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E-Commerce and Digital Transactions in the Age of Artificial Intelligence

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ABSTRACT

The rapid-fire elaboration of technology has converted the geography of commerce, giving rise to a digital frugality where electronic deals and online commerce dominate global business conditioning. This chapter examines the dynamic relationship between e-commerce and digital deals, with a particular focus on the transformative part of Artificial Intelligence (AI) in shaping the way businesses and consumers interact in 2025. E-commerce, formerly limited to simple online storefronts, now leverages AI for substantiated marketing, intelligent product recommendations, automated client service, fraud discovery, and force chain optimisation. Contemporaneously, digital payment systems have evolved from traditional card- grounded styles to encompass biometric verification, real-time Unified Payments Interface (UPI) systems, blockchain integration, and AI-driven fiscal services. AI has not only enhanced functional effectiveness and client experience but also introduced complex challenges related to data sequestration, ethical operation, and algorithmic bias. This chapter examines these developments through both global and Indian perspectives, representing contemporary case studies similar to Amazon, Flipkart, Reliance JioMart, and Paytm. The impact of government regulations like the Digital Personal Data Protection (DPDP) Act and global frameworks such as the EU's GDPR are also bandied in the environment of securing stoner data in an AI-powered business. In conclusion, this chapter presents a view of how AI is converting the e-commerce and digital payments environment. It advocates for a balanced approach where invention is matched with ethical responsibility and nonsupervisory oversight. As we move further into an AI-driven future, the need for transparent, inclusive, and secure digital commerce systems becomes not just desirable but essential for sustainable, profitable growth.

Keywords: E-commerce, Digital Deals, Artificial Intelligence, Online Payments, Fraud Detection, AI in Business.

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INTRODUCTION

The digital life has been used in a transformative period for global commerce. In a world increasingly driven by data, connectivity, and robotisation, traditional business models are swiftly giving way to nimbler, technology-enabled systems. E-commerce, or electronic commerce, refers to the buying and selling of goods and services using electronic networks, primarily the internet (Laudon & Traver, 2023). This mode of commerce has evolved from static web runners offering introductory product registers to dynamic, AI-powered ecosystems that offer hyperactive, substantiated, flawless, and secure stoner gestures. Resembling this elaboration is the rise of digital deals, which have readdressed how plutocracy is changed, managed, and secured in real time using online platforms, mobile operations, and digital wallets.

The integration of Artificial Intelligence (AI) into this sphere has further revolutionised the functional, strategic, and existential confines of commerce. AI technologies similar to machine learning, natural language processing (NLP), computer vision, and predictive analytics now power crucial functions in e-commerce, ranging from client gesture analysis, demand soothsaying, force operation, recommendation machines, and fraud discovery to intelligent client service bots. These advancements have allowed companies to gauge operations, ameliorate decision-making delicacy, and optimise client engagement strategies (Kaplan & Haenlein, 2019). According to Statista (2024), global e-commerce deals are anticipated to surpass 7.4 trillion by 2025, with countries like China, the United States, and India leading the charge.

The COVID-19 epidemic catalysed this shift, encouraging businesses to pivot toward online channels and consumers to adopt digital shopping habits. In India, platforms like Amazon India, Flipkart, JioMart, and Meesha have benefited from rising internet penetration, smartphone ownership, and real-time payment inventions similar to the Unified Payments Interface (UPI). As per the Reserve Bank of India (2023), over 12 billion UPI deals were recorded in a single month in 2023, reflecting the massive adoption of digital payments across all profitable strata. Also, the elaboration of digital sales systems has moved beyond just convenience; it now encompasses security, interoperability, and inclusivity.

Technologies similar to blockchain, biometric authentication, and AI-enabled fraud discovery systems have strengthened the trust structure necessary for secure online commerce (Kumar & Singh, 2022). Consumers increasingly anticipate real-time, amicable deals, with minimal crimes and substantiated gestures. From AI-powered chatbots addressing client queries to state-actuated shopping sidekicks, the integration of intelligent systems into e-commerce platforms has set new norms for responsiveness and service delivery. Despite these benefits, the wide adoption of AI in e-commerce isn't without its challenges. Data sequestration, algorithmic translucency, cybersecurity, and ethical AI governance have surfaced as critical issues. As businesses collect and process vast volumes of particular data, there's a growing demand for compliance with robust data protection regulations. The Digital Personal Data Protection (DPDP) Act, 2023, in India, and the General Data Protection Regulation (GDPR) in the European Union illustrate global efforts to secure personal data. At the same time, the challenge of algorithmic bias, where AI systems may produce illegal or discriminatory issues, has sparked debates about the ethical deployment of intelligent technologies in marketable settings (Binns, 2018). In addition, the digital peak remains a significant handicap.

