© SEP 2026 | IRE Journals | Volume 10 Issue 3 | ISSN: 2456-8880
DOI: https://doi.org/10.64388/ire1724652

Artificial Intelligence, Digital Payments and Consumer Behaviour: Emerging Innovations and Their Impact on the Indian Commerce Ecosystem

DR. GAYATRI DADMI
Associate Professor, Department of Commerce, Government First Grade College, Ilkal

Abstract- ***The relentless proliferation of artificial intelligence (AI), Fin Tech and digital payment innovations has revolutionized the contemporary business landscape offering pathbreaking opportunities for innovative technological intervention, superior customer experience, enhanced financial inclusion, and sustainable business development in the Indian economy with increasing penetration of Unified Payments Interface (UPI), adoption of AI-enabled chatbots, recommendation engines, predictive analytics, digital enterprise platforms, consumer behaviour and decision-making towards digital commerce; leading towards an integrated conceptual insight into the nexus between emerging technologies and consumer behaviour; in this context, this conceptual research article aims to explore the transformative impact of artificial intelligence and digital payment innovation on India's commerce environment, identify the significant technological, cognitive and institutional determinants of consumer acceptance and purchase intention, develop a generic conceptual model explaining the interrelationship between technological innovation, perceived usefulness, perceived ease of use, digital convenience, consumer trust, perceived risk, digital literacy, and behaviour; citing the theoretical inspiration from technological acceptance model (TAM), Unified theory of acceptance and use of technology (UTAUT), and the trust and risk framework, this study applies a conceptual and analytical approach through syntheses of critical quality research, theoretical antecedents, secondary data till August 2026 related to AI-enabled shopping, UPI transactions, Electronic commerce, and emerging digital economy; proposing a contextualized integrative conceptual framework in which digital payment accessibility and AI enabled system are essential complementary technological determinants influencing user adoption and purchase behaviour through mediated effects of perceived usefulness, ease of use and trust, with digital literacy, privacy & security risk, and technological accessibility moderating them; previous empirical and conceptual studies have noted that technological convenience, personalization, authenticity and consumer confidence are key issues in digital commerce platform adoption while cybersecurity issues, privacy risks, technological algorithms limitations and digital divide are persistent challenges; this conceptual work enriches the existing Commerce and Management literature by unifying previously exclusive discourses on AI powered customer engagement and digital payment acceptance building up testable research propositions and providing important theoretical, managerial and policy implications for retail traders, financial service providers, MSMEs, consumers and stakeholders for inclusive, responsible and innovative exploration of the developing digital commerce ecosystem in India.***

Keywords: ***Artificial Intelligence, Digital Payments, Consumer Behaviour, Unified Payments Interface, Digital Commerce, Technology Acceptance Model, Consumer Trust, Financial Inclusion, Business Innovation, India.***

I. INTRODUCTION

The global commercial system has undergone a paradigm shift of unprecedented magnitude with the rapid journey of digitalization, technological breakthroughs, innovative financing and the infusion of artificial intelligence (AI) into contemporary commercial strategies has redefined the conventional mode of business operations, consumer engagement, monetary transactions and strategic organizational decision-making, while the proliferation of digital commerce and digital-enabled financial services and interconnected financial technology solutions has paved way for enhancement in operational efficiency, market accessibility, ease of consumer convenience and competitive advantage in the global commercial sphere (UNCTAD, 2024), where digital commerce has been gaining considerable momentum in the global economy; simultaneously, emerging technology of artificial intelligence has assumed the role of a catalyst in business and retail environments through intelligent chatbots, recommendations system, precision marketing and predictive analysis, automated customer services and data analytics in understanding

consumer needs, creating relevant shopping experiences, assisting purchase decision-making and navigating the consumer shopping journey (Kamoonpuri & Sengar, 2025), where the consumer buying behaviour, perceptions towards shopping and intention to adopt AI-enabled services have been influenced by various factors; in India, digital commerce has been rapidly expanding owing to digital payment solutions like the Unified Payments Interface (UPI) technology developed by the National Payments Corporation of India that enhances real-time financial and commercial transactions via an interoperable digital financial interface with mobile phone, internet and digital device access (Ministry of Finance, 2026), while the consumer behaviour and acceptance of technology, trust and perceived risk, digital access and facilitating condition as perceived factors has been theorized through Davis' (1989) Technology Acceptance Model and Venkatesh et al.'s (2003) Unified Theory of Acceptance and Use of Technology, but the interconnected relationship among AI, digital payment services, consumer choice and behavior and technology adoption has received theoretical attention only independently without taking cognizance of their convergence within the Indian digital commercial milieu. Therefore, considering that understanding consumer propensity and response to electronic payment and artificial intelligence-driven services offers important insights towards commercial innovation, the present conceptual research article synthesizes the available literature up to August 2026; integrating existing theoretical perspectives, it conceptualizes the diverse connections between AI-enabled services, digital payment trust, convenience, perceived risk, accessibility and technology adoption, makes managerial recommendations and suggests avenues for further empirical research.

Conceptual background and Indian commerce context
This excerpted conceptual background of artificial intelligence, digital payments and consumer behaviour within Indian commerce ecosystem illustrates the increasing nexus among technological innovation, financial infrastructure, commercial development, and consumer expectations with one another in which artificial intelligence refers to the application of any intelligent computing technology to facilitate automated decision making, personalised customer interaction, predictive analytics, and business process enhancement through existing applications like AI-enabled chatbot, recommenders, customer-service automation, demand forecasting, with additional potential avenues through emerging generative AI practices for conversational shopping help, context-aware shopping, etc. - Huang and Rust, 2021, emphasizing that the domain of marketing research, customer insight, personalisation, and relationships will all benefit from the use of artificial intelligence technologies. Digital payment refers to the electronically-aided financial transaction procedure executed through mobile-enabled applications, electronic wallets, payment gateways, inter-operable banking infrastructure, and other payment system services wherein the Indian country's Unified Payment Interface (UPI) is a well-established real-time payment system that enables digital consumers and merchants for convenient inter-bank payments and collection, the National Payments Corporation of India (NPCI) (n. D.) lists interoperability, merchant acceptance enablement, and integrated prepaid payment instrument transfer connection as some of the primary functions of the UPI system, and the Indian Digital Payments Alliance (IDPA, 2023) reports that 4.6 crore merchants and 78 crore digital-payment users are currently registered to UPI technology. Consumer behaviour as referring to the psychological, social, technological, and situational processes that trigger product awareness, adoption, perception, and evaluation, purchase intention, post-purchase evaluation, satisfaction, and loyalty wherein these processes will be more relevant when digitally connected consumers are engaged with automated shopping interfaces and digital-payment services where the effectiveness of these relationships can be moderated by digital literacy, privacy anxiety, and infrastructural unevenness as explained by Verhoef et al. (2021), the digital transformation, and business model innovation have reshaped consumer expectations, organizational resources, and competitive context; within India, the digital commerce ecosystem includes digital marketplaces, traditional sellers, micro, small and medium enterprises, fintech entities, mobile commerce applications, and platform-based value networks, including the Open Network for Digital Commerce (ONDC) that has enabled interoperable market engagement as shown by the more than 1.16 lakh retail

