vital role in achieving health-related Sustainable Development Goals (SDGs) as well. The 17 SDGs were adopted by United Nations member states in 2015 and are considered an urgent call for action by all countries in a global partnership. Each nation is working towards these goals and is set to transform the world by 2030. These 17 goals comprise 169 targets, which cater to different aspects of sustainability.

For our study area, the SDG that is of foremost importance is SDG-3, which states 'Ensure healthy lives and promote well-being for all at all ages'. This goal is related to the health and well-being of the population and comprises 13 targets that measure the progress and current state of healthcare facilities. This goal addresses all the major health priorities from reproductive to adolescent health, Universal Health Coverage (UHC), medicines and vaccines access, and many more.

UHC is one of the targets of SDG-3 and is considered a pivotal prerequisite to fight future pandemics. This target aims to provide healthcare services to a wider audience. UHC aims to provide quality healthcare services for all without any financial adversity (WHO) (Babatunde et al., 2021). UHC is an important target for SDG-3, and every nation is working towards achieving UHC and other SDG targets by the year 2030. With this target, along with the poor coverage and quality issues of care, the demand and supply aspect of health systems can also be addressed (Mehl et al., 2014). It is believed by the decision makers that UHC can act as a foundation for improving the population's health, reaching a wider audience, achieving social justice, and also for economic progress. With comprehensive health governance and by minimising disparities, nations can also aim for resilient health systems through UHC (Id et al., 2022). Incorporating appropriate technologies in the form of eHealth and mHealth has the potential to increase health services coverage and impact.

Academicians in various fields, from medicine to management, have shown interest in this growing domain. However, the main focus is more on the user adoption perspective, and limited work around how these technologies can be leveraged for achieving UHC has been discussed. More importantly, there is a lack of a comprehensive view of the current state of digital technologies for UHC. The opportunities and pitfalls need to be addressed to understand how these digital initiatives can help in achieving UHC, which is one of the targets of SDG-3.

In this review, we contribute to the existing literature by mapping the gaps and opportunities to provide a holistic framework and the future research directions of this emerging technological intervention. Through our review, we answer the following research questions:

1. What is the current state of literature concerning the major pitfalls and opportunities of achieving UHC through digital health technologies?
2. What are the main research directions for future growth?

Our review emphasises scholars' views on how digital health technologies can play a significant role in achieving UHC for SDG-3.

This article is organised as follows. The second section introduces the background literature, and the third section presents the literature search method. The fourth section outlines the synthesis of the literature. The fifth section outlines the key takeaways and future research directions. Finally, the sixth section presents our conclusion.

Background Literature

The healthcare sector is revamping to incorporate digital health technologies and is moving towards a massive digital transformation these days (Gleiss &

Lewandowski, 2022). This digital transformation is enabling the healthcare sector to move from the ongoing ‘one-size-fits-all’ approach to a more patient-centric approach. These digital health solutions are capable of improving the prognosis and diagnosis of diseases, as well as enhancing the whole care delivery process. With digital technology and remote monitoring in place, patients can monitor their health regularly and have better control of their health and health-related decisions (Awad et al., 2021). Digital health is used as an umbrella term for numerous health system initiatives, including eHealth, mobile health (mHealth), telemedicine, EMR, wearable devices, remote monitoring, decision support systems, AI, robotics, and many more. These technological initiatives offer a plethora of growth opportunities for the healthcare domain. They can enhance healthcare access, provide better integration of data from different sources, improve provider-patient communication, provision of electronic decision support, and thus, strengthen the healthcare sector and delivery process across the world.

These digital solutions can help in bridging the gap between the service provider and the patients. With the onset of the pandemic in 2020, healthcare delivery across the globe has been adversely affected. In India, with limited medical assistance and limited health infrastructure, people were forced to use digital technologies to consult a healthcare provider and had to opt for remote monitoring via mHealth and teleconsultation. As per a survey, COVID-19 removed several digital transformation barriers in the healthcare sector when compared to the pre-pandemic era. According to their survey, 51% of healthcare providers and organisations increased their usage of digital technologies during the pandemic to connect with patients and the public. 75% of people reported that digital solutions enhanced the healthcare delivery process both for the patients and service providers, and around 78% of Indian respondents felt that digital solutions help them access healthcare when and where needed. There was a remarkable three times increase in the number of people opting for online consultation. Although the number of online healthcare users increased. Many healthcare organisations continually face the issue of maintaining access to care, providing services operating within a budget, and also managing the workforce capacity; thus, the need for the right digital tools and integration with medical needs is still a concern for many.

Thus, there is a need for healthcare organisations to evaluate how these digital health technologies can be leveraged to strengthen the care delivery process for the future. Post-pandemic, these health technologies are being readily accepted by healthcare providers and patients to connect, monitor, and improve health. These technologies can further be leveraged to achieve the SDGs by the nation. With the accessibility, affordability, and interoperability features of digital health, this technology can act as a facilitator to achieve the SDGs by 2030.

The COVID-19 pandemic exacerbated the healthcare burden manifold and thus, resulted in infecting more than 500 million people by mid-2022, and led to 15 million deaths by 2021. This pandemic disrupted the essential healthcare services in 92% of countries across the world and thus halted the global UHC process. As the global life expectancy and immunisation coverage rate fell during this period, the prevalence of anxiety and depression amongst the population amplified (UN, n.d.).

eHealth is considered the cost-effective and secure use of ICT for supporting health and health-related fields. Whereas, mHealth refers to the use of mobile or wireless technology for health (WHO, 2016). It is believed that through the accessibility and interoperability features of digital health, nations can move from disease-centric silos to resilient healthcare systems, which can help in facilitating UHC at a faster rate (WHO, 2016). Thus, it will be crucial to understand what are the opportunities and pitfalls of using digital health for achieving UHC and SDG-3 by nations.

Literature Search Method

We conducted a hybrid-narrative review, for which the selected studies were integrated and a framework was designed. Further, the future research directions were drawn using a narrative style (Dincelli & Yayla, 2022; Paul & Criado, 2020). To limit the scope of our literature, we included articles published after 2017. First, we searched for keywords UHC, digital health and related keywords in the Title, Abstract, and Keywords categories in Scopus and Web of Science. This initial search yielded 608 results. Next, we further excluded studies that were not in the English language and those which were not journal articles. We considered only those articles which were in the management, health literacy, and social sciences domains. The articles which were extracted were further filtered based on the year of publication, as we only considered literature from 2015 to 2023. The final 474 results were further screened based on Title, Abstract, and Keywords. This systematic search resulted in 27 articles on UHC using technological initiatives. Figure 1 shows our search strategy (Figure 1). The Boolean string was as follows:

Results

In this section, we present our results in answers to RQs and provide an analysis of the studies in our research. Our analysis started by determining the descriptive statistics of the 27 research articles in our database, in terms of region-wise distribution, study approach, and year of publication, to understand the literature trends. Various articles published between 2015 and 2023 follow a consistently increasing trend, from seven articles between 2016 and 2019 to 20 articles between 2020 and 2023, which points towards the growing interest in this research field. Despite the growing academic interest, there is still scope for new developments for determining how digital health technologies can be leveraged for UHC achievement by nations (Table 1).

The approach or methodology used by around 85% of the studies is a qualitative approach, and only one article used a mixed-method approach. Around 41% of

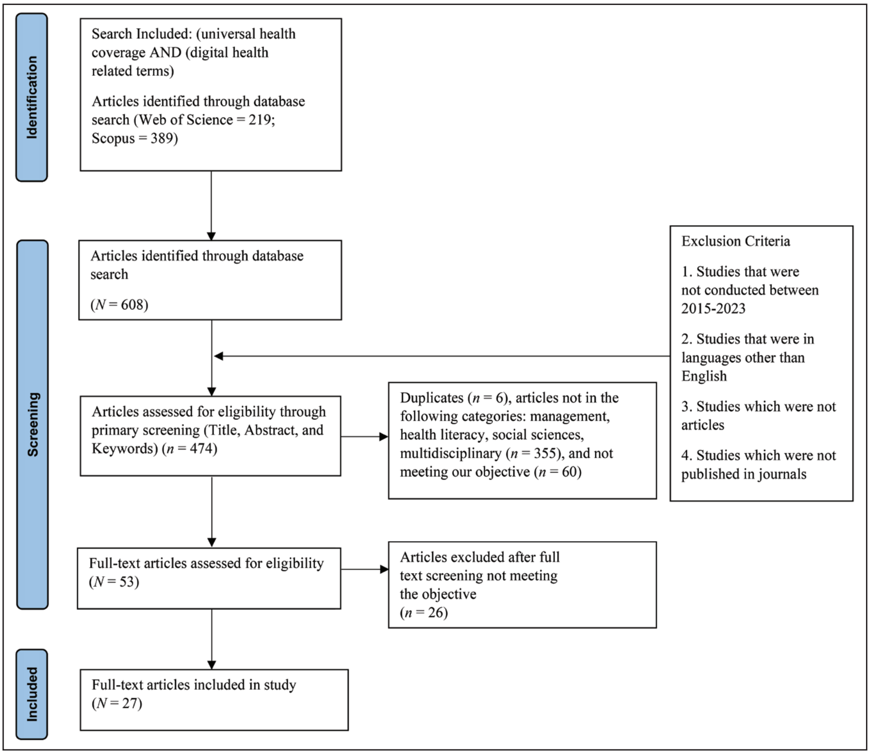

Figure 1. PRISMA Flow Diagram for the Articles' Selection Process.

Table 1. Articles Distribution by World Health Organization Region, Study Approach, and Year (N = 27).