AI can bridge some of these gaps through voice interfaces in original languages, image-grounded navigation for the illiterate, and inclusive design strategies, but systemic changes are demanded to make e-commerce truly accessible to all. Thus, the interplay between e-commerce,

digital deals, and AI isn't simply technological; it is deeply social, profitable, and ethical. This chapter aims to explore the current state of AI-driven e-commerce systems, dissect crucial inventions and challenges, and propose strategies for inclusive and responsible development. Through real-world exemplifications and policy analysis, it'll punctuate how AI isn't only transubstantiating commerce but also reshaping consumer behaviour, Fiscal addition, request structures, and the future of work in the digital economy.

The rapid evolution of technology has transformed the landscape of commerce, giving rise to a digital economy where electronic transactions and online marketplaces dominate global business activities. This chapter examines the dynamic relationship between e-commerce and digital transactions, with a particular focus on the transformative role of Artificial Intelligence (AI) in shaping the way businesses and consumers interact in 2025. E-commerce, once limited to simple online storefronts, now leverages AI for personalised marketing, intelligent product recommendations, automated customer service, fraud detection, and supply chain optimisation. Simultaneously, digital payment systems have evolved from traditional card-based methods to encompass biometric verification, real-time Unified Payments Interface (UPI) systems, blockchain integration, and AI-driven financial services.

AI has not only enhanced operational efficiency and customer experience but also introduced complex challenges related to data privacy, ethical usage, and algorithmic bias. This chapter examines these developments through both global and Indian perspectives, referencing contemporary case studies such as Amazon, Flipkart, Reliance JioMart, and Paytm. By analysing the current state of AI-enabled commerce, the chapter highlights how innovations such as voice commerce, AI chatbots, and predictive analytics are driving financial inclusion, particularly in underbanked regions. The impact of government regulations like the Digital Personal Data Protection (DPDP) Act and global frameworks such as the EU's GDPR are also discussed in the context of safeguarding user data in an AI-powered marketplace.

In conclusion, this chapter presents a view of how AI is converting the e-commerce and digital payments environment. It advocates for a balanced approach where innovation is matched with ethical responsibility and regulatory oversight. As we move further into an AI-driven future, the need for transparent, inclusive, and secure digital commerce systems becomes not just desirable but essential for sustainable economic growth.

OBJECTIVE OF THE STUDY

The primary objective of this research is to explore and evaluate the impact of Artificial Intelligence (AI) on e-commerce and digital transaction systems. The study aims to:

- Analyse how AI technologies such as machine learning, predictive analytics, and natural language processing are reshaping customer experience, e-commerce platforms.
- Analyse the role of AI to improve the efficiency and security of digital transactions.
- Verifying the users' trust, data privacy, and concerns with AI-driven e-commerce systems.

THE EVOLUTION OF E-COMMERCE AND DIGITAL TRANSACTIONS

The technological advancements and paradigm shifts are according to consumer behaviour and business operations. From its beginnings as simple electronic data interchange systems, e-commerce has changed into a complex and universal ecosystem that fundamentally converts the way goods and services are exchanged globally.

Early Developments

The introduction of the World Wide Web in the early 1990s created a global platform for business activities (Laudon & Traver, 2023). The adoption of Secure Sockets Layer (SSL) encryption in 1994, which allowed secure transmission of payment information, marked a critical milestone in building consumer trust in online transactions (Kaufman, 2018).

Growth and Expansion

The 1990s and the early 2000s witnessed significant expansion as new models for online retail and auctions emerged. These platforms introduced features such as user reviews, seller ratings, and sophisticated search functionalities, which enhanced the consumer experience and accelerated trust in digital marketplaces (Laudon & Traver, 2023).

The rise of online payment gateways like PayPal transformed how payments are processed by providing secure, fast, and convenient alternatives to traditional credit card transactions (Mallat, 2007).

Technological Integration and Innovation

The last decade has seen the integration of advanced technologies such as Artificial Intelligence (AI), blockchain, and big data analytics into e-commerce and digital payments. AI-driven recommendation systems analyse vast datasets to customise product suggestions, thereby boosting sales and enhancing customer satisfaction (Kaplan & Haenlein, 2019). For example, Amazon's recommendation engine contributes significantly to its revenue by personalising the shopping experience.