traders on ONDC across 630+ Indian towns and cities as of December 2025, as mentioned by the Ministry of Commerce and Industry (2025), and the present abstracted conceptual setup differentiates between existing systems such as recommendation engines, automated consumer support, UPI transfer, and marketplaces with the emerging or proposed intervention types involving generative AI help in purchase, intelligent guidance during transaction, AI-enabled personalised payment suggestion, automation in commercial decision support, among others to study the broader impact on consumer behaviour.

Critical review of literature related to the study

The evolving academic literature concerning artificial intelligence, digital payments, and consumer behaviour demonstrates the growing significance of technological innovation in transforming commercial decision-making, financial interactions, customer experiences, and business development, wherein artificial intelligence-driven recommendation systems, intelligent chatbots, automated information processing, product comparison facilities, and personalized digital interactions increasingly influence consumers' evaluation of alternatives and purchasing intentions, with Zhang et al. (2024) demonstrating through an empirical investigation of AI chatbot recommendations that perceived recommendation reliability and accuracy strengthen technological trust, whereas perceived threats to consumer autonomy may discourage acceptance of automated purchasing advice; simultaneously, research concerning India's digital payment ecosystem highlights the importance of perceived usefulness, transaction convenience, facilitating conditions, accessibility, and financial inclusion in determining consumer acceptance of Unified Payments Interface applications, as Jacob et al. (2024), examining low-income Indian consumers, identified performance expectancy, effort expectancy, and facilitating conditions as positive influences on UPI adoption intentions, while perceived risk negatively influenced behavioural intentions, thereby demonstrating that digital payment participation depends upon technological perceptions and consumer circumstances rather than infrastructural availability alone; moreover, consumer trust, transaction reliability, information security, and privacy perceptions emerge as critical dimensions of technology-mediated commercial behaviour, with Rasool and Wani (2026) identifying positive relationships among perceived payment safety, trust, convenience, and consumer spending in India, while also establishing that loss aversion can weaken the relationship between trust and increased expenditure, suggesting that technological confidence does not necessarily eliminate psychological barriers to digital purchasing; furthermore, artificial intelligence-enabled personalization contributes to contemporary customer experience through relevant product suggestions, interactive engagement, individualized information, and simplified decision-making, although Wang et al. (2024) demonstrate that recommendation acceptance reflects a balance between personalization benefits and perceived privacy violations, whereas Fink et al. (2024) establish through experimental research that greater consumer choice autonomy can improve acceptance of algorithmic recommendations, indicating that personalization effectiveness must be considered alongside consumer control and independent decision-making; additionally, technological integration has important implications for digital retailing, omnichannel commerce, micro, small, and medium enterprises, and transaction efficiency, as Behera et al. (2025) investigated determinants of electronic commerce adoption among MSMEs in Odisha, while Raj et al. (2024) examined the significance of technological compatibility and organizational conditions in shaping digital technology adoption among Indian MSMEs, and Yin (2025) demonstrated that the effectiveness of omnichannel customer experiences depends partly on the characteristics of digital and physical customer touchpoints, thereby emphasizing that commercial innovation requires the coordination of technological capabilities, organizational readiness, and consumer preferences; nevertheless, critical comparison of these contributions reveals substantial differences in research settings, theoretical perspectives, sample characteristics, and analytical methods, with studies employing structural equation modelling, regression analysis, and controlled experiments to investigate distinct aspects of digital commerce, while some emphasize convenience, trust, and recommendation effectiveness and others identify privacy concerns, perceived risks, consumer autonomy, and organizational constraints as limiting conditions;

consequently, the existing evidence supports the relevance of technological acceptance and consumer confidence but does not establish a universal or uniformly positive relationship between digital innovation and commercial outcomes, particularly because findings derived from non-Indian consumer populations may not be directly generalizable to India's socially and economically diverse markets; accordingly, the present conceptual study identifies an important theoretical gap concerning the integrated influence of AI-assisted product discovery, personalized consumer interaction, purchasing intentions, and digital payment completion, and proposes that perceived usefulness, convenience, consumer trust, perceived security, digital literacy, and technological accessibility should be examined as interconnected mechanisms through which artificial intelligence and digital payment innovations may jointly influence consumer behaviour and shape the future development of the Indian commerce ecosystem.