Variables	Frequency	Percentage
Region-wise Distribution		
Africa	11	41
Across the WHO regions	7	26
South-East Asia	4	15
Western Pacific	3	11
Eastern Mediterranean Region	1	4
Europe	1	4
Study Approach		
Qualitative	23	85.2
Quantitative	4	14.8
Publication Year		
2016	1	4
2018	3	11
2019	3	11
2020	2	7
2021	6	22
2022	7	26
2023	5	19

Table 2. Opportunities and Pitfalls of Achieving UHC Through Digital Health.

Opportunities	Pitfalls
Accessibility	Internet connectivity issue
Affordability	Trust issue because of sensitive information
Interoperability	Regular quality checks of the application
Reducing financial constraint	Hacking issues
Remote monitoring	Mobile ownership issues
Teleconsultation	Lack of awareness
Real-time reports	Ineffective policies
AI for decision making	
Medical records storage	
Follow-up messages	
Centralised system for health data	
Quality health services	
Universal health coverage	
Workforce training	
Engagement of multi-level stakeholders	

articles were from the WHO Africa region, and another 26% were across two or more WHO regions.

An overview of the articles included in our study is presented in Table 2 to better understand the objective and main findings of the study (Table 2).

We can answer our first RQ by analysing the current literature. Our first RQ focuses on the current state of literature about UHC through a digital health perspective. Through the literature in our study, we can see that the majority of authors are discussing the need to achieve UHC for SDG attainment by 2030. However, limited scholarly work on framework formation has been done. The current literature focuses more on the opportunities and pitfalls of achieving UHC and how digital health can help in attaining this SDG target. The current literature also emphasises the need for region-specific policies for the attainment of UHC, as a 'one-size-fits-all' approach cannot formulate generalised techniques for achieving UHC. UHC is one of the major targets of SDG-3; hence, nations need to involve more stakeholders and create effective policies to attain UHC. Academicians strongly believe that digital health technologies can tackle many challenges of access coverage, like financial constraints, geographic connectivity, reaching a wider audience, providing quality healthcare, and also easy accessibility and interoperability.

Our RQ focuses on the opportunities and pitfalls for achieving UHC through digital health technologies. The major pitfalls for using digital health technologies for UHC involve internet connectivity issues, mobile ownership issues, ineffective policies, lack of awareness, and limited regulation of digital health. The opportunities of digital health can help in providing healthcare access to a wider region, which can be accessible at any time, affordable, and can reduce financial constraints. With the interoperability feature of digital health, the government can form a centralised platform for easy integration of healthcare data from various sources. Digital health technology can also help enhance the healthcare delivery service process and also, and can provide real-time reports, remote monitoring, and follow-up messages. Medical records can also be stored online and retrieved anytime when needed. We have presented (Table 2) the inferred opportunities and pitfalls.

Thus, we can say digital health technologies are capable of transforming the healthcare system and helping in achieving UHC and thus, SDG-3.

Our third research question focuses on future research direction. Despite the growing literature on the usage of digital health technology for the healthcare industry, academicians are mainly studying the intention or adoption factors that can enable or inhibit the growth of digitisation in the healthcare domain. As nations are moving towards a more sustainable world and working towards achieving the goals formulated by the UN, researchers can focus more on developing frameworks for achieving UHC and other targets of SDG-3 using digital health technologies. The integration perspective of digital health with the healthcare ecosystem is still missing and needs to be addressed for the attainment of SDGs.

Discussion

However, there has been extensive work on why UHC is relevant for the nations or how digital health can support the growth of SDGs and UHC achievement, particularly. Despite the potential of digital health for UHC achievement, our review suggests that for the achievement of UHC, the adoption and coverage process comes with challenges. In Figure 2, we bring together how digital health technologies can be utilised for the achievement of UHC. To create our framework, we adapted the Tanahashi model (Tanahashi, 1978) which evaluates health coverage needs and helps in identifying bottlenecks in the operation process. This framework (Figure 2) is adapted from (Mehl et al., 2014) and (WHO, 2019) and aims to provide suggestions and strategies for the integration of digital health technologies for UHC.

The cascading model, which is used for studying health coverage needs help in assessing the bottlenecks and thus, formulating future strategies. There are various goals of health services, which are represented as different layers of Tanahashi's cascading model. For our framework, we would like to suggest strategies for all these health services layers to achieve UHC through digital health. We would like to suggest the following strategies for achieving health services goals:

- Financial coverage: This layer aims at the financial aspect of health services goals. This layer defines the proportion of the population which are protected from impoverishment due to health-cost burden. As discussed above, one of the major challenges in achieving UHC is the financial burden that comes with healthcare services. There is a need for more affordable health services which would not create a burden on individuals. This layer can be addressed by the various stakeholders involved in healthcare infrastructure, including the government. There have been

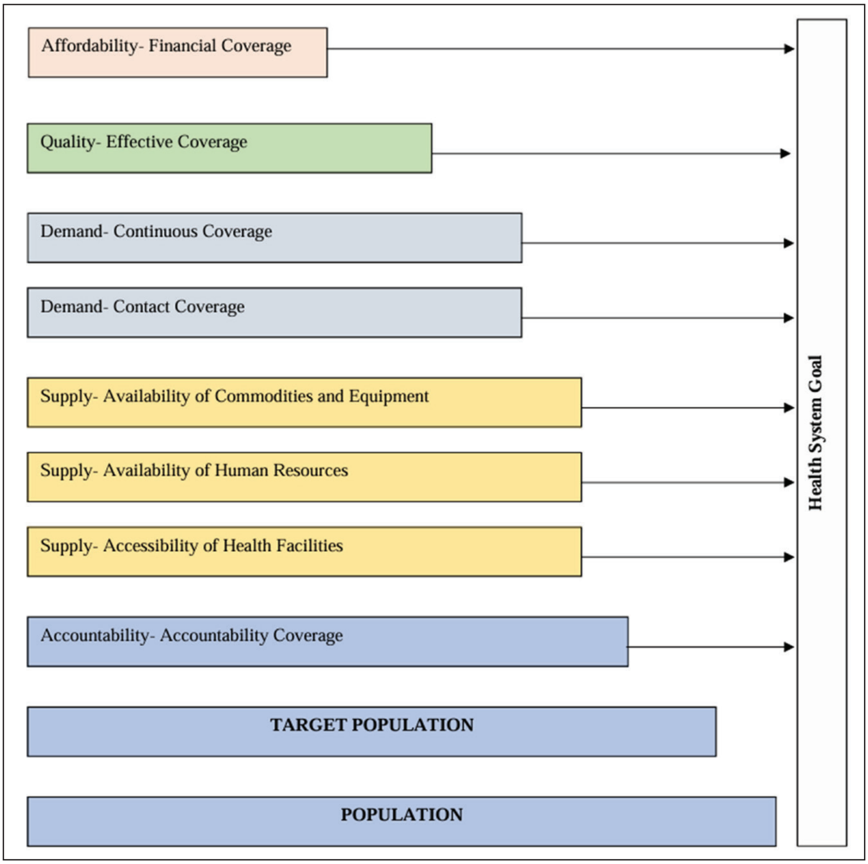

Figure 2. Cascading Model for Integrating Digital Health with UHC.

numerous healthcare schemes that aim to cover the costs of treatment for the population. To address the challenges in this layer, there can be an online prepaid wallet or mHealth wallet facility, which can help in providing funds for healthcare treatments. There can be online health savings accounts and pooled funding for those in need.

- Effective coverage: This layer aims to provide quality healthcare facilities to the target population. Digital health techniques like remote monitoring, AI, robotics, real-time reporting, diagnostic tests, reminders, and telemedicine can help in addressing the challenges related to the quality of coverage.
- Continuous coverage: This layer refers to the extent to which clients receive a full course of health intervention. This can be achieved using mHealth applications, which can aim at providing remote monitoring and telemedicine facilities along with in-person treatment. A centralised portal of medical records can also improve health-related communication. There can be a reminder system, which can keep track of treatment and further follow-ups with the physician.

- Contact coverage: This layer represents the proportion of the target population who have contact with relevant medical facilities and service providers. This layer plays a significant role in achieving SDG-3, as UHC is a prerequisite for reaching a wider audience and providing healthcare facilities when needed. To tackle the challenges, mHealth can play a significant role by enabling more and more individuals to enrol for centralised health records and providing healthcare facilities through mobile devices. mHealth can help in keeping a record of their health status, for remote monitoring, and for reaching healthcare providers in an emergency.
- Availability of commodities and equipment: This layer aims to ensure that health commodities and equipment are available when needed. Using eHealth or mHealth, the government or stakeholders can develop an online centralised portal that will help the population know the current status of beds available and other facilities like ICU or oxygen. The government can also use this portal to keep track of the inventory and storage of available healthcare equipment. mHealth applications can help in supply chain management.
- Availability of human resources: This layer ensures that an adequate workforce is available for treatment. Telemedicine options can help in reaching a wider audience and providing healthcare consultation despite geographical barriers. Digital health can also be used to provide training to care workers for effective healthcare services.
- Accessibility of health facilities: This layer ensures access to health facilities for all. The main aim of SDG-3 is to make healthcare facilities available and accessible to all individuals. Digital health interventions like telemedicine can help in reaching a wider audience through online consultation. mHealth can help in remote monitoring and storing medical records for easy consultation. eHealth initiatives can help in forming a centralised portal that can integrate healthcare data from various sources and provide quick and easily accessible healthcare services.
- Accountability coverage: This layer is the proportion of those who are registered for health services. This layer is another crucial layer for UHC, as this will help in maintaining the records and in keeping track of the population availing healthcare facilities. Digital health can help in maintaining client registration databases, storing EMR, providing unique health IDs, remote monitoring, follow-ups, etc.

Thus, these layers provide potential challenges that nations can face while achieving UHC, and our strategies also provide some digital health integration opportunities for leveraging UHC and achieving SDG-3.