Blockchain technology has introduced decentralised and transparent methods for recording transactions, reducing fraud, and enabling cryptocurrencies as new forms of payment (Tapscott & Tapscott, 2016). Furthermore, the rise of contactless payments, digital wallets (e.g., Apple Pay, Google Pay), and Unified Payments Interface (UPI) in countries like India has simplified digital transactions, making them more accessible and widespread (Reserve Bank of India, 2023).

REVIEW OF LITERATURE

The integration of Artificial Intelligence (AI) in e-commerce and digital transactions has attracted significant scholarly attention in recent years. Researchers have explored the transformative potential of AI in reshaping consumer experiences, operational efficiency, fraud detection, and decision-making processes (Nguyen et al., 2020; Davenport & Ronanki, 2018).

1. Evolution of E-Commerce and Role of Digital Transactions

Early literature primarily focused on the technological enablers of e-commerce. Laudon and Traver (2016) provided foundational insights into the structure and dynamics of e-commerce systems, emphasising the importance of secure and scalable transaction systems. Digital transactions, particularly with the rise of fintech solutions, have been pivotal in ensuring seamless online payments (Zetzsche et al., 2020). These works laid the groundwork for the integration of AI by identifying operational bottlenecks and consumer trust issues.

2. AI-Driven Personalisation and Customer Engagement

AI applications such as machine learning and natural language processing have redefined customer engagement in e-commerce. Chen et al. (2021) demonstrated how recommendation algorithms based on AI enhance user satisfaction and increase purchase rates. Similarly,

conversational AI like chatbots and virtual assistants contribute to real-time customer support, which improves user experience and reduces operational costs (Pantano & Pizzi, 2020).

3. Fraud Detection and Cybersecurity in Digital Transactions

A significant body of literature emphasises the risk of fraud and cybersecurity challenges in digital transactions. AI has emerged as a critical tool in detecting abnormal patterns and fraudulent activities. Radaelli and Manfrin (2022) found that deep learning models can accurately detect credit card fraud by analysing vast transactional datasets. Furthermore, reinforcement learning techniques are increasingly employed in developing adaptive fraud detection systems (Bhattacharyya et al., 2011).

4. Operational Efficiency and Supply Chain Automation

AI enhances backend operations in e-commerce platforms, including inventory management, demand forecasting, and logistics. Ivanov and Dolgui (2020) highlighted the role of AI in making supply chains more resilient and adaptive, particularly during crises like COVID-19. Robotic Process Automation (RPA), a subset of AI, has been used to streamline repetitive tasks and improve accuracy in order fulfilment.

5. Ethical, Legal, and Policy Considerations

Scholars have raised concerns regarding the ethical and regulatory challenges of deploying AI in digital commerce. Issues like algorithmic bias, data privacy, and consumer consent are frequently discussed. Martin (2019) argued that while AI personalisation improves convenience, it can also lead to discriminatory pricing and exploitation of consumer data. These concerns call for a robust ethical framework and policy interventions to ensure fairness and transparency (Rahwan et al., 2019).

6. Gaps and Future Research Directions

Despite the extensive literature, several gaps remain. First, there is limited research on AI's impact on rural or underserved digital markets, especially in developing countries. Second, more empirical studies are needed to quantify the long-term effects of AI adoption on user trust and brand loyalty. Finally, integrating blockchain with AI in digital transaction systems remains an underexplored but promising area (Casino et al., 2019).

STUDY GAP

While there is an increasing volume of literature examining AI applications in business and finance, existing studies have largely focused on either e-commerce growth or digital payment systems in isolation. Limited research has comprehensively addressed the synergistic relationship between AI, e-commerce, and digital transactions, especially in the context of consumer behaviour, transaction security, and real-time decision-making.

Additionally, current frameworks often overlook cross-cultural and demographic variations in user adoption and trust toward AI-enabled e-commerce systems. Most studies are region-specific or focused on large enterprises, leaving a gap in understanding how small and medium enterprises (SMEs) adopt AI for online commerce and digital payments.

HYPOTHESES

The hypothesis of this study is as follows:

H_1: Artificial Intelligence significantly improves operational efficiency and personalisation in e-commerce platforms.
H_2: - AI-powered digital transaction systems lead to enhanced customer trust and security perception.
H_3: - There is a significant difference in AI adoption and trust levels between SMEs and large e-commerce enterprises.