Literature synthesis matrix

Author(s) / year	Study context and theoretical framework	Methodology	Central findings and relevance to the proposed model
Zhang et al. (2024)	AI chatbot recommendations; Elaboration Likelihood Model	Survey of 411 Chinese consumers	Recommendation reliability, accuracy and AI trust influence adoption; supports AI information quality and consumer trust constructs
Jacob et al. (2024)	UPI adoption among low-income Indian consumers; extended UTAUT	Survey of 351 respondents; SEM	Performance expectancy, effort expectancy and facilitating conditions support adoption intention, whereas perceived risk has a negative influence; supports payment convenience and risk constructs
Wang et al. (2024)	Recommendation systems; Privacy Calculus Theory	Empirical investigation of recommendation acceptance	Perceived variety and lower perceived privacy violations support recommendation acceptance; informs personalization and privacy constructs
Fink et al. (2024)	Algorithmic recommendations; consumer autonomy	Three online experiments	Greater choice autonomy increases recommendation acceptance; supports consumer control as a possible moderating factor
Raj et al. (2024)	Digital adoption among Indian MSMEs; fit–viability and task–technology fit frameworks	Survey of 280 respondents; SEM	Technological compatibility and organizational viability are relevant to adoption; supports enterprise readiness and enabling conditions
Behera et al. (2025)	E-commerce adoption among MSMEs in Odisha	Survey of 100 MSMEs; binary logistic regression	Examines determinants of MSME e-commerce adoption; provides an Indian small-enterprise perspective for the model
Yin (2025)	Omnichannel shopping and digital customer touchpoints; Media Richness Theory and Uses and Gratifications Theory	SEM and experimental design	Different touchpoints influence customer experience and behavioural intentions; supports the integrated customer journey
Rasool and Wani (2026)	Digital payments, consumer trust and spending in India; behavioural economics	Survey-based analysis of 322 responses	Trust and convenience influence spending relationships, while loss aversion constrains spending growth;

			supports trust, payment convenience and consumer risk considerations

Above Table 1 Showing Critical synthesis of selected academic studies published related to topic of the study

Research gap, problem statement and objectives

The increasing convergence of AI, digital payments, and platform-based commercial innovations in India's dynamic business environment has led to rich academic debate on technology acceptance, consumer buying behaviour, customer engagement, financial inclusion, and digital transformation, although a closer analysis of the existing literature reveals conceptual and theoretical gaps since prior research has often viewed AI-enabled purchase experiences and digital payment adoption as relatively separate technological phenomena, with analysis of consumer purchase intentions towards AI-based AI enabled shopping Chatbot (Chakraborty et al., 2024), Indian consumer adoption of UPI (Razi-ur-Rahim et al., 2024); and, despite highlighting the importance of including technological touchpoints, consumer behaviour mechanisms, and consumer outcomes in integrative models of the customer journey and the potential mediating effect of consumer trust, perceived usefulness, and perceived ease of use between technological innovations and consumer purchase outcomes (Mele et al., 2025); analyzing the mediating effect of trust and perceived risk (Ding and Najaf, 2024), systematic review of AI in the customer journey (Gouveia and Santos, 2025), and describing the need for integrated research models accounting for technological complementarities, contextual differences, and trade-offs (Zhong et al., 2024); the existing literature has not sufficiently conceptualized the impact of the combined effect of AI-powered product recommendations, personalized digital interactions, digital payment ease of use, and consumer processing of information, shopper journey, and commercial outcomes; hence, the guiding research problem relates to lack of integrated conceptual understanding of the impact of combination of AI and digital payment innovations on consumer awareness, technology acceptance, purchase intention, transaction, satisfaction, and adoption behaviour within India's complex socio-economic- technological setting where variations in digital literacy, consumer confidence, financial access, security perceptions, and business readiness may influence adoption; thus, the present conceptual research article aims to conceptualize the inter-relationships between AI-enabled commercial innovations, and digital payments in India's commercial ecosystem; identify the predictive variables of AI-enabled commercial innovations on consumer acceptance, technology acceptance, and purchase behaviour through technology acceptance and behavioural theories; explore the mediating variables of perceived trust, perceived usefulness, perceived convenience, and related consumer thoughts on the association between technological innovations and consumer consequences; derive a consolidated theoretical model linking AI-enabled shopping virtual assistant, personalized digital interactions, digital payment convenience, consumer decision-making, and emerging commercial consequences; develop hypotheses for empirical testing based on theoretically justifiable AI-enabled innovation acceptance, consumer trust, perceived risk, consumer purchase intention, and adoption behaviour; suggest potential theoretical, managerial, institutional, and policy implications for commercial organizations, micro, small, and medium enterprises, digital payments organizations, banks, and policymakers, thereby contributing to the Commerce and Management literature through a conceptual convergence of the interrelated spheres of technological opportunities, contextual boundaries, and innovations that are responsible, inclusive, and sustainable.

Theoretical foundations

The theoretical basis for the present conceptual paper is relatively defined by the integrated utilization of the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Trust-Risk and Privacy Calculus perspectives, which together provide analytical guidance for conceptual examination of the possible impacts of AI-powered commercial innovation and digital payment convenience on Indian consumer perceptions, behavioural intentions, purchase decision and commercial interactions; the Technology Acceptance Model (developed by Davis, 1989)

highlights perceived usefulness and perceived ease of use as the essential determinants of individuals' acceptance of technological systems, thus consumers may exhibit a higher level of willingness to make use of AI-powered shopping assistant, personalized recommendation engine and digital payment apps if they are perceived to be more useful and easier to adopt; and the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003) further offers four core constructs of performance expectancy, effort expectancy, social influence, and facilitating conditions, driving the acceptance process, thus not only individuals' evaluations, but also perceived performance benefits, social norms, infrastructural and institutional support could influence consumers' tendency to accept digitally mediated shopping innovation; additionally, the Trust-Risk perspective (Pavlou, 2003) places primary importance on consumer trust and perceived risk, thereby suggests consumers' willingness to engage in digital commerce as well as their propensity for AI-driven recommendation engine and digital payment assistance may depend on whether they feel confident of the information reliability, transaction security, service dependability and potential financial loss; the Privacy Calculus model (Dinev and Hart, 2006) explains individuals' behavior on information disclosure by weighing the potential benefits against privacy risks, which is also relevant to consumers' acceptance of algorithmic personalization, algorithmic decision-making, and digitally mediated purchase behavior. In sum, these theoretical approaches work synergistically by explaining different but interwoven factors on technology acceptance, with TAM arguing perceived usefulness and perceived ease of use, UTAUT extending these construct matters into social influence and facilitating conditions, and the Trust-Risk approach elaborating perceptions of security and vulnerability in online environments while conceptually differentiating between perceived usefulness and performance expectancy, perceived ease of use and effort expectancy, and trust and perceived security; given these considerations, the proposed integrated model illustrates how AI-enabled innovation and the convenience of digital payment might influence consumer behavioral intention, through distinct technological, psychological, and contextual processes and with moderating considerations such as digital literacy, infrastructural access, and privacy concern, thus offering a theoretically robust foundation for understanding future consumer behaviors, commercial innovations and empirical relationships in the Indian digital commerce ecosystem.