Conclusion

Digital health technologies are advancing rapidly as more powerful, interoperable, and accessible tools are set to transform the healthcare ecosystem. These technologies can be utilised for achieving SDG-3, which focuses on the good health and well-being of all. Realising this rapid growth and interest, we provided a synthesis of literature focusing on the UHC target of SDG-3, through the integration of digital health technologies. Current technological advancements can accelerate the process of UHC and help nations in providing accessible, affordable, and quality health services to all. Based on the Tanahashi framework health services goal, we have also provided strategies for achieving universal health access using technology integration. With the consideration of major opportunities and pitfalls, stakeholders and policymakers could benefit from this emerging technology field.

Our review also showed that scholarly work around the relevance of UHC achievement has been conducted. The need for digital health technologies for UHC is also readily discussed by the authors. As UHC is an integral part of SDG-3, it can help in building a resilient framework for future pandemics and health issues. Thus, leveraging digital health technologies can help in creating a sustainable healthcare ecosystem and improve the health infrastructure for future pandemics.

Implications

This study has the following implications. First, Policymakers should strengthen their privacy and security framework to safeguard the health-related data. Second, investments in digital infrastructure can help in facilitating robust mechanisms for storing health-related information like EHRs and also for predictive analysis for future pandemics and epidemics. Third, Healthcare providers can use these digital technologies to enhance patient care, upskill their staff, and facilitate better remote monitoring options for their patients by leveraging telehealth and telemedicine. Future researchers can investigate the intersection of public health and digital health to expand theoretical frameworks.

Authors' Contribution

Both authors contributed equally to this article.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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References

Awad, A., Trenfield, S. J., Pollard, T. D., Ong, J. J., McCoubrey, L. E., Goyanes, A., Gaisford, S., & Abdul, W. (2021). Connected healthcare: Improving patient care using digital health. *Advanced Drug Delivery Reviews*, 113958. https://doi.org/10.1016/j.addr.2021.113958

Babatunde, A. O., Abdulkareem, A. A., Akinwande, F. O., Adebayo, A. O., Omenogor, E. T., Adebisi, Y. A., & Ilesanmi, E. B. (2021). Leveraging mobile health technology towards achieving universal health coverage in Nigeria. *Public Health in Practice*, *2*, 100120. https://doi.org/10.1016/j.puhip.2021.100120

Dincelli, E., & Yayla, A. (2022). Immersive virtual reality in the age of the Metaverse: A hybrid-narrative review based on the technology affordance perspective. *Journal of Strategic Information Systems*, *31*(2), 101717. https://doi.org/10.1016/j.jsis.2022.101717

Gleiss, A., & Lewandowski, S. (2022). Removing barriers for digital health through organizing ambidexterity in hospitals. *Journal of Public Health (Germany)*, *30*(1), 21–35. https://doi.org/10.1007/s10389-021-01532-y

Id, A. E., Gilks, C. F., Ambaw, F., & Assefa, Y. (2022). Universality of universal health coverage: A scoping review. 1–15. https://doi.org/10.1371/journal.pone.0269507

Mehl, G., Labrique, A., & District, U. (2014). Prioritizing integrated mHealth strategies for universal health coverage. *Global Health Action*, *345*, 6202.

Paul, J., & Criado, A. R. (2020). The art of writing literature review: What do we know and what do we need to know? *International Business Review*, *29*(4), 101717. https://doi.org/10.1016/j.ibusrev.2020.101717

Tanahashi, T. (1978). Health service coverage and its evaluation. *Bulletin of the World Health Organization*, *56*(2), 295–303.

World Health Organization. (2019). *Recommendations on digital interventions for health system strengthening: Evidence and recommendations*. https://www.who.int/publications/i/item/9789241550505

Case Study

Unlocking MSME Satisfaction: A Case Study of Pre-sanction Loan Processes in Odisha's Public Sector Banks

Review of Professional Management:
A Journal of Management
24(1) 106–123, 2026

DOI: 10.1177/09728686251409458
rpm.ndimdelhi.org

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Abstract

Micro, small and medium enterprises (MSMEs) are an essential element in Odisha's economic growth and socio-economic progress, providing jobs, fostering rural entrepreneurship and promoting balanced geographical development. But even with the introduction of government reforms and financial inclusion programmes, MSMEs often face challenges in obtaining credit from public sector banks, especially at the pre-sanction stage of loan disbursement. The first step, which includes documentation, eligibility checks and ground evaluation, is a pivotal factor in determining customer satisfaction and trust in the banking system. The current study examines the levels of satisfaction of MSME borrowers at the pre-sanction stage of loan issuance in public sector banks in Odisha. The research aims to determine the impact of demographic and financial factors, such as age, education and loan amount, on borrowers' perceptions of fairness, efficiency and transparency in the loan process. Using a descriptive–analytical research design, the study collects primary data through a structured questionnaire and interviews with borrowers across various districts of Odisha. Results show that satisfaction levels are not materially different across age groups, education levels and credit

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limits, suggesting that most public sector banks share a similar attitude towards lending. This consistency highlights the success of digital banking reforms, process automation and rule-based evaluation systems that have reduced procedural bias and increased transparency. The study also indicates that satisfaction levels are increasingly determined by institutional performance indicators, including timeliness, communication quality and the legibility of documentation, but not by borrower demographics. As a result, the research concludes that the model for achieving procedural parity and consistency in pre-sanction loan processes by public sector banks in Odisha indicates an improvement in inclusive banking. Further improvement in satisfaction should focus on qualitative aspects of service delivery, including staff responsiveness, empathy and the efficiency of active communication. MSMEs, as well as public sector banks, can build long-lasting connections and strong trust by further developing digital infrastructure, feedback systems and strategies to engage borrowers.

Keywords

MSME satisfaction, pre-sanction loan process, public sector banks (India), borrower perception and trust, banking process transparency

Received 12 December 2024; accepted 02 December 2025

Introduction

Micro, small and medium enterprises (MSMEs) comprise a significant portion of India's economic infrastructure. They contribute approximately 30% to the country's gross domestic product, 45% to manufacturing and 48% to exports. They also employ more than 110 million individuals. This is also a leading sector in Odisha, with over 4 lakh registered MSME units operating in various industries, including handloom, handicrafts, food processing and mineral-based manufacturing. Although MSMEs in India make a significant contribution to the economy, they face a substantial credit gap, estimated at 20–25 lakh crore, and only 14% of these businesses utilise formal institutional credit. This financial limitation has a significant negative impact on the growth path and competitiveness of such businesses, especially in states such as Odisha, where financial inclusion remains a persistent issue (Ashiq et al., 2023).

In India, funding for MSMEs predominantly relies on public sector banks (PSBs), which provide over 77% of the loans to this sector. By March 2025, the current MSME loan book with PSBs stood at 13.07 lakh crore, an increase of 11.3 year on year. However, a series of challenges have been encountered in the pre-sanction credit appraisal process, which is a bottleneck between MSMEs' credit demand and supply. The pre-sanction stage is a part of the process that includes submitting the application, conducting due diligence on the borrower, performing a credit check, verifying documents and obtaining preliminary approval. All these combined details indicate the ease, effectiveness and borrower satisfaction with banking services (GOI, Ministry of Finance, 2025).

Recent studies have found that approximately 64% of stressed assets and non-performing accounts originate from failures during the initial pre-sanction borrower due diligence step. The pre-sanction credit process consists of three basic steps: appraisal and recommendation, assessment and sanction. These functions are subdivided by the functional responsibilities of appraisers, assessors and sanctioning authorities. The difficulties associated with this process include incomplete documentation, subjective risk evaluation, the absence of standard procedures, limited access to accurate information about borrowers and time-consuming manual verifications. For MSMEs, this is exacerbated by poor collateral, a lack of organised credit histories, stringent documentation requirements and a perceived higher risk.

Customer satisfaction in the banking industry has proven crucial to institutional performance and competitive advantage, particularly in the highly regulated and competitive MSME lending environment. The quality dimensions of service, such as tangibles, reliability, responsiveness, assurance and empathy, as conceptualised in the SERVQUAL model, fundamentally define satisfaction. In a particular case of MSME lending, the factors of satisfaction do not relate only to the traditional service parameters such as quality but also the timeliness of the decision, the suitability of the loans, the clarity of the processes, its reliability, the presence of online banking services, the conducive conditions of the loans, the competence of the staff and the protection of personal data. It has been established that the service quality dimensions have a strong linear relationship with customer satisfaction, with all correlation coefficients revealing strong relationships between bank policies and procedures and MSME borrower contentment (Jena, 2025).

The shift to digital credit assessment models represents a paradigm shift in lending to MSMEs. The New Digital Credit Assessment Model for MSMEs (initially launched in March 2025) leveraged digitally verifiable data and automated credit decisioning to complete the turnaround in under one day, compared to the more traditional manual methods, which typically took 7–15 working days. The number of MSME loan applications sanctioned by PSBs within this new framework from 1 April to 15 July 2025 is 98,995. This digital revolution encompasses PAN authentication, integration of GST data API, account aggregation, analysis of bank statements, ITR verification and automated fraud detection. Nevertheless, the conversion and application of these technological innovations differ considerably across regions and institutions, and some traditional challenges persist in most work settings (McKinsey & Company, 2025; RBI, 2024).

The MSME sector in Odisha faces unique regional challenges, including inadequate access to finance, infrastructural bottlenecks, outdated technology, market constraints and regulatory burdens. The state government has introduced specific policy reforms through the MSME Development Policy 2022, a part of the Vikshit Odisha vision, to rejuvenate the ecosystem by easing the business environment, providing financial support schemes, improving market access, developing skills and encouraging innovation. Despite such interventions, Odisha's credit-to-deposit ratio stands at approximately 66, below the national average, indicating that banking resources are not being fully utilised for productive lending.

PSBs still dominate the state's credit environment. Still, there is a paucity of systematic research studying the level of satisfaction among MSME borrowers with pre-sanction processes.

