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UNLOCKING SUSTAINABLE E-COMMERCE SUCCESS IN THAILAND: A HOLISTIC MODEL OF DIGITAL CULTURE, INNOVATION, AND TECHNOLOGY ADOPTION

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Abstract

This research investigates the critical factors driving sustainable e-commerce success in Thailand, emphasizing the synergistic role of digital organizational culture, innovation performance, digital integrated marketing communication (DIMC), and technology adoption. A mixed-methods approach was employed, combining quantitative analysis of survey data from 420 individuals with experience in purchasing from Thai e-commerce startups, and qualitative data from interviews with 15 key informants. Results indicate that digital organizational culture exerts the most significant influence, accounting for 44% of the variance in e-commerce success. Innovation performance and DIMC also exert significant direct and indirect effects, with technology acceptance playing a crucial mediating role. The validated structural equation model demonstrates a strong fit with the empirical data, indicating that these factors collectively explain a substantial portion of the variance in e-commerce success in Thailand. This research offers practical implications for e-commerce businesses, policymakers, and educators in Thailand. By prioritizing the development of a robust digital organizational culture, fostering innovation, implementing effective digital marketing strategies, and promoting technology adoption, organizations can enhance their competitiveness and achieve sustainable growth. The findings also provide valuable insights for policymakers seeking to create an enabling environment for e-commerce development in Thailand and similar Asian economies.

Keywords: E-Commerce, Digital Transformation, Organizational Culture, Innovation, Technology Adoption

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Introduction

The transition into the digital era since the year 2000 has led to significant economic transformations worldwide, particularly in the context of the Digital Economy, often referred to as the Disruptive World. This shift has been driven by rapid technological advancements and online communication, compelling businesses and economic behaviors to adapt swiftly. In particular, the adoption of e-commerce systems has become crucial in driving growth and effectively reaching target customers (Jinnupong, 2023).

Thailand is one of the key players in the digital economy, implementing the “Thailand 4.0 strategy”, which focuses on developing digital infrastructure and promoting various innovations to fully integrate into the digital age (Jinnupong, 2023). Meanwhile, the emergence of new innovations, such as digital currencies and online transactions, has become an essential driver of the country’s economy. Despite the high growth potential of the e-commerce industry, businesses still face multiple challenges, particularly in product management, customer service, and marketing strategies that align with consumer demands. The success of e-commerce businesses does not solely depend on having quality products or effective marketing but also requires the efficient utilization of technology and innovation, as well as strong innovation performance and leadership that can drive internal organizational innovation effectively (Yamakanith et al., 2024). Therefore, this article aimed to explore the key factors influencing the success of e-commerce businesses in Thailand, with a focus on technology-driven consumer behavior shifts and online communication strategies across various platforms which are factors that are critical for competition in the digital economy.

Literature Review

Digital Organizational Culture

Digital Organizational Culture is a culture that emphasizes adaptability and the adoption of new technologies. Organizations with a digital culture are able to adapt to market demands and efficiently introduce creativity and new innovations (Jinnupong, 2023; Lopyaem & Saraphat, 2021). The concept of digital organizational culture is influenced by traditional organizational culture theories, such as Schein’s theory (2010), which describes organizational culture as a pattern of shared basic assumptions developed over time. This theory also emphasizes the role of leadership in creating and sustaining organizational culture. Besides, the concept by Cameron & Quinn (2011) categorizes organizational culture into four types; clan culture, market culture, hierarchical culture, and innovative culture. These can be adapted to describe digital organizational culture. Digital organizational culture is a critical factor in building a competitive advantage in the digital era. It requires a combination of digital mindset culture, unity culture, adaptive culture, and mission-driven culture to effectively respond to technological and social changes. Having a strong digital organizational culture supports the success of the e-commerce industry.

Innovation Performance

Innovation performance refers to the ability to generate new ideas and create value through creative problem-solving. It involves identifying opportunities, resolving issues, and implementing effective solutions. Innovation performance integrates various skills, including critical thinking, communication, and collaboration. This concept is rooted in Schumpeter's (1934) theory, which proposed that innovation development is central to economic growth, and in Teece et al.’s (1997) idea of “Dynamic Capabilities”, which refers to an organization’s ability to transform itself in response to rapidly changing business environments. Innovation performance is a crucial factor that enables organizations to remain competitive in the digital era. It requires comprehensive development in knowledge, skills, attitudes, and motivation, alongside the support of a culture that fosters continuous innovation.