Research methodology

Research Design: The current research is conceptually based qualitative and theory development research design based on a systematic critical review of published research literature and institutional websites to analyze the nexus between artificial intelligence, digital payment devices, consumer behavior and commercial innovation in the Indian commerce system. In line with Jaakkola (2020), this study is more focused on theoretical synthesis, conceptual integration, and model development instead of primary empirical research. It uses traditional technology acceptance and trust-oriented viewpoints to develop an integrated framework to understand how emerging commercial technologies impact consumer perceptions, purchasing intentions, and behaviors.

Source Selection: This research methodology aims to use sources of information that include peer-reviewed journal articles, theory papers, academic and research-related publications and trustworthy research reports issued or accessible before 31 August 2026, in order to support the research development according to dates and trustworthiness. The selection of sources is based on their theoretical importance, theoretical contribution, and method quality, as well as and focus on artificial intelligence, adoption of digital payment, trust of consumers, acceptance of technology, electronic commerce, and Indian business environment, especially on comparative and complementary research findings.

Information Sources: Relevant literature will be gathered from online academic sources such as Scopus, Web of Science, Google Scholar, Science Direct, Springer Link, Emerald Insight, and other leading academic publishers with relevant official reports, statistical data, and other sources available from the official websites of the National Payments Corporation of India, Reserve Bank of India, Government of India departments, and others. The proposed source-selection method draws inspiration from the work of Snyder (2019) and has been specified

by transparent literature collection, in-depth analysis, and systematic discussion of relevant theoretical and empirical work.

Literature Identification and Selection Criteria: The literature identification was carried out by applying combinations of keywords (used with Boolean Operators where applicable): "artificial intelligence in commerce," "AI-assisted shopping," "consumer behaviour," "digital payments in India," "UPI adoption," "consumer trust," "perceived risk," "financial inclusion," "digital transformation," and "AI-powered retail innovation." The retrieval is limited to studies and articles published by August 2026. Publications were identified by screening title, abstract, and (any fully available) full-text articles. Articles relevant to the four individual conceptual structures as well as to the two technical applications and commercial environment in India were included. Articles which are of different brands and were irrelevant, duplicated, unsupported, or published after the cutoff data was excluded.

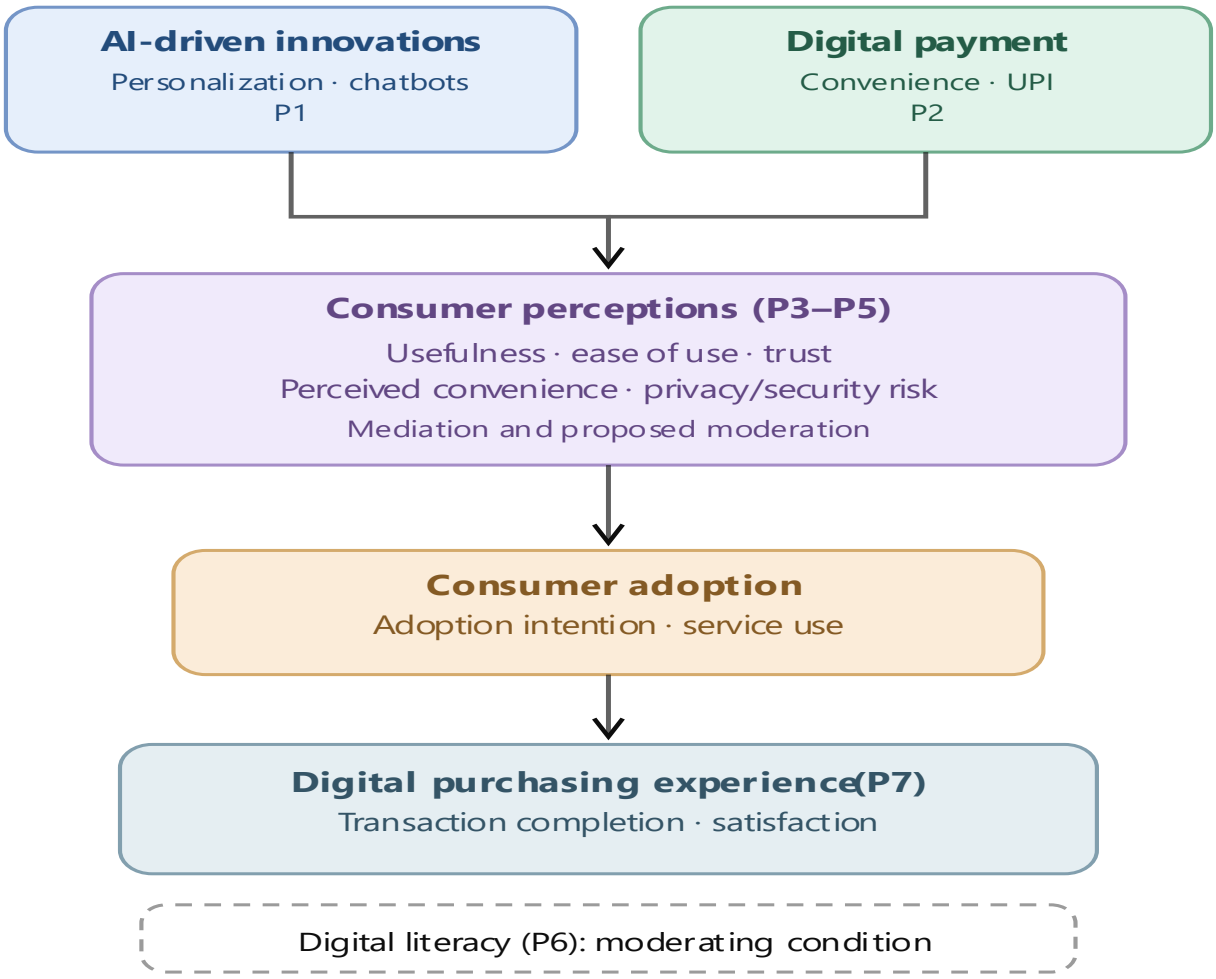
Conceptual Synthesis Procedure: The process of the analysis is based on conceptual work with four interconnected steps: concept identification, categorization, theorization, and proposition construction, which help to discover common constructs about AI-enabled personalization, ease of use of the payment system, perceived usefulness, consumer trust, privacy concerns, digital literacy, and purchase intention, and cluster their meanings into conceptual categories. The selected concepts are then interpreted from the additional views of the Technology Acceptance Model, Unified Theory of Acceptance and Use of Technology, and Trust-Risk/Privacy Calculus approach to draft the contextual relationship and develop the integrated conceptual framework. As Jaakkola (2020, p. 97) highlights, conceptual research should be clearly justified on the grounds of it theorizing contributions.