The pre-sanction loan process serves as the entry point for crucial interactions among institutional efficiency, regulatory conformity, technological competency and customer expectations. For MSMEs borrowers, this step not only defines access to credit but also contributes to perceptions of fairness, transparency, speed and institutional trustworthiness. The studies show that customers focus on four main dimensions throughout the loan process, including reassurance from knowledgeable and readily available personnel, a clear understanding of prices and schedules, ease in the application process and paperwork, and speed in processing and decision-making. Banks that excel at getting things right the first time and providing 24 × 7 status updates also go a long way towards increasing borrower satisfaction and loyalty.

Although the literature on the quality of banking services and the problem of MSME financing has continued to grow over time, empirical studies that specifically focus on the pre-sanction loan process satisfaction of MSMEs borrowers in PSBs in Odisha are scarce. The current literature has been more inclined towards post-sanction monitoring, credit performance measurement and macro-level achievement trends. Still, a major knowledge gap exists regarding the determinants of satisfaction at the most crucial pre-sanction stage. The identified research gap is especially crucial, considering that pre-sanction experiences largely shape borrowers' perceptions, influence their credit uptake choices and define the long-term banking relationships (Swaminathan, 2024).

The lending regulations for MSMEs have undergone significant changes in recent years. Beginning on 1 October 2024, banks were required to disclose clear and understandable information on the terms and costs of loans in a Key Facts Statement, as mandated by the Reserve Bank of India (2025). The reason behind this is to enhance transparency and empower the borrowers. Additionally, the elimination of prepayment penalties on some MSME loans demonstrates a commitment to promoting desirable borrower practices. This article discusses the pre-sanction loan system in state-sponsored banks in Odisha, examining issues such as the system's performance, transparency, communication, employee competence and reliability to identify what drives borrower satisfaction.

Review of Literature

MSMEs are critical to the economic development of India, particularly in states such as. Odisha, however, has a long-standing discontent with the pre-sanction loan procedures of PSBs. Studies have highlighted that high collateral requirements and a complex nature are among the biggest challenges that MSMEs face. Documentation and low financial literacy, which lower their access to formal credit, increase satisfaction. and banking operations (Divya & Sharma, 2025, 2023; Dubey, 2023; Tambunan et al., 2022). While government programmes, such as the MUDRA scheme, have increased access to credit and enhanced entrepreneurship, they have also created problems. High repayment pressure, inability to understand the process and the need for financial education remain (Chaturvedi & Mishra, 2024, 2023; Dubey, 2023). At the advent of digitalisation, non-banking financial companies (NBFCs) have further increased access, especially in areas previously poorly served, but they face challenges. They include regulatory compliance, high interest rates and inefficiencies in the process (Akang & Udo, 2024; Divya & Sharma, 2025; Tambunan et al., 2022). The literature emphasises streamlining pre-sanction processes to improve financial literacy and leverage technology to enhance MSME satisfaction, ultimately leading to sustainability. In Odisha and other regions, economic growth is a significant concern (Akang & Udo, 2024; Basha et al., 2021; Chaturvedi & Mishra, 2023, 2024; De Carvalho et al., 2021; Divya & Sharma, 2025; Dubey, 2023; Marchelina, 2021; Tambunan et al., 2022; Umami et al., 2024).

There are severe constraints on MSMEs' access to formal credit from state banks in Odisha and across India, such as high collateral requirement, difficult documentation and long approval processes (Akang & Udo, 2024; Dubey, 2023; Sharma, 2025, 2023; Tambunan et al., 2022). These difficulties are magnified by limited financial literacy and ignorance of existing schemes (Dubey, 2023; Supriyadi et al., 2024 ; Tambunan et al., 2022).

Plans such as the Pradhan Mantri MUDRA Yojana have ensured ease of access to collateral-free loans, particularly for micro and small businesses, and have contributed to the creation of entrepreneurship and job opportunities (Chaturvedi & Mishra, 2024; Dubey, 2023). There is further improvement in digitalisation activity, participation by NBFCs and availability of credit, especially in rural and semi-urban regions (De Carvalho et al., 2021; Divya & Sharma, 2025; Tambunan et al., 2022; Umami et al., 2024). Nevertheless, interest rates are high, regulations are restrictive and better need is required. Problems with process clarity still exist (Akang & Udo, 2024; Chaturvedi & Mishra, 2024; Divya & Sharma, 2025).

Financial literacy is one of the most important factors influencing MSME satisfaction and loan repayment. Studies show that more financially literate MSMEs are more likely to access credit and repay it successfully and vice versa. Compliance with regulations may raise operational costs and discourage lending (Akang & Udo, 2024; Dubey, 2023; Supriyadi et al., 2024).

Alternative sources of finance, including NBFCs, credit cooperatives and online lending systems, have emerged. Significant lending options to MSMEs, where traditional banking institutions are not in a position or willing to lend (Da Silva et al., 2024; Dubey, 2023; Divya et al., 2018; Mckillop et al., 2020; Sharma, 2025; Tambunan et al., 2022), can be less strict in terms, yet they can be more risky or even more expensive.

The literature continues to identify that satisfaction with pre-sanction loan procedures among MSMEs in the Odisha public sector is low. Procedural complexity, poor transparency and financial literacy hinder banks (Akang & Udo, 2024; Dubey, 2023; Sharma, 2025, 2023; Tambunan et al., 2022). Although government initiatives, such as those based on MUDRA and digitalisation, have helped people access more, they have never fully addressed the causes of these issues, such as discontent, that is, excessive collateralisation and lengthy processing time (Dubey, 2023; Chaturvedi & Mishra, 2024; Tambunan et al., 2022). The contributions of NBFCs and alternative lenders have helped close some gaps, but such solutions tend to be more expensive or carry higher regulatory risks (Da Silva et al., 2024; Divya & Sharma, 2025; McKillop et al., 2020; Tambunan et al., 2022).

The research quality in the field is generally high, and a variety of empirical studies and literature reviews provide the necessary information and robust evidence. Nevertheless, further region-specific and primary research is required to be performed in Odisha. Learn the local peculiarities and adjust interventions accordingly (Dubey, 2023). The importance of financial reforms in literacy and regulation is mostly supported, so the policy should focus on simplification procedures, improving transparency and offering specific financial education to MSMEs (Akang & Udo, 2024; Dubey, 2023; Supriyadi et al., 2024).

In Odisha, MSMEs' satisfaction with the pre-sanction loan procedures of PSBs is moderate to low. Even with government scheme ameliorations and digitalisation, there are consistent obstacles, such as procedural complexity, collateral requirements and low financial literacy. Overcoming such challenges through regulation, simplifying processes, providing targeted financial education and implementing reforms are necessary to increase MSME satisfaction and support economic growth.

MSMEs are the lifeblood of Odisha's local economy, creating jobs and supporting rural entrepreneurship. Yet, one of their biggest challenges is getting fair and timely access to finance. PSBs are intended to support these businesses. Still, MSME owners often describe the pre-sanction loan stage as involving lengthy document checks, eligibility assessments and field inspections, which they find confusing, time-consuming or discouraging. This stage can make or break their trust in the banking system. A human-centred analysis reveals that satisfaction is not only about getting the loan approved but also about how MSME owners feel during the process: whether they are respected, informed and treated fairly. While many studies discuss post-loan satisfaction or repayment behaviour, very few explore emotional experiences, trust and satisfaction before loan sanction, particularly in Odisha.

- Assessment of MSME satisfaction during the pre-sanction loan process in Odisha's PSBs?
- How can PSBs improve their pre-sanction processes to build stronger relationships with MSME borrowers?

Despite government schemes and banking reforms, MSMEs in Odisha continue to face difficulties in securing credit from PSBs. Many MSMEs report long waiting periods, lack of communication, unclear documentation requirements and procedural rigidity during the pre-sanction stage. These experiences often lead to emotional stress, business delays and even loan rejections. There is a pressing need to understand how MSMEs perceive these interactions and what specific actions can enhance satisfaction and trust.

Research Gap

Most current research in India emphasises credit availability and financial inclusion rather than pre-sanction happiness. Limited research highlights the qualitative, emotional and experiential aspects of interactions between MSMEs and bankers. There is a paucity of region-specific information about Odisha, despite its burgeoning MSME sector and dependence on PSBs. Research on process enhancement and customer empathy in loan evaluation remains underdeveloped. Hence, there is a clear gap in understanding the human experience of MSME clients during the pre-sanction stages in PSBs, and how satisfaction at this stage can influence broader trust and financial inclusion outcomes.

Objective of the Study

This study aims to evaluate the level of satisfaction of MSMEs during the pre-sanction stage of loan approval in PSBs in Odisha.

Hypotheses

To test whether the demographic and financial characteristics of MSME borrowers (age, education and credit limit) significantly influence their satisfaction levels with pre-sanction loan processes in Odisha's PSBs.

H_1: There is a significant difference in MSME borrowers' satisfaction with the determinants of the pre-sanction loan process in PSBs in Odisha across different age groups.
H_2: There is a significant difference in MSME borrowers' satisfaction with the determinants of the pre-sanction loan process in PSBs in Odisha across different education levels.
H_3: There is a significant difference in MSME borrowers' satisfaction towards determinants of the pre-sanction loan process in PSBs in Odisha across different credit limit categories.

Research Methodology

Significance of the Study

This study aims to explore and understand how MSMEs in Odisha experience the pre-sanction stage of bank loans in PSBs.

By focusing on borrowers' satisfaction during this crucial phase, the research brings human perspectives into a largely technical process, revealing what truly matters to small entrepreneurs when they seek credit. The insights from this study can help PSBs improve their service delivery, enhance trust and design MSME-friendly loan systems.