Digital Integrated Marketing Communication

Digital Integrated Marketing Communication (DIMC) is the process of developing marketing communication plans that utilize multiple persuasive formats through digital technologies to consistently engage with target audiences. It focuses on shaping consumer behavior to align with market demands through brand contacts which helps build awareness, familiarity, and trust in the brand. DIMC strategies do not only enhance the image of products and organizations but also serve as vital tools to support marketing efforts, boost sales, and contribute to overall business growth and national economic development (Thongkhao, 2021). According to Arens & Weigold (2016), the components of Digital Integrated Marketing Communication consist of five main elements; digital advertising, personal selling via digital media, sales promotions through digital platforms, public relations via digital media, and direct marketing through digital channels.

Technology Acceptance

Technology Acceptance refers to the willingness of individuals or organizations to adopt and use new technologies. It involves evaluating the value, benefits, and potential risks associated with the technology, as well as considering its compatibility with existing systems and processes. Understanding the factors that influence technology acceptance is crucial for developing policies and strategies that enhance the adoption rate of technology in both business and society. The Technology Acceptance Model (TAM) was developed by Davis et al. (1989), based on the Theory of Reasoned Action (TRA) by Ajzen (1985). TAM focuses on the factors influencing an individual's acceptance and use of technology. The key variables include Perceived Usefulness which is the belief that the technology can enhance work performance and effectiveness, Perceived Ease of Use which is the belief that the technology is user-friendly and not complicated, Attitude Toward Using Technology which is the individual's positive or negative feelings about using the technology, Behavioral Intention to Use which is the individual's intention to use the technology. TAM serves as a fundamental approach to studying technology adoption. It identifies key factors such as perceived usefulness, perceived ease of use, perceived risk, and social influence, which can be used as a conceptual framework for research on technology acceptance across various fields.

Success of E-Commerce Businesses

The success of e-commerce businesses refers to the ability of a business to achieve its set goals while maintaining sustainability and competitiveness in the digital marketplace. This encompasses financial performance, operational efficiency, strategic advantages, and customer satisfaction (Turban et al., 2021). The key components of e-commerce business success can be categorized into four main areas including Profitability Measurement, Operational Efficiency, Competitive Advantage, and Customer Acceptance. Each of these factors plays a crucial role in building a sustainably growing e-commerce business. Integrating these factors into business strategies enables companies to thrive and remain competitive in the fast-changing online market.

Research Hypotheses

- 1) Digital organizational culture, digital marketing communication, innovation performance, and technology acceptance directly influence the success of the e-commerce industry in Thailand.
- 2) Digital organizational culture, innovation performance, and digital marketing communication directly influence technology acceptance.
- 3) Digital organizational culture, innovation performance, and digital marketing communication indirectly influence the success of the e-commerce industry through technology acceptance.

Research Conceptual Framework

The research on the Success Model of the E-Commerce Industry in Thailand involved an extensive review of concepts, theories, relevant literature, and previous studies. Based on this review, the researcher formulated the research conceptual framework, as illustrated in Figure 1.