Study Boundaries and Methodological Limitations: The research is limited to conceptual analysis, secondary-source interpretations and empirical speculations based solely on published evidence, without any primary surveys or interviews, natural experiments, customer observation or any other primary data collection from a random sample. As such no primary sample size, regression analysis, structural equation modelling, statistical hypothesis testing or empirically proven causal mechanism is claimed or implied. The proposed framework and research propositions are merely only theoretical explanations, which need to be empirically validated. The possible publication bias, research context heterogeneity, technology adoption heterogeneity, nature of research and international results transferability heterogeneity are addressed.

Conceptual framework and research propositions
A conceptual model, which is empirically inferred through theoretical synthesis of AI-enabled commercial innovation, digital payment convenience, consumer perception, technology acceptance, and digital commerce outcomes in India's novel digital commerce context. Based on the Technology Acceptance Model (Davis 1989), the Unified Theory of Acceptance and Use of Technology (Venkatesh et al. 2003), and the Trust-Risk and Privacy Calculus perspectives (Pavlou 2003; Dinev and Hart 2006), the model treats AI-enabled personalization and digital payment convenience as potentially complementarities and independent technological precursors of consumer appraisal, use intentions, and purchasing experiences. AI-enabled chatbot applications, personalized recommendation engines, conversational shopping aids, and automated product information systems (e.g., AI-enabled product matching/try-on and product evaluation systems) are conceptualized as potentially complementing the consumers' information processing ability and perceived usefulness, while interoperable digital payment solutions, including the Unified Payments Interface, are treated as potentially complementing consumers' transactional convenience and perceived efficiency in digital commerce transactions. As technological artefacts, it is assumed that AI-enabled consumer shopping applications may increase consumers' information processing power and perceived usefulness, while digital payment convenience solutions may increase consumers' perceived ease of completing digital commerce transactions. Perceived usefulness, perceived ease of use, consumer trust, and perceived convenience are hypothesized to be mediators through which technological innovation may shape behavioural intentions, while perceived privacy and security risks

© SEP 2026 | IRE Journals | Volume 10 Issue 3 | ISSN: 2456-8880
DOI: https://doi.org/10.64388/ire1724652

are hypothesized to be moderates. Further, the model differentiates individual acceptance (AI and digital payment, respectively) from the overall shopping experience, such that willingness to use AI-enabled shopping applications and willingness to use digital payments may be related, but are conceptually different. Conceptually, the synergistic use of AI-enabled shopping applications and digital payment solutions is assumed to deliver synergistic shopping and business outcomes, but this is a hypothesis that needs to be tested in India's socioeconomic and digital diversity.



Above Figure 1 showing Conceptual framework and research propositions

Conceptual variables and proposed relationships

Construct	Conceptual function
AI-driven personalization	Technological antecedent
Digital payment convenience	Technological antecedent and perceived benefit
Perceived usefulness	Mediating technological evaluation
Perceived ease of use	Mediating technological evaluation
Consumer trust	Proposed moderator of perception–adoption relationships
Privacy and security risks	Negative antecedents of adoption intention
Digital literacy	Proposed moderating variable
Consumer adoption intention	Principal behavioural outcome

Digital purchasing experience	Downstream consumer outcome
Consumer satisfaction and commercial outcomes	Potential consequences requiring empirical validation

Table 2 Showing Conceptual variables and proposed relationships

Formulation and theoretical justification of research propositions

P1. Artificial intelligence-driven personalization and perceived usefulness

Important technological feature of contemporary digital business are personalized product offerings, personalized promotional contents, automated shopping assistance and interaction with the consumer that are made available based on current knowledge about consumer preferences and purchasing requirement - i.e. personalized product recommendations. Perceived usefulness (PU) in Technology Acceptance Model indicates the degree of a user believes that using a specific system would enhance his/her task performance (Davis, 1989). Therefore, the perceived usefulness may be created if AI-based personalization can make consumers' information-search, product comparisons and recommendations more relevant and personalized, ultimately supporting more effective decision-making process. Chakraborty et al. (2024) showed the significance of perceptions about technology and consumer-trust as determinants of consumers' attitude toward online commercial interaction when they explored the effects of generative AI chatbots in online grocery shopping setting, which will be examined as one of the antecedents of perceived usefulness. Notwithstanding, the perceived personalization quality of recommendations for consumers may not always be positive as inaccurate, intrusive, over-automated, or non-congruent recommendations may lead to perceived loss of benefits and consumer resistance. Zhu et al. (2017) adapted the 'Privacy Calculus' construct to a personalization-based service context of electronic commerce where the opposing forces of benefits and privacy concerns played a role in consumers' information-disclosure decision. These observations could imply that personalization may increase the perceived usefulness where consumers derive informational gains from personalization, have control over their purchase decision, and have a perceived enhancement of privacy expectations. Such relationships may be different based on various types of digital marketplaces, categories of retail services, differing consumer groups, and levels of e-transactional familiarity among consumers in the Indian commerce context suggesting perceived personalization quality and perceived usefulness could be conceptualized as two related but distinct constructs.