Data Sources and Sample Size

The researchers used purposive sampling to ensure that participants had relevant and recent exposure to the process. The team selected respondents based on their recent experience with the loan application and sanction process in PSBs. The study includes primary data collected from 206 MSME borrowers across various districts in Odisha.

Data Collection Method

Data were collected through a structured questionnaire complemented by personal interviews. The questionnaire covered key areas that influence satisfaction, including the timeliness of decision-making, procedural clarity, services, reliability and charges. Primary data came from MSME borrowers. This study's population comprises MSME borrowers of PSBs in Odisha. Secondary data were obtained from RBI reports, government policy documents and bank annual reports.

Variable Measurements

The dependent variables, that is, borrower satisfaction, were measured on a five-point Likert scale, ranging from highly dissatisfied (1) to highly satisfied (5). Independent variables included age (young/middle aged/senior), education (higher secondary/graduation/postgraduate or above) and credit limits (below 20 lakh/20–100 lakh/above 100 lakh). Researchers developed all variables based on prior MSME credit literature and customised them to the context of Odisha's public sector banking landscape (Tables 1 and 2).

Research Design

This study employs a descriptive–analytical research design. It aims to describe the level of satisfaction among MSME borrowers and identify the underlying factors influencing their experience during the pre-sanction phase.

Results and Discussion

Table 3 and Figure 1 present the demographic profile of MSME borrowers who obtained credit from PSBs in Odisha. A majority of respondents were middle-aged (44.2%), followed by senior entrepreneurs aged 55 or older (35.9%) and young

Table 1. Elements of MSME Borrowers' Pre-stage of Loan Sanction and the Questions.

Factors	Questions Articulated
Timely decision	Addressing solutions to challenges Procedural formalities that are simple in nature Process of providing financial assistance through loans Clarity in process
Loan sufficiency	Loan in an adequate amount Reliability of the bank
Suitable and relevant Financial services	Online banking Counter services in the branch Accessibility to bank management Monitoring and recovery process
Beneficial terms for borrowing	Empathy and comforting character Staff trained in customer management Employees eager to help

Table 2. MSME Bank Credit Landscape in India.

Commercial MSME lending	Working Capital Loans: ➢ Overdraft facility ➢ Reducing OD ➢ Kissan credit ➢ TReDS (trade receivables discounting) ➢ Bank guarantee ➢ Letter of credit Term Loans: ➢ Secured terms loan ➢ Loan for the acquisition of fixed assets ➢ Addressing the long-term working capital gap ➢ Project Loan ➢ Loans backed by the credit guarantee trust for micro and small enterprises guarantee

Table 3. Distribution of Sample MSMEs Availing Credit Facilities from PSBs in Odisha.

Demographic Parameters		*N*	%
Age groups (years)	Young (below 30)	41	19.9
	Middle-aged (30–55)	91	44.2
	Senior (above 55)	74	35.9
Education levels	Higher secondary	63	30.6
	Graduation	101	49.0
	PG or above	42	20.4
Credit limits (₹)	<20 lakh	116	56.3
	20–100 lakh	57	27.7
	>100 lakh	33	16.0

borrowers aged 30 or younger (19.9%). Educationally, 49% were graduates, 30.6% had completed higher secondary education, and 20.4% held postgraduate or higher qualifications. Regarding loan sizes, most MSMEs (56.3%) availed credit below

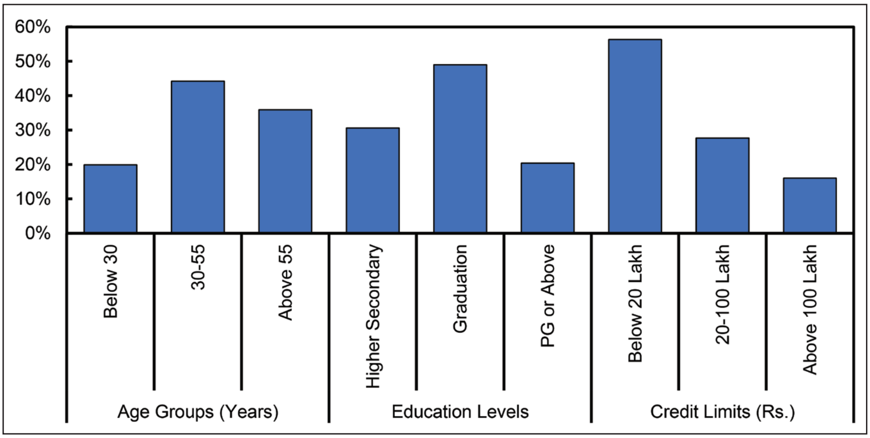

Figure 1. Distribution of Sample MSMEs Availing Credit Facilities from PSBs in Odisha.

₹20 lakh, indicating that micro and small enterprises dominate the credit landscape. This demographic structure aligns with observations by Panda and Dash (2023), who found that micro-enterprises in eastern India are composed mainly of middle-aged entrepreneurs with moderate educational backgrounds. Similarly, Singh and Ghosh (2022) emphasised that MSMEs in semi-urban Odisha rely heavily on small credit segments due to limited collateral and procedural constraints.

Table 4 and Figure 2 analyses satisfaction differences across age groups using ANOVA. The F-values for all determinants—timeliness, process, services, reliability, charges and overall satisfaction—were statistically non-significant ($p > .05$). This suggests that age does not significantly impact MSME borrowers' satisfaction levels with pre-sanction processes in PSBs. Although the mean values show minor variation, senior borrowers report slightly higher satisfaction (overall mean = 3.38); these differences are not large enough to be statistically meaningful. Thus, H_1 is not supported. This uniformity suggests that procedural experiences during loan appraisal and sanction are broadly standardised across age categories. The result corroborates the findings of Kumar and Patel (2021), who reported that digitised loan processing in Indian PSBs reduces age-based biases. Similarly, Rout and Sahoo (2022) noted that uniform loan documentation and KYC norms have streamlined the borrower experience, minimising demographic disparities. While age does not significantly affect satisfaction, educational attainment often shapes perceptions and understanding of loan processes. Hence, the next section examines differences across education levels.

Table 5 and Figure 3 compare the satisfaction levels across borrowers' educational backgrounds. The mean scores show a gradual increase from those with higher secondary education (mean = 3.24) to those with postgraduate degrees (mean = 3.42). However, the F-values across determinants are all non-significant ($p > .05$), indicating that educational level does not significantly impact satisfaction with pre-sanction processes. Hence, H_2 is also not supported. The pattern implies that the communication and procedural standards of PSBs are generally clear and uniform, irrespective of educational differences. These findings align

Table 4. Mean, *SD* and F-values of Satisfaction Levels of MSMEs Across Age Groups for Various Determinants at Pre-stage Loan Sanction by PSBs in Odisha.

	Age Groups (Years)	*N*	Mean	*SD*	*F*-value
Timeliness	Young (<30)	41	2.29	0.76	2.616^{NS}
	Middle-aged (30–55)	91	2.32	0.74	
	Senior (>55)	74	2.39	0.81	
	Total	206	2.34	0.77	
Process	<30	41	2.29	0.55	1.429^{NS}
	30–55	91	2.26	0.56	
	>55	74	2.32	0.72	
	Total	206	2.29	0.61	
Services	<30	41	2.67	0.52	2.588^{NS}
	30–55	91	2.69	0.68	
	>55	74	2.76	0.82	
	Total	206	2.71	0.67	
Reliability	<30	41	4.56	0.92	1.683^{NS}
	30–55	91	4.61	0.87	
	>55	74	4.67	0.86	
	Total	206	4.62	0.88	
Charges	<30	41	4.51	0.79	2.489^{NS}
	30–55	91	4.62	0.94	
	>55	74	4.74	0.93	
	Total	206	4.64	0.89	
Overall satisfaction	<30	41	3.26	0.71	1.409^{NS}
	30–55	91	3.30	0.76	
	>55	74	3.38	0.83	
	Total	206	3.32	0.76	

Note: *F*-value in ANOVA Between Age Groups. NS: Not significant at the 5% level ($p < .05$).

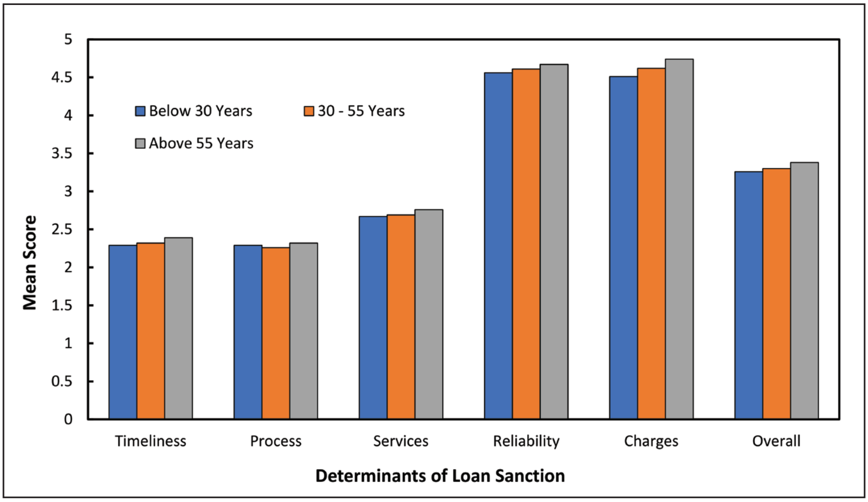

Figure 2. Mean Satisfaction Levels of MSMEs Across Age Groups for Various Determinants of Pre-stage Loan Sanction by PSBs in Odisha.

with those of Das and Behera (2021), who observed that MSME borrowers perceive pre-sanction interactions as highly standardised due to the improved transparency and simplified documentation introduced under the PSB loans in 59 minutes initiative. Likewise, Chakraborty and Roy (2023) reported that even borrowers with limited financial literacy are now better equipped to engage with credit institutions due to digital awareness drives. Although educational and age differences are statistically insignificant, the magnitude of credit availed may influence expectations and perceptions of service quality. Therefore, the analysis proceeds to test H_3.