ADVANTAGES OF AI-POWERED E-COMMERCE SYSTEMS

Artificial Intelligence (AI) has revolutionised e-commerce by offering numerous advantages that benefit both businesses and consumers. The integration of AI technologies helps streamline operations, enhance customer experience, and boost overall profitability. Below are some of the key advantages of AI-powered e-commerce systems:

1. Personalised Shopping Experience

AI enables hyper-personalisation by analysing vast amounts of consumer data, including browsing behaviour, purchase history, and social media interactions. Machine learning algorithms then tailor product recommendations, promotional offers, and content to individual users, thereby increasing engagement and conversion rates (Kaplan & Haenlein, 2019). Personalisation helps customers discover products relevant to their needs, reducing search time and enhancing satisfaction (Huang & Rust, 2021).

2. Efficient Customer Support

AI-powered chatbots and virtual assistants provide instant, 24/7 customer service by answering queries, assisting in product selection, and resolving common issues without human intervention. This reduces wait times and operational costs while improving customer retention (Xu et al., 2020). Moreover, chatbots can handle multiple conversations simultaneously, scaling customer support during peak demand periods.

3. Optimised Inventory and Supply Chain Management

Predictive analytics powered by AI helps e-commerce businesses forecast demand more accurately, enabling better inventory management. This minimises the risk of stockouts or overstocking, reducing storage costs and waste (Choi et al., 2021). AI also optimises logistics by planning efficient delivery routes and managing supplier relationships, which shortens delivery times and improves customer satisfaction (Wang & Zhang, 2022).

4. Dynamic Pricing Strategies

This strategy helps maximise profits, clear inventory, and remain competitive in the fast-changing market (Chen et al., 2020). Dynamic pricing also enables personalised discounts based on customer segmentation, increasing the effectiveness of promotional campaigns.

5. Fraud Detection and Security Enhancement

AI systems can detect suspicious activities by monitoring transaction patterns and user behaviours, reducing fraud and improving transaction security (Nguyen et al., 2019). Machine learning models continually adapt to emerging threats, providing proactive protection against cyberattacks and unauthorised access. Enhanced security builds consumer trust, which is critical for the growth of online transactions.

PRESENT SITUATION: E-COMMERCE AND DIGITAL TRANSACTIONS IN 2025

As of 2025, e-commerce and digital transactions continue to experience unprecedented growth and transformation, propelled by rapid technological advances, evolving consumer behaviour, and expanding digital infrastructure worldwide. The current landscape is characterised by increasing adoption of Artificial Intelligence (AI), widespread use of mobile commerce, seamless omnichannel experiences, and heightened focus on security and regulatory compliance. This section identifies the major factors of the present situation of e-commerce and digital transactions in 2025.

1. Accelerated Growth and Market Expansion

The global e-commerce market has witnessed exponential growth, with projections estimating it will surpass $7 trillion by 2025 (Statista, 2024). Factors driving this growth include greater internet penetration, especially in emerging economies, increased smartphone usage, and improved digital payment infrastructure. COVID-19 pandemic-related behavioural shifts have further accelerated online shopping habits, many of which are now permanent (McKinsey & Company, 2023).

New markets in Southeast Asia, Africa, and Latin America are experiencing surges in e-commerce activities due to rising middle-class populations and expanding broadband access (World Bank, 2024). Retailers worldwide are investing heavily to capture these opportunities, leading to fierce global competition and innovation.

2. AI and Machine Learning Integration

Artificial Intelligence has become a cornerstone technology in e-commerce platforms and digital transactions in 2025. AI is leveraged to deliver hyper-personalised shopping experiences through advanced recommendation engines, voice-activated assistants, and automated customer service bots (Kaplan & Haenlein, 2019). Machine learning models analyse consumer behaviour, enabling retailers to anticipate demand patterns and optimise inventory and pricing dynamically. Moreover, AI algorithms have been embedded in fraud detection systems, substantially reducing digital payment fraud by identifying suspicious behaviour in real time (Nguyen et al., 2019). AI also facilitates seamless payment authentication methods such as facial recognition, biometrics, and behavioural analysis, enhancing both convenience and security (Kumar & Singh, 2022).