P2. Digital payment convenience and consumer adoption intention

Digital payment convenience is a major aspect of today's e-commerce because consumers increasingly compare different payment technologies on the basis of transaction time, ease of use, accessibility, and simple procedures that result in fast purchasing decisions. The Indian Unified Payments Interface is a critical institutional factor as the interoperable payment technology enables a payment system for multiple participating banks and apps. Building on the Unified Theory of Acceptance and Use of Technology, Venkatesh et al. (2003) established that performance expectancy, effort expectancy, and facilitating conditions are key to understanding technological adoption. Under the Indian context, Razi-ur-Rahim et al. (2024) tested the UPI adoption using an extended meta-UTAUT model, concluding that performance expectation, consumer attitude, and trust impacted use behaviour, implying that consumers' positive view of the transactional benefits of digital payments may foster their engagement in digitally enabled commercial practices. Beyond this narrow lens, from a consumer-behaviour angle, conceivability of a payment platform may ease the navigation process at checkout and enhance perceptions of transaction efficiency, thereby increasing motivation to use that platform in a first place. It should be cautioned that, it would be inappropriate to take payment convenience as a proxy for payment acceptance, even when such a propensity may be inferred from different perspectives (e.g., perceived financial security, infrastructure, previous experience, access to financial services, etc). For example, Jacob et al. (2024) found that performance expectancy, effort expectancy, and facilitating conditions positively influenced UPI adoption intentions among low-income Indian consumers, whereas perceived risk negatively influenced adoption

intentions. Overall, these considerations suggest that convenience may be a part of technological conditions that drivers (or barriers to) digital commerce adoption. As such, the above framework proceeds to treat convenience as a technological construct that facilitatively shapes digital commerce adoption, albeit with varying degrees of impact across consumers.

P3. Consumer trust as a moderator of technological perceptions and adoption intention

Consumer trust is an important psychological factor in tech-based commerce as the comparison of information, knowledge, and expertise are required prior to trusting algorithmic recommendations or committing financial resources electronically. The Trust-Risk view has underlined the importance of uncertainty as key in electronic commerce given the scarcity of direct experience, information asymmetry, and vulnerability of transaction effects (Pavlou 2003). The theoretical contribution of trust and perceived risk in the model are empirically illustrated in Pavlou 2003 and suggest the relevant position of one's differential impact within tech-based commerce. In AI-enabled commerce, trust may relate to the visualized, credible product information, while in the digital payment context, it relates to transaction integrity and institutional mitigation of risks. The moderating effect of trust is particularly relevant when consumer perceptions of the usefulness of the technology are high, but people are unsure about their reliability or commercial impact. Previous studies by Ding and Najaf (2024) showed that trust functions as a mediating factor between the perceptions of AI chatbot features and the intention to adopt the technology in an electronic commerce environment and the important role played by trust in consumers' attitude toward the acceptance of UPI services (Razi-ur-Rahim et al., 2024). While the above literature lends support to the relevant moderating effects, there is not necessarily a demonstration of the exact moderating effect as suggested in this framework. Therefore, this conceptual study builds upon the existing explanations to suggest that the positive associations between perceived usefulness, ease of use, payment convenience, and the intention to adopt may be strengthened when consumer trust is high and may be impaired when trust is low.

P4. Perceived privacy and security risks and digital technology adoption

Perceived privacy and security risks are significant inhibitors of adoption for artificial intelligence-enabled commercial services, as consumers might perceive all forms of interaction mediated by technology as a risk of exposing their personal data, receiving less optimal recommendations, suffering financially, or being unaware about how data is being used. The Privacy Calculus argument argues that consumers assess potential gains from disclosing private data online by comparing these advantages to perceived risks and threats. Dinev and Hart (2006) established the relevance of privacy, trust, and perceived benefits in predicting online information disclosure, while Featherman and Pavlou (2003) confirmed the importance of risk dimensions in uptake of electronic services. These arguments are consistent with the view that technology can become useful and convenient but may still not be adopted if privacy and security considerations are perceived as too high. In the growing digital commerce setting in India, consumer perceived risks may contribute to AI-supported product discovery and completing electronic payment, although the types of risks are different between these two tasks. AI personalisation may draw attention to consumer perceived risks of data profiling, perceived risk of algorithmic bias, and perceived information asymmetry, whereas digital payment task might involve consumer perceived risks of perceived financial risks of online scams, performance failure, and mistake or accidental online payment. Kiran and Sailaja (2025) explored perceived risk in the context of adoption intention of UPI, giving empirical support for adoption intention of digital payment service related by a risk concept. However, you should use ethical considerations, perceived privacy risks and perceived financial security risks should be distinguished conceptually because they might lead to different perceived risks behaviour in different contexts. In the research model, these two subjective constructs are depicted as perceived risks negatively affecting adoption intention, but their effects may depend on consumer trust, technological experiences and perceived value.

P5. Mediating roles of perceived usefulness and perceived ease of use

Perceived usefulness and perceived ease of use are also theoretically important mediators for the effects of technological innovation, and can account for how the adoption and behavior intentions for digital commerce goods in the modern digital economy are affected. As per Davis (1989), perceived usefulness refers to the consumers' attitude with regard to how technology makes things work, while perceived ease of use relates to how much effort needs to be exerted on using the system. These factors are explained by a theoretical framework for why more complex and sophisticated technological software applications do not necessarily have consumers playing adoptive role, unless they consider themselves in a goal to get benefits and using the system demands a minimum level of effort and ease of operation. Using a more smart recommendation, voice assistance, and automatic comparisons in an AI-enabled purchase setting can potentially increase perception of usefulness by saving consumers' effort in gathering information. These mediating mechanisms suggest that it is not solely the novelty of the technology that impacts adoption intention, but rather the functional features of the innovation (e.g., usefulness) and how simple to use it appears (ease of use). Nandru and Senthilkumar (2024) sought to understand the mediators impacting adoption intention to use mobile payments among Indian women street vendors and found that perceived usefulness and perceived ease of use were the only significant mediating variables that impacted adoption intention, as well as digital literacy and trustworthiness of the payment process. Their findings support technology acceptance mechanisms within an Indian commercial setting but do not support the complete mediation model proposed within this paper. Therefore, the framework in this paper separately analyzes technological aspects as opposed to subjective consumer assessments and hypothesizes that AI innovation and improvement of digital payment systems may positively impact adoption intention as mediated by perceptions of usefulness and ease of use (user perceptions). These mediating effects may differ based on previous experience and familiarity with the technology and the types of commercial interaction.