Table 5. Mean, *SD* and F-values of Satisfaction Levels of MSME Borrowers Across Education Levels for Various Determinants of Pre-stage Loan Sanction by PSBs in Odisha.

	Education Levels	*N*	Mean	*SD*	*F*-value
Timeliness	Up to higher secondary	63	2.21	0.72	1.870^{NS}
	Graduation	101	2.33	0.78	
	Postgraduation and above	42	2.54	0.77	
	Total	206	2.34	0.76	
Process	Upto higher secondary	63	2.21	0.56	1.992^{NS}
	Graduation	101	2.27	0.65	
	Postgraduation and above	42	2.44	0.63	
	Total	206	2.29	0.61	
Services	Up to higher secondary	63	2.67	0.61	1.599^{NS}
	Graduation	101	2.74	0.71	
	Postgraduation and above	42	2.72	0.69	
	Total	206	2.71	0.67	
Reliability	Up to higher secondary	63	4.56	0.92	1.536^{NS}
	Graduation	101	4.64	0.85	
	Postgraduation and above	42	4.68	0.86	
	Total	206	4.62	0.88	
Charges	Up to higher secondary	63	4.54	0.94	1.567^{NS}
	Graduation	101	4.68	0.91	
	Postgraduation and above	42	4.71	0.82	
	Total	206	4.64	0.89	
Overall satisfaction	Up to higher secondary	63	3.24	0.75	2.054^{NS}
	Graduation	101	3.33	0.78	
	Postgraduation and above	42	3.42	0.75	
	Total	206	3.34	0.76	

Note: *F*-value in ANOVA between education levels. NS: Not significant at the 5% level ($p < .05$).

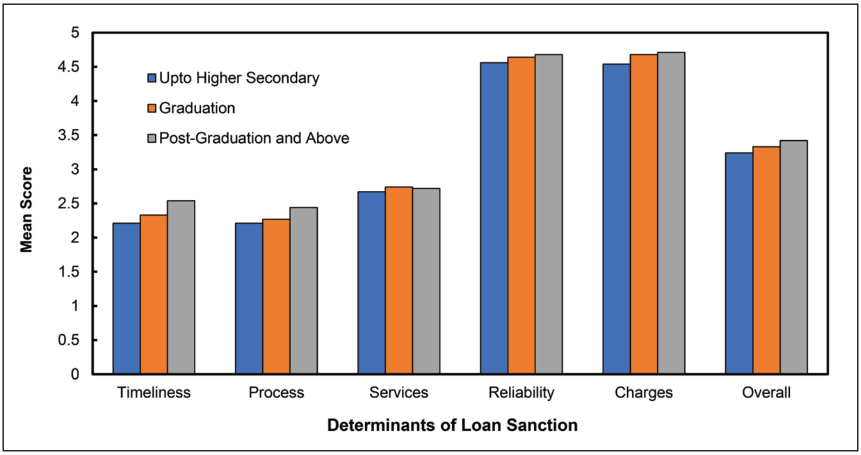

Figure 3. Mean Satisfaction Levels of MSME Borrowers Across Education Levels for Various Determinants of Pre-stage Loan Sanction by PSBs in Odisha.

The data in Table 6 and Figure 4 show that MSME borrowers with higher credit limits (> ₹100 lakh) reported marginally higher satisfaction (mean = 3.39) than those with lower credit limits (< ₹20 lakh; mean = 3.27). However, as indicated by the non-significant F-values ($p > .05$) across all determinants, these variations are not statistically significant. Thus, H_3 is rejected. This consistency implies that PSBs maintain a relatively standardised approach to MSME clients, irrespective of the size of the sanctioned loan. Larger loan seekers do not necessarily receive superior service quality, as this is often reflected in a uniform credit evaluation system. Narayan and Singh (2024) observed similar results, suggesting that digital underwriting frameworks have reduced preferential treatment based on loan size. Moreover, Mishra et al. (2022) highlighted that the RBI's standardisation guidelines for MSME lending have reduced procedural asymmetry between small and large credit applicants.

The statistical findings collectively indicate that demographic and financial differences among MSME borrowers, including age, education and credit limit, do not significantly influence satisfaction levels with pre-sanction loan processes in Odisha's PSBs. This may reflect the banks' adoption of uniform evaluation systems, online application portals, and rule-based verification frameworks that ensure consistency in service delivery. This result aligns with recent studies that emphasise process uniformity and procedural transparency as key achievements of financial reforms. Kaur and Sharma (2023) and Gupta (2022) noted that digitisation and MSME-focused lending schemes have improved borrowers' experiences by minimising subjectivity and bureaucratic discretion. Furthermore, Behera and Panda (2023) observed that satisfaction with MSME credit services is now more influenced by institutional performance (e.g., timeliness and communication efficiency) than by borrower demographics. From a policy standpoint, the findings underscore the need for further qualitative exploration of factors beyond demographics, such as staff responsiveness,

Table 6. Mean, *SD* and F-values of Satisfaction Levels of MSME Borrowers across Credit Limits for Various Determinants of Pre-stage Loan Sanction by PSBs in Odisha.

	Credit Limits (₹)	*N*	Mean	*SD*	*F*-value
Timeliness	<20 lakh	116	2.26	0.78	1.617^{NS}
	20–100 lakh	57	2.51	0.89	
	>100 lakh	33	2.37	0.61	
	Total	206	2.34	0.76	
Process	<20 lakh	116	2.29	0.58	1.543^{NS}
	20–100 lakh	57	2.32	0.64	
	>100 lakh	33	2.21	0.62	
	Total	206	2.29	0.61	
Services	<20 lakh	116	2.64	0.71	1.932^{NS}
	20–100 lakh	57	2.76	0.79	
	>100 lakh	33	2.89	0.51	
	Total	206	2.71	0.67	
Reliability	<20 lakh	116	4.58	0.81	1.944^{NS}
	20–100 lakh	57	4.66	0.89	
	>100 lakh	33	4.72	0.94	
	Total	206	4.62	0.88	
Charges	<20 lakh	116	4.57	0.91	1.464^{NS}
	20–100 lakh	57	4.71	0.93	
	>100 lakh	33	4.74	0.84	
	Total	206	4.64	0.89	
Overall satisfaction	<20 lakh	116	3.27	0.76	2.460^{NS}
	20–100 lakh	57	3.39	0.83	
	>100 lakh	33	3.39	0.70	
	Total	206	3.32	0.76	

Note: *F*-value in ANOVA Between Credit Limits. NS: Not significant at the 5% level ($p < .05$).

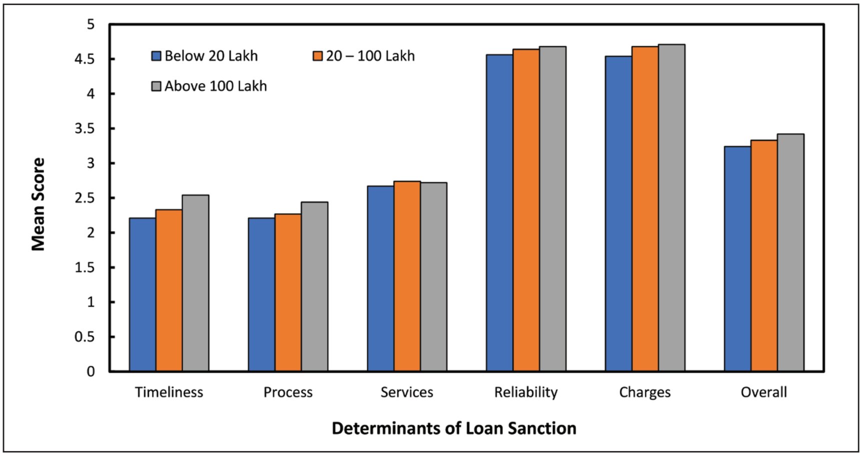

Figure 4. Mean Satisfaction Levels of MSME Borrowers Across Credit Limits for Various Determinants of Pre-stage Loan Sanction by PSBs in Odisha.

documentation clarity and post-sanction follow-up, that may influence borrower satisfaction. The non-significance across all hypotheses underscores that procedural equality has largely been achieved in the pre-sanction phase, reflecting commendable progress in public sector banking reforms in Odisha.

Conclusions

The study's findings indicate that PSBs in Odisha have achieved a high level of procedural uniformity in the pre-sanction phase of MSME loan processing. Borrowers' satisfaction levels do not differ significantly by age, education or credit size, suggesting that banks follow standardised systems that treat all applicants similarly. This reflects consistent application of policies, digital frameworks and rule-based assessment methods that minimise personal bias and demographic influence. The results further imply that reforms in digital lending, such as online application portals and automated evaluation tools, have enhanced procedural transparency and fairness. Borrowers from diverse backgrounds experience comparable levels of satisfaction, indicating the successful implementation of inclusive and efficient lending practices. Although demographic variables do not have a significant effect on satisfaction, this uniformity highlights the maturity of operational processes in PSBs. It also suggests that borrowers' satisfaction is now shaped more by the quality of institutional performance, such as timeliness, communication and clarity of documentation, than by personal characteristics. From a policy and managerial perspective, the study underscores that the next stage of improvement should focus on service delivery dimensions rather than demographic targeting. Strengthening staff responsiveness, improving documentation clarity and ensuring proactive communication could further elevate MSME satisfaction. Overall, the research concludes that Odisha's PSBs have established equitable and standardised pre-sanction loan processes, reflecting meaningful progress in MSME-oriented banking reforms.