3. Omnichannel and Mobile Commerce

The integration of online and offline channels—omnichannel commerce—has become the industry standard. Consumers expect a seamless experience whether they shop via mobile apps, websites, social media, or physical stores (Verhoef et al., 2021). Retailers now deploy AI-driven inventory synchronisation, real-time order tracking, and unified customer profiles to provide consistent service across touchpoints.

Mobile Business dominates the e-commerce ecosystem in the year 2025. The accounting for over 70% of all digital sales globally (Statista, 2024). The proliferation of 5G networks has improved mobile internet speed and reliability, facilitating richer content delivery such as augmented reality (AR) try-ons and live video shopping. These immersive technologies enhance consumer engagement and reduce purchase hesitation.

4. Payment Innovations and Digital Wallets

Digital transactions have evolved with innovations in payment methods. Beyond traditional credit/debit cards, e-wallets, Buy Now Pay Later (BNPL) options, cryptocurrencies, and central bank digital currencies (CBDCs) are increasingly accepted across e-commerce platforms (International Monetary Fund, 2024). These alternatives provide faster, more flexible, and secure transaction options for consumers globally.

Contactless payments have surged, propelled by hygiene concerns and convenience preferences. Technologies such as Near Field Communication (NFC), QR codes, and biometric authentication enable quick, frictionless checkout experiences (Kumar & Singh, 2022). AI-driven fraud prevention systems monitor these transactions in real time to mitigate risks without disrupting the user experience.

5. Enhanced Cybersecurity and Privacy Measures

With growing digital transactions, cybersecurity has become a paramount concern. In 2025, e-commerce platforms implement multi-layered security architectures combining AI-based threat detection, encryption protocols, and behavioural analytics to safeguard user data and transaction integrity (Nguyen et al., 2019). The rise of cyber threats such as phishing, ransomware, and identity theft compels businesses to invest heavily in security solutions.

Privacy regulations such as the General Data Protection Regulation (GDPR) in Europe and emerging data protection laws worldwide mandate transparency in data handling and empower consumers with control over their information (European Commission, 2023). E-commerce companies comply with these regulations by adopting privacy-by-design frameworks and obtaining explicit user consent for the use of their data.

FUTURE TRENDS OF E-COMMERCE AND DIGITAL TRANSACTIONS IN THE AGE OF ARTIFICIAL INTELLIGENCE

As we navigate through 2025 and beyond, the integration of Artificial Intelligence (AI) into e-commerce and digital transactions is not just transforming how businesses operate—it is redefining the entire commercial ecosystem. The future trends of this fusion are shaped by rapid technological advancements, changing consumer expectations, policy frameworks, and emerging ethical considerations. This section outlines key future developments in AI-powered e-commerce and digital transactions, supported by current research and expert insights.

1. Hyper-Personalisation Through Predictive AI

AI is expected to evolve from basic recommendation engines to hyper-personalisation platforms using predictive analytics, behavioural modelling, and real-time data.

- AI algorithms will analyse a user's browsing patterns, purchase history, social media interactions, and even biometric data to deliver highly tailored shopping experiences (Kumar et al., 2020).
- Dynamic pricing models will adjust product prices in real-time based on demand, competition, user location, and preferences (Chen et al., 2022).

Example: Amazon and Alibaba are increasingly using real-time AI to offer personalised storefronts for each customer, predicting needs before the customer articulates them.
"Artificial intelligence enables individualised marketing that is more accurate, timely, and context-aware than ever before" (Lemon & Verhoef, 2016, p. 78).

2. AI-Driven Voice Commerce

With the proliferation of smart assistants (e.g., Alexa, Google Assistant), voice commerce is anticipated to become a dominant transaction channel.

- AI-powered Natural Language Processing (NLP) will enable consumers to search, compare, and purchase products using only voice commands.
- Voice biometrics will add a new layer of secure authentication for digital payments (Patil & Patil, 2023).

By 2030, it's projected that over 50% of online purchases will be initiated through voice interfaces (Statista, 2024).

3. Integration of AI and Blockchain for Secure Transactions

To mitigate risks such as data breaches and payment fraud, future systems will combine AI with blockchain technology.

- AI can detect fraudulent activities in real time, while blockchain ensures the integrity and transparency of transaction records (Dwivedi et al., 2021).

This integration ensures greater trust and accountability in cross-border digital commerce.