P6. Moderating influence of digital literacy on technology adoption

Digital literacy may be an important contextual or enabling factor that has a bearing on the ability of consumers to adopt new technological applications in today's ecommerce industry, as it covers the experiential skills related to use of digital platforms, online information search, electronic transactions, cybersecurity concerns, and responsible use of digitally enabled services. As explained by Venkatesh et al. (2003), enabling conditions may be an important antecedent of technology use, which implies that the adoption will depend on the resources and the enabling conditions at one’s disposal. Digitally enabled advancements, however, is functionally different from enabling conditions with respect to the fact that it refers to the individual skills, so it may have a differential effect on the ability to benefit from AI-assisted purchasing and electronic payment methods. The moderating effect of digital literacy is especially relevant as consumers with similar perceptions of technological usefulness may still vary in their ability to convert those perceptions into adoption and ongoing use. Nandru and Senthilkumar (2024) found customer digital literacy in mobile payment adoption to be an important demographic factor. Srivastava et al. (2024) also identified financial literacy and technology acceptance factors as determinants of mobile payment Fin Tech adoption. While these studies imply that consumers' ability to participate in digital financial services is relevant, they do not directly identify the moderating effect assumed. As such, the framework assumes a moderating effect such that perceptions of technological innovation may be more strongly associated with positive intent to adopt mobile payments when consumers have high digital literacy, and thus are better able to interpret AI-generated content, navigate interfaces to digital payments, and confidently participate in monetized technology environments.

P7. Complementary influence of AI-assisted shopping and digital payments on consumer purchasing experience

The integrated use of artificial intelligence-enabled shopping services and easy-to-use digital payment technologies emerges as a new form of commercial innovation owing to the fact that purchasing processes for consumers increasingly consist of interlinked activities of product discovery, evaluation of information, decision-making, transaction, and post-

transaction engagement. While AI-enhanced recommendation engines, automated comparison tools and chatbots may enable information-related decision-making, digital payment apps may enable transaction-related activities by providing accessible and interoperable digital payment infrastructure (Razi-ur-Rahim et al., 2024). Studies on AI-enabled shopping have highlighted the significance of automated recommendation engines to consumers' consideration and decision-making process, while insights from studies on adoption of UPI on the other hand have shown the importance of technological expectations, facilitating conditions, and trust towards electronic payments (Razi-ur-Rahim et al., 2024). The potential conceptual significance of technology convergence is that, coordinated digital services could help enhance a consumer's overall purchase experience by lowering information-search investment, enabling easier product selection, simplifying payment completion, and providing more seamless experience at different commercial touchpoints. However, the benefits of AI-enabled shopping assistance do not necessarily translate into superior consumer satisfaction and purchase completion experience, as consumers may experience suboptimal recommendations, poor payment integration, safety concerns, or unsatisfactory automation experiences. With respect to technology acceptance, Ding and Najaf (2024) emphasize the importance of trust in AI chatbot acceptance, while Jacob et al. (2024) demonstrate the effect of perceived risk and facilitating conditions in digital payment acceptance. Combining these two alternative perspectives, this study hypothesizes that the combination of task-supported useful AI-enabled shopping help, and task-supported seamless digital payment is likely to result in more positive purchase experiences, than two stand-alone technological applications if the two forms of assistance are reliable, easy to access, integrated and in line with consumer's expectations.

CONCLUSION

Current Conceptual Paper concludes that the convergence of Artificial Intelligence, Digital Payment Tools and Consumer Behaviour–a paradigm shift in the Contemporary Indian Commerce Ecosystem–possible avenues for innovation, operational efficiency, personalization in customer interactions, improved financial inclusion and sustainable industry growth; Proposed integrated conceptual framework underscores the joint role of "AI-driven Personalization", "Payment Convenience"and "Indian Digital Payment System" on consumer adoption and purchase intention with the Consumer Purchase Experience. Joint theoretical framework hints that emerging technologies can improve commercial competitiveness- for retailers, MSMEs and Financial Service Providers; empowering, better customer engagement and inclusive participation in digital marketplaces–but also providing responsible and trustworthy innovation-facilitating ways to mitigate concerns of cyber-security, algorithm, privacy, digital divide, inequality and financial literacy; illuminating important managerial implications–customer centric tech integration, trustworthy digital services and organizational readiness as well as policy implications–digital infrastructure, consumer protection, financial inclusion and digital skills; suggesting research avenues–consumer satisfaction, purchase behavior and business performance; contributing to academia through integrated conceptual perspective supporting responsible and inclusive development of India's digital commerce industry.

REFERENCES

[1] Behera, P. C., Chinara, M., & Behera, A. R. (2025). Determinants of e-commerce adoption by MSMEs: An empirical analysis in Odisha. *SEDME (Small Enterprises Development, Management & Extension Journal), 52*(1), 13–25. https://doi.org/10.1177/09708464241296640

[2] Chakraborty, D., Kar, A. K., Patre, S., & Gupta, S. (2024). Enhancing trust in online grocery shopping through generative AI chatbots. *Journal of Business Research, 180*, Article 114737. https://doi.org/10.1016/j.jbusres.2024.114737

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

[4] Dinev, T., & Hart, P. (2006). An extended privacy calculus model for e-commerce

transactions. *Information Systems Research, 17*(1), 61–80. https://doi.org/10.1287/isre.1060.0080

[5] Ding, Y., & Najaf, M. (2024). Interactivity, humanness, and trust: A psychological approach to AI chatbot adoption in e-commerce. *BMC Psychology, 12*, Article 595. https://doi.org/10.1186/s40359-024-02083-z

[6] Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. *International Journal of Human-Computer Studies, 59*(4), 451–474. https://doi.org/10.1016/S1071-5819(03)00111-3

[7] Fink, L., Newman, L., & Haran, U. (2024). Let me decide: Increasing user autonomy increases recommendation acceptance. *Computers in Human Behavior, 156*, Article 108244. https://doi.org/10.1016/j.chb.2024.108244