Policy Implications

- *Promote Uniform Service Delivery:* The absence of significant differences across age, education and loan size suggests that banks have achieved a commendable degree of procedural uniformity. Policymakers should ensure this consistency is institutionalised through continued standardisation of pre-sanction procedures.
- *Enhance Qualitative Aspects of Service:* Since demographic factors do not significantly influence satisfaction, attention should shift towards qualitative dimensions, such as staff behaviour, communication clarity and response timeliness, to enhance the overall borrower experience.
- *Strengthen Digital Banking Infrastructure:* The results reflect the success of digitised systems in ensuring equality. Expanding digital loan processing

platforms and enhancing user interfaces can maintain uniformity while minimising human error and discretionary delays.

- *Institutionalise Transparency Frameworks:* Uniform satisfaction levels highlight the value of transparency. Stakeholders should prioritise continuous monitoring of disclosure norms, clarity in loan documentation and borrower awareness initiatives to sustain borrower trust.
- *Encourage Capacity Building for Bank Personnel:* With demographic factors no longer a barrier, training programmes should focus on improving staff responsiveness, customer interaction and service empathy to enhance satisfaction beyond process efficiency.
- *Develop Feedback-driven Evaluation Systems:* Policy frameworks should introduce structured feedback mechanisms for MSME borrowers, enabling banks to identify emerging service gaps that are not captured through quantitative indicators.
- *Integrate Post-sanction Follow-up Policies:* Uniform pre-sanction satisfaction suggests the next policy focus should shift to post-sanction monitoring, repayment guidance and grievance resolution to ensure end-to-end service satisfaction.
- *Support Inclusive Access Policies:* As smaller borrowers report comparable satisfaction levels, maintaining inclusive access to affordable credit must remain central to MSME development strategies, ensuring no procedural bias based on enterprise scale.
- *Encourage State-level Coordination:* State financial authorities should collaborate with PSBs to ensure a continuous assessment of loan process reforms and integrate insights from MSME borrowers into ongoing policy adjustments.
- *Advanced Research-linked Policy Evaluation:* The lack of significant demographic effects invites more nuanced policy research into institutional and behavioural variables that shape satisfaction, encouraging evidence-based reform design.

In summary, the statistical uniformity in satisfaction outcomes underscores that Odisha's PSBs have successfully minimised demographic disparities in loan sanctioning. Future policies should shift from standardisation towards service enhancement, focusing on responsiveness, effective communication and continuous improvement mechanisms.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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References

Akang, A., & Udo. (2024). Regulatory compliance and access to finance: Implications for business growth in developing economies. *Sciental Journal of Education, Humanities and Social Sciences*, *1*(2), 8–23. https://doi.org/10.62536/sjehss.2023.v1.i2.pp8-23

Ashiq, M., Rubab, N., Hussain, S., & Asad, M. (2023). Customer loyalty in banking: A comprehensive review. *Journal of Business Research*, *157*, 112–125.

Basha, S., Elgammal, M., & Abuzayed, B.(2021). Online peer-to-peer lending: A review of the literature. *Electronic Commerce Research and Applications*, *48*, 101069. https://doi.org/10/1016/je.elerap.2021/101069

Behera, A., & Panda, S. (2023). Digital lending transformation and MSME financing in Eastern India. *Indian Journal of Finance and Banking*, *12*(3), 88–101.

Chakraborty, T., & Roy, P. (2023). Financial literacy and MSME satisfaction: Evidence from eastern India. *Asia-Pacific Journal of Business Administration*, *15*(2), 211–229.

Chaturvedi, A., & Mishra, S. (2024). A comprehensive review of MUDRA loan scheme: Implications for MSME development. *Smart Moves Journal Ijoscience*, *9*(10). https://doi.org/10.24113/ijoscience.v9i10.483

Da Silva, Y., Temu, T., & Lamawitak, P. (2024). Knowledge management-based efforts to improve MSME performance (credit union intervention for MSME actors in Sikka Regency). *Dinasti International Journal of Education Management and Social Science*. https://doi.org/10.38035/dijemss.v5i4.2454

Das, P., & Behera, R. (2021). Pre-sanction credit assessment in Indian PSBs: A borrower perspective. *Journal of Small Business and Enterprise Development*, *28*(7), 1104–1123.

De Carvalho, G., Resende, L., Pontes, J., De Carvalho, H., & Betim, L. (2021). Innovation and management in MSMEs: A literature review of highly cited papers. *SAGE Open*, 11. https://doi.org/10.1177/21582440211052555

Divya, & Sharma, S. (2025). Role of NBFCs on MSME financing: A special reference of credit accessibility and economic growth. *International Journal of Business Ethics in Developing Economies*. https://doi.org/10.21863/ijbede/2025.14.1.001

Dubey, S. (2023). Financing of small-scale industries in India: A survey of literature. *International Journal for Research in Applied Science and Engineering Technology*. https://doi.org/10.22214/ijraset.2023.53750

Government of India, Ministry of Finance. (2025, July 28). *Public sector banks' MSME bad loans falling*. Press Information Bureau. https://pib.gov.in/

Gupta, R. (2022). Evaluating service quality in MSME banking: A comparative study of public and private banks. *Journal of Business Studies Quarterly*, *13*(2), 33–49.

Jena, B. K. (2025). An analytical study of MSME financing in Odisha, India. *Journal of Management and Science Research*, *8*(2), 156–178.

Kaur, J., & Sharma, N. (2023). Impact of digital banking on MSME loan satisfaction in India. *International Journal of Management Studies*, *10*(1), 45–60.

Kumar, V., & Patel, R. (2021). Standardization of MSME credit evaluation in public sector banks. *Journal of Banking and Finance Research*, *9*(4), 122–136.

McKinsey & Company. (2025, August 10). *Why the future of MSME banking is digital*. https://www.mckinsey.com/

Mckillop, D., French, D., Quinn, B., Sobiech, A., & Wilson, J. (2020). Cooperative financial institutions: A review of the literature. *International Review of Financial Analysis*, *71*, 101520. https://doi.org/10.1016/j.irfa.2020.101520

Mishra, S., Reddy, D., & Mohanty, P. (2022). Regulatory influence on MSME credit process efficiency in India. *South Asian Journal of Business and Economics*, *11*(3), 77–91.

Narayan, M., & Singh, P. (2024). Credit limit and satisfaction asymmetry in MSME banking. *Asian Journal of Economics and Business Research*, *19*(2), 55–70.

Panda, R., & Dash, S. (2023). Age and experience dimensions in MSME entrepreneurship in Odisha. *Journal of Rural Management Studies*, *7*(2), 61–74.

Reserve Bank of India. (2025, February 21). *Reserve Bank of India (prepayment charges on loans) directions, 2025*.

Reserve Bank of India. (2025, March 24). *Master directions: Reserve Bank of India (priority sector lending – targets and classification) directions, 2025*.

Rout, S., & Sahoo, B. (2022). Borrower satisfaction in MSME finance: An empirical analysis of public sector banks. *Indian Banking Review*, *15*(1), 39–54.

Supriyadi, A., Saifi, M., & Np, M. (2024). The effect of financial literacy on loan repayment performance of MSMEs: A literature review. *KnE Social Sciences*. https://doi.org/10.18502/kss.v9i11.15779

Swaminathan, J. (2024, November 16). *MSMEs: Bridging the credit gap through improving confidence in lending.* Federation of Telangana Chambers of Commerce and Industry CEO Forum, Hyderabad. Bank for International Settlements. https://www.bis.org/

Tambunan, E., Enuh, K., Ubaidullah, U., & Tamba, M. (2022). Capital access for micro small medium enterprises. *Jurnal Ekonomi dan Perbankan Syariah*. https://doi.org/10.46899/jeps.v10i2.375

Umami, I., Pee, A., Sulaiman, H., & Mar'ati, F. (2024). A literature review of MSME success: Acceptance and use of technology, financial access, and strategic cooperation. *Multidisciplinary Reviews, 6*, 2023ss086. https://doi.org/10.31893/multirev.2023ss086

Book Review

Review of Professional Management:
A Journal of Management
24(1) 124–129, 2026

DOI: 10.1177/09728686241311640
rpm.ndimdelhi.org

Eric Ries, *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. New York: Crown Business, 2011, 336 pp., ₹1,364.

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Introduction

In today's fast-paced and ever-evolving technological landscape, entrepreneurs are encountering challenges that are both unprecedented and multifaceted. The relentless pace of innovation, coupled with intense global competition and constantly shifting consumer preferences, demands that startups craft business models that are not only sustainable but also capable of rapid scaling. The traditional methods of business management—characterised by extensive long-term planning and substantial upfront investments—are no longer sufficient in an environment where speed to market, adaptability, and real-time feedback are paramount for success.

Eric Ries, in his groundbreaking work *The Lean Startup*, reimagines the process of building and developing new businesses. Drawing upon his rich experiences as an entrepreneur and his association with the startup accelerator Y Combinator, Ries introduces a revolutionary methodology that emphasises continuous experimentation, iterative development, and learning validated by tangible data. This approach is designed to minimise waste and maximise value by harnessing real-time customer insights to steer processes for decision-making Since its debut in 2011, *The Lean Startup* has cemented its position as a seminal text in the field of entrepreneurship. Its principles have influenced startups and established corporations alike, reshaping traditional perspectives on product development, testing, and scaling. This review delves deeply into the core tenets of Ries's methodology, critically evaluates its merits, and explores its broader implications for modern management practices in an era of constant change.

Summary of the Chapters of the Book

In *The Lean Startup*, Eric Ries presents a methodology that transforms the way entrepreneurs build and scale businesses. Rather than relying on traditional methods of business planning and long-term forecasting, Ries advocates for an approach centred around rapid experimentation, data-driven decision-making, and continuous iteration. Through the Build-Measure-Learn feedback loop, startups can quickly test their assumptions, minimise risk, and learn from real customer feedback to build products that truly meet market needs. Each chapter of the book introduces key concepts and frameworks that make up the Lean Startup methodology, from the importance of defining a clear vision, to the need for validated learning, and the critical decision of whether to pivot or persevere.