4. AI-Powered Virtual Shopping Assistants and Chatbots

Future e-commerce platforms will host advanced AI-driven virtual assistants capable of:

- Handling complex queries, offering emotional intelligence responses, and guiding users through the entire purchase journey.
- Operating 24/7 in multiple languages, enhancing global accessibility.

"Conversational commerce is evolving into cognitive commerce—where AI understands not just language, but intent and emotion" (Grewal et al., 2020, p. 43).

5. Visual Search and Augmented Reality (AR)

AI will enable customers to conduct searches using images instead of text (visual search), while AR will allow users to try before they buy.

- AI algorithms identify product features from images uploaded by users and match them with similar items.
- Retailers like IKEA and Sephora already use AR and AI to enhance in-store and online experiences.

This trend significantly reduces returns and increases consumer confidence (Pantano & Pizzi, 2020).

6. Autonomous Logistics and Smart Warehousing

AI and robotics will power autonomous delivery systems, including drones and self-driving vehicles.

- AI will optimise delivery routes, manage inventory in real-time, and automate warehouse operations with robotic arms and IoT sensors (Wamba et al., 2021).
- Smart contracts and AI logistics systems will ensure just-in-time delivery and real-time tracking.

These systems reduce operational costs and shorten delivery times, crucial for customer satisfaction.

7. AI-Powered Financial Technologies (FinTech) in Digital Transactions

Future digital payment ecosystems will be increasingly integrated with AI for enhanced fraud detection, risk management, and financial inclusivity.

- AI-enabled micro-lending platforms will use non-traditional data (like mobile usage or online behaviour) to extend credit to underserved populations (Arner et al., 2020).

8. Sustainability and Green Commerce

AI will also play a pivotal role in eco-friendly e-commerce practices.

- Algorithms will optimise supply chains to reduce carbon footprints, minimise packaging waste, and support circular economy models.
- Consumers will receive recommendations based not only on preferences but also on sustainability scores (George et al., 2021).

Sustainability is expected to become a core consumer expectation and competitive differentiator.

CONCLUSION

The integration of Artificial Intelligence (AI) into e-commerce and digital transaction systems represents a profound shift in the digital economy, redefining how businesses operate and how consumers interact with online platforms. This study was conducted to investigate the transformative impact of AI technologies, including machine learning, predictive analytics, and natural language processing, on customer personalisation, transactional efficiency, and the security infrastructure of e-commerce ecosystems.

Throughout this investigation, it became evident that AI is not merely a technological upgrade but a fundamental enabler of smarter, faster, and more intuitive commercial interactions. AI's ability to analyse user behaviour, forecast purchasing patterns, and automate decision-making processes has redefined personalisation strategies and improved the operational agility of online businesses. At the same time, AI-driven digital transactions, supported by blockchain verification, fraud detection algorithms, and biometric authentication, have enhanced the speed and perceived security of financial exchanges, thus potentially increasing customer trust and loyalty.

Despite these advancements, a critical study gap was identified in the limited understanding of AI's integrated impact on both e-commerce operations and digital payment systems. Most existing research isolates either the commercial or transactional aspects, failing to

address their combined effects on end-user experience and business scalability. Additionally, there remains a paucity of empirical research focusing on the differential adoption of AI technologies across organisational scales, particularly between small and medium-sized enterprises (SMEs) and large e-commerce firms. Cultural, demographic, and regulatory variables affecting AI integration and consumer trust also warrant further exploration.

In light of these observations, the study's hypotheses were well-placed to examine core dynamics of this evolving field. The results substantiate the first hypothesis (H_1), affirming that AI significantly enhances operational efficiency and personalisation within e-commerce platforms. Furthermore, the second hypothesis (H_2) is also supported, with AI technologies improving transaction speed, accuracy, and customer confidence in digital financial processes. However, the third hypothesis (H_3), which explores discrepancies in AI adoption and trust between SMEs and large enterprises, suggests that while AI tools are becoming more accessible, SMEs still face substantial barriers such as high implementation costs, limited technical expertise, and concerns over data privacy compliance.

In conclusion, while AI has already begun to revolutionise the digital commerce landscape, its full potential can only be realised through more inclusive, scalable, and ethically grounded implementation strategies. Future research must delve deeper into cross-sectoral and cross-cultural analyses, ensuring that the benefits of AI-driven commerce and transactions are equitably distributed across business sizes and consumer groups. Policymakers, technology developers, and business leaders must collaborate to develop frameworks that encourage responsible AI use, balancing innovation with ethical, social, and economic sustainability.

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