[8] Gouveia, J., & Santos, S. (2025). Rethinking the customer journey: Impact of AI for consumers and businesses—A systematic literature review and research agenda. *International Journal of Consumer Studies, 49*(6), Article e70136. https://doi.org/10.1111/ijcs.70136

[9] Huang, M.-H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science, 49*, 30–50. https://doi.org/10.1007/s11747-020-00749-9

[10] Jaakkola, E. (2020). Designing conceptual articles: Four approaches. *AMS Review, 10*, 18–26. https://doi.org/10.1007/s13162-020-00161-0

[11] Jacob, R. C., Jacob, M. E., & Johnson, J. (2024). Understanding factors affecting UPI adoption among low-income consumers in India. *Indian Journal of Finance, 18*(7), 44–59. https://doi.org/10.17010/ijf/2024/v18i7/174032

[12] Kamoonpuri, S. Z., & Sengar, A. (2025). Predicting consumer intentions for shopping using generative AI chatbots. *Journal of Decision Systems, 34*(1), Article 2521614. https://doi.org/10.1080/12460125.2025.2521614

[13] Mele, C., Hollebeek, L. D., Di Bernardo, I., & Russo Spena, T. (2025). Unravelling the customer journey: A conceptual framework and research agenda. *Technological Forecasting and Social Change, 211*, Article 123916. https://doi.org/10.1016/j.techfore.2024.123916

[14] Ministry of Commerce and Industry, Government of India. (2025, December 16). *ONDC enables fair, transparent and inclusive e-commerce by creating an open, non-discriminatory digital marketplace.* Press Information Bureau. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2204664

[15] Ministry of Finance, Government of India. (2026, April 30). *UPI completes 10 glorious years, emerges as world's largest real-time payments platform, anchoring India's digital economy.* Press Information Bureau. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2257087

[16] Nandru, P., & Senthilkumar, S. A. (2024). Exploring the factors affecting mobile payment adoption intention among women street vendors in India. *SDMIMD Journal of Management, 15*(1), 41–52. https://doi.org/10.18311/sdmimd/2024/32806

[17] National Payments Corporation of India. (n.d.-a). *UPI—Frequently asked questions.* https://www.npci.org.in/what-we-do/upi/faqs

[18] National Payments Corporation of India. (n.d.-b). *Unified Payments Interface (UPI): Product statistics.* https://www.npci.org.in/product/upi/product-statistics

[19] Nusir, O. M., Che Wel, C. A., & Ab Hamid, S. N. (2026). When AI conversations become advertising data: Algorithmic trust, privacy calculus, and purchase intention in GenAI-personalized social commerce. *Journal of Theoretical and Applied Electronic Commerce Research, 21*(7), Article 197. https://doi.org/10.3390/jtaer21070197

[20] Padma Kiran, K., & Vedala, N. S. (2025a). Assessing Unified Payments Interface (UPI) adoption and usage through the interplay of UTAUT factors. *Humanities and Social Sciences Communications, 12*, Article 1060. https://doi.org/10.1057/s41599-025-05313-w

[21] Padma Kiran, K., & Vedala, N. S. (2025b). Exploring behavioral intentions of consumers

towards different digital payment services through the interplay of perceived risks and adoption factors. *Humanities and Social Sciences Communications, 12*, Article 1141. https://doi.org/10.1057/s41599-025-05468-6

[22] 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. https://doi.org/10.1080/10864415.2003.11044275

[23] Raj, A., Shukla, D., Quadir, A., & Sharma, P. (2024). What drives the adoption of digital technology in the micro, small, and medium enterprises sector in a developing economy? *Journal of Business & Industrial Marketing, 39*(9), 1984–2002. https://doi.org/10.1108/JBIM-09-2023-0512

[24] Rasool, S. G., & Wani, T. A. (2026). Impact of digital payment methods on consumer trust and spending behaviour: Evidence from India. *International Journal of Electronic Business, 21*(2), 135–153. https://doi.org/10.1504/IJEB.2026.151460

[25] Razi-ur-Rahim, M., Rabbani, M. R., Uddin, F., & Shaikh, Z. H. (2024). Adoption of UPI among Indian users: Using extended meta-UTAUT model. *Digital Business, 4*(2), Article 100093. https://doi.org/10.1016/j.digbus.2024.100093

[26] Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

[27] Srivastava, S., Mohta, A., & Shunmugasundaram, V. (2024). What drives mobile payment FinTech adoption in India? *Global Business Review*. Advance online publication. https://doi.org/10.1177/09721509241238556

[28] United Nations Conference on Trade and Development. (2024). *Digital economy report 2024: Shaping an environmentally sustainable and inclusive digital future.* United Nations. https://unctad.org/publication/digital-economy-report-2024

[29] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478. https://doi.org/10.2307/30036540

[30] Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research, 122*, 889–901. https://doi.org/10.1016/j.jbusres.2019.09.022

[31] Wang, Y., Zhu, J., Liu, R., & Jiang, Y. (2024). Enhancing recommendation acceptance: Resolving the personalization–privacy paradox in recommender systems: A privacy calculus perspective. *International Journal of Information Management, 76*, Article 102755. https://doi.org/10.1016/j.ijinfomgt.2024.102755

[32] Yin, C.-C. (2025). Integrating or tailoring? Optimizing touchpoints for enhanced omnichannel customer experience. *Journal of Research in Interactive Marketing, 19*(6), 1001–1017. https://doi.org/10.1108/JRIM-11-2023-0418

[33] Zhang, X., Chen, A. L., Piao, X., Yu, M., Zhang, Y., & Zhang, L. (2024). Is AI chatbot recommendation convincing customer? An analytical response based on the elaboration likelihood model. *Acta Psychologica, 250*, Article 104501. https://doi.org/10.1016/j.actpsy.2024.104501

[34] Zhu, H., Ou, C. X. J., van den Heuvel, W. J. A. M., & Liu, H. (2017). Privacy calculus and its utility for personalization services in e-commerce: An analysis of consumer decision-making. *Information & Management, 54*(4), 427–437. https://doi.org/10.1016/j.im.2016.10.001