In the following chapter-wise summary, we will explore how Ries guides entrepreneurs through the process of developing a viable business model, testing hypotheses, gathering feedback, and scaling their ventures. Through each step, the Lean Startup approach encourages agility, resilience, and a focus on learning rather than perfection. Whether you are a budding entrepreneur, an established business leader, or an innovation manager in a larger corporation, the principles laid out in each chapter provide a practical, flexible guide to navigating the uncertainties of entrepreneurship and creating scalable, sustainable businesses.

In the first chapter, Eric Ries sets the stage by addressing the core concept of the book: startups are not just small companies or tech-based ventures; they are any organisation that is designed to create a new product or service in conditions of extreme uncertainty. He defines a startup as an organisation dedicated to creating something new under conditions of uncertainty. The Lean Startup methodology, he argues, is applicable to any organisation, whether it's a small company or an established enterprise, as long as it is aiming to develop something new.

Ries draws a stark contrast between startups and large companies. Large companies often have a clear business model and predictable processes, but startups must create their own path and figure out what works. This environment of uncertainty requires a different approach, one that minimises risk, maximises learning, and adapts quickly based on feedback. The traditional 'waterfall' model of product development, where businesses spend months or years planning and building before launching, does not work in such uncertain conditions.

The chapter lays the foundation for the Lean Startup methodology by introducing key concepts like validated learning and the importance of rapid feedback loops. Validated learning means measuring progress through experiments that test hypotheses, rather than relying on conventional metrics like revenue or profit.

In the second chapter, Ries further refines his definition of a startup and introduces the concept of the Minimum Viable Product (MVP). The MVP is the simplest version of a product that allows a team to begin the learning process as quickly as possible with the least amount of effort.

The chapter focuses on the importance of building rather than theorising. Startups are often based on untested assumptions about customers and the market. The MVP helps to test these assumptions early and cheaply, with the goal of learning what works and what does not. Ries explains that the MVP does not need to be a final product but a prototype that can be tested in the real world to validate or invalidate the startup's hypotheses.

Ries emphasises that the MVP is not about 'minimizing the product' but about building just enough to start testing the most critical hypotheses. He also outlines the Build-Measure-Learn feedback loop, which is the core of the Lean Startup methodology. This loop is where entrepreneurs build the MVP, measure customer responses, and learn from the feedback to improve the product.

The third chapter focusses on validated learning, a central concept in the Lean Startup methodology. Ries explains that startups must focus on learning what customers really want (rather than what you think they should want) as early and as efficiently as possible. Startups need to measure progress through learning milestones, not traditional financial or product milestones.

Validated learning, according to Ries, is best achieved through rapid, small experiments. These experiments are designed to test hypotheses and measure the effectiveness of the MVP in addressing the most important questions. For example, a simple experiment might involve releasing a landing page with a product description and tracking how many visitors click through to learn more or sign up.

The chapter introduces actionable metrics as a way to measure progress. These are metrics that can help entrepreneurs make informed decisions based on real-world data, as opposed to vanity metrics (like website hits or social media likes) that can be misleading. Ries stresses the importance of focusing on cohort analysis—looking at how different customer segments behave over time—to determine the true value of the product.

In the fourth chapter, Ries focuses on leap-of-faith assumptions—the fundamental beliefs and hypotheses that a startup holds about its customers, product, and business model. These are assumptions that must be tested early to determine whether the product or service has potential in the market.

Ries explains that many entrepreneurs make the mistake of developing a product based on assumptions that may not be true. Startups must therefore identify these critical assumptions early in the development process and use the MVP to test them. This chapter provides strategies for how to design experiments that test key assumptions efficiently.

He also introduces the idea of pivoting—a significant shift in strategy, often in response to failure or misalignment between customer needs and the product. Startups should be prepared to pivot when feedback indicates that their original assumptions were wrong.

The fifth chapter discusses A/B testing and other techniques used to experiment with different versions of a product or marketing strategy. A/B testing involves comparing two variations of a product or service to see which one performs better with customers. By running these experiments, startups can collect valuable data about customer preferences and behaviours.

Ries highlights that small-scale experiments—whether they are A/B tests, split tests, or simple surveys—allow startups to gather data quickly and make informed decisions about what direction to take. He stresses that A/B testing is not limited to just digital products; it can be applied to various aspects of a business, including customer acquisition channels and pricing strategies.

The chapter discusses how to iterate based on the results of A/B tests. Entrepreneurs can modify their product or business model in response to customer feedback, ensuring that the product evolves in a way that meets real customer needs.

In the sixth chapter, Ries introduces innovation accounting, a new approach to measuring the progress of a startup. Innovation accounting focuses on tracking progress through the process of experimentation and learning, rather than through traditional financial metrics. The goal is to develop metrics that reveal whether a startup is on the path to success.

Ries explains that startups often get caught up in vanity metrics, such as the number of social media followers or website visits, which do not provide meaningful insight into whether a product is actually meeting customer needs. Instead, innovation accounting encourages startups to use actionable metrics that are tied directly to learning and improvement.

The chapter highlights how startups can track their progress using specific, actionable metrics. One key metric is cohort analysis, where startups look at specific groups of users over time to see if their behaviours are improving. The goal of innovation accounting is to help startups move past vanity metrics and focus on real, meaningful data that can guide their decisions.

The seventh chapter introduces one of the most critical decisions an entrepreneur faces: whether to pivot or persevere. Based on the feedback from the MVP and the data collected during the experiment phase, entrepreneurs must decide whether to continue with their current product strategy or change direction.

Ries explains that a pivot does not mean abandoning the startup's original mission. Instead, it involves making a substantial change to the product, strategy, or business model based on what has been learned from testing and customer feedback. A pivot could involve changing the product features, targeting a different customer segment, or shifting the focus to a different business model.

On the other hand, persevering means that the entrepreneur believes the product is on the right track and should continue to be developed, with adjustments made based on customer feedback. The decision to pivot or persevere is one of the most difficult but necessary choices that entrepreneurs face. The key is to make this decision based on the data from the Build-Measure-Learn feedback loop, rather than emotions or preconceived ideas.

In the eighth chapter which is titled 'Batch – The Importance of Small Batches' Ries discusses the importance of working in small batches rather than large, infrequent production cycles. This concept comes from lean manufacturing principles, which suggest that smaller batches lead to faster feedback, quicker learning, and less waste.

Startups should strive to break their work into smaller, more manageable tasks and produce smaller units of products or features to test them quickly. Small batches allow entrepreneurs to learn faster, pivot when necessary, and avoid investing significant resources into a product or feature that customers do not need or want.

Ries also discusses the concept of continuous deployment, where startups regularly release small updates and improvements to their product. This contrasts with the traditional approach of waiting for a fully finished product before launching. The key to success in a startup is to stay flexible and continuously improve based on feedback.

Once a startup has validated its product and achieved some level of market fit, the focus shifts to growth. Chapter nine explores the strategies that startups can use to scale their businesses. Ries introduces the concept of engine of growth, which describes how a company can drive sustainable growth through repeatable, scalable processes.

There are three primary engines of growth that startups can pursue: the viral engine, the paid engine, and the sticky engine. Each of these engines has different strategies for customer acquisition and retention, but all require constant testing and iteration to ensure they are effective.

The chapter emphasises that growth should be driven by customer feedback and continuous learning, not just by scaling up operations without understanding customer needs. The key is to use the Build-Measure-Learn feedback loop to refine the product and business model as the company grows.

In the final chapter, Eric Ries shifts focus from startups to larger organisations and discusses how the principles of the Lean Startup methodology can be applied to foster innovation within established companies. While startups are inherently agile and adaptable, larger enterprises often struggle with the bureaucracy and established processes that stifle innovation. Ries argues that the same Lean Startup principles that benefit small companies can also be leveraged by large corporations to create a culture of innovation and agility.

Ries introduces the idea of creating internal startups within a large organisation—small, autonomous teams that operate like startups but within the framework of a larger company. These teams work on developing new products or services while using Lean Startup methodologies such as rapid experimentation, iterative design, and validated learning. By empowering these teams with the freedom to innovate and make decisions based on real-world feedback, large companies can capture the benefits of startup agility without losing the resources and infrastructure that come with being a larger organisation.

One key concept introduced in this chapter is the 'Lean Innovation' model, which is a strategic approach for applying Lean Startup principles to new product development within big companies. Ries explains that large organisations can create a culture of experimentation by allowing teams to operate under a startup-like environment where they are encouraged to test ideas quickly, learn from failure, and use data to inform decisions. He emphasises the importance of autonomy for these innovation teams—without it, the risk of corporate inertia and lack of innovation becomes too great.

Another example Ries provides is that large organisations can benefit from continuous innovation by allowing multiple small teams to work on different product lines, testing hypotheses, and refining their ideas in parallel. This prevents the bottleneck that often occurs when large corporations rely on central planning and slow decision-making processes.

Ries also addresses the challenge of integrating Lean Startup principles within a corporate culture that is traditionally risk-averse and focused on maintaining stability. He advises senior leadership to support experimentation, to tolerate some level of failure, and to measure success based on learning rather than just financial outcomes. The most innovative organisations are those that embrace adaptive learning—companies that continuously evolve their products and business models to meet customer needs and remain competitive.

The final chapter is about leveraging the Lean Startup methodology to innovate within larger organisations. Ries outlines how established businesses can adopt a more agile, experimental mindset and create a more dynamic environment for innovation. By applying Lean principles to innovation processes, large companies can avoid becoming stagnant and continue to evolve in the face of rapid technological changes and shifting customer demands.

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