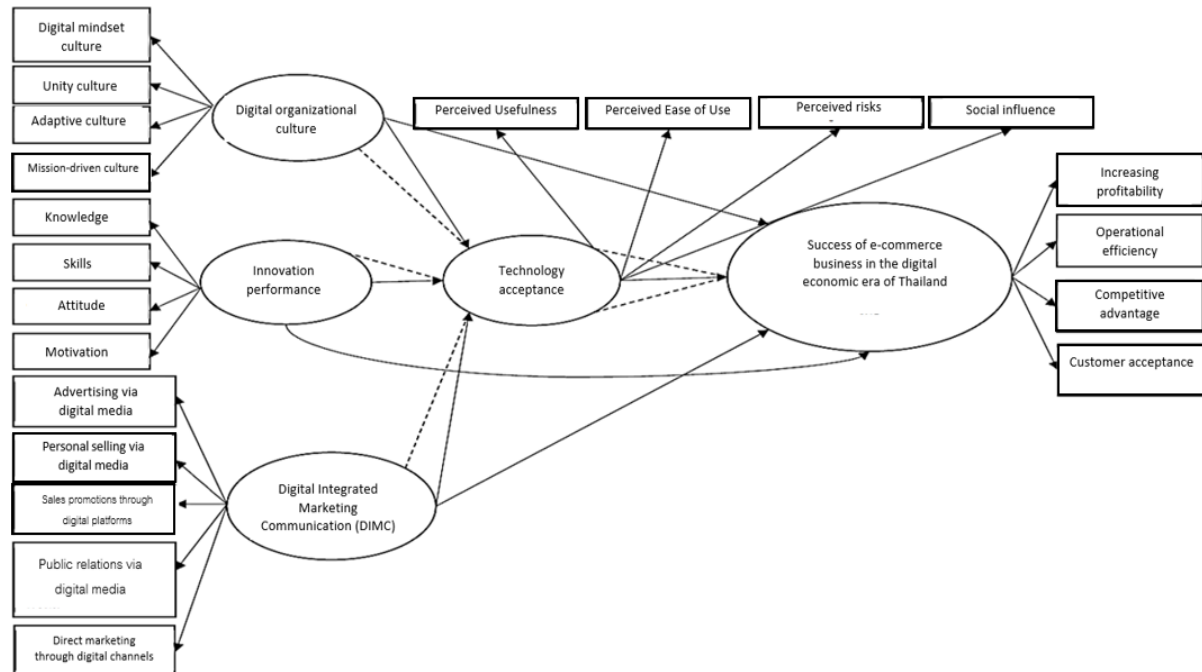


Figure 1 Research Conceptual Framework

Research Methodology

Population and Sample Group

The population in this research consists of entrepreneurs in Thailand's e-commerce industry who are officially registered with the Department of Business Development, totaling 83,425 companies (Department of Business Development, 2024). The researcher applied Structural Equation Modeling (SEM) for data analysis. According to Schumacker & Lomax (2016), the sample size should be no less than 20 times the number of observed variables. In this study, the conceptual model contains 21 observed variables. Therefore, a suitable and sufficient sample size should be at least 420 participants. The sampling methods used were Stratified Random Sampling and Simple Random Sampling.

For the qualitative research component, the researcher identified key informants consisting of representatives of the population who possess sufficient knowledge and expertise to provide in-depth and relevant information aligned with the research objectives (Patton, 2015). A purposive sampling method was used to select 15 key informants, divided into three groups. The first group consists of 5 entrepreneurs. The second group consists of 5 customers. The third group consists of 3 experts and government officials.

Research Instrument

The instrument used in this research was a questionnaire divided into three sections, utilizing a 5-point Likert scale (Likert, 1967). The questionnaire underwent quality testing for content validity by five experts, with item-content validity indices ranging from .60 to 1.00, discrimination power values between .34 and .88, and an overall reliability coefficient of 0.978. The data were collected online and were analyzed using the LISREL software. For qualitative research, a semi-structured interview format was used as the data collection tool.

Data Collection

The researcher collected questionnaire data following these steps. 420 questionnaires were distributed and collected in person from the sample group. Once all data were gathered, they were checked for completeness and accuracy before being analyzed. For the interview data collection, the process followed these steps; 1) scheduling interviews, 2) conducting the interviews, 3) checking the completeness of the data once data saturation was reached from the key informants, and 4) analyzing the data obtained from the interviews.

Data Analysis

After completing the collection of questionnaire data, the data were analyzed using statistical software. Descriptive statistics were employed to determine frequency, percentage, mean, and standard deviation. To examine the success model of the e-commerce industry in Thailand, Structural Equation Modeling (SEM) was applied. For the interview data, content analysis was used together with concepts and findings from relevant literature and previous researches to support the interpretation and provide a comprehensive overview. The observed variables were derived from a review of related research, literature, and interview findings.

Research Findings

Levels of Success in the E-Commerce Industry in Thailand, Digital Organizational Culture, Innovation Performance, Digital Integrated Marketing Communication, and Technology Acceptance

The study revealed that the success of the e-commerce industry in Thailand, as well as digital organizational culture, innovation performance, digital integrated marketing communication, and technology acceptance, are all rated at a high level of significance.

Table 1 Levels of Success in the E-Commerce Industry in Thailand, Digital Organizational Culture, Innovation Performance, Technology Acceptance, and Digital Integrated Marketing Communication

Factors	\bar{x}	S.D.	Level of significance
1) Success in the E-Commerce Industry	4.06	0.58	High
2) Digital Organizational Culture	3.92	0.62	High
3) Innovation Performance	3.93	0.52	High
4) Technology Acceptance	4.18	0.68	High
5) Digital Integrated Marketing Communication	4.18	0.58	High

Causal Factors Influencing the Success of the E-Commerce Industry in Thailand

The results of the model fit test between the structural equation model and the empirical data revealed the following values; Chi-square = 136.63, df = 115, p-value = 0.08243, GFI = 0.97, AGFI = 0.96, SRMR = 0.034, RMSEA = 0.020, CFI = 1.00, and CN = 488.46. Therefore, it can be concluded that the structural equation model is well-fitted and consistent with the empirical data. The success model of the e-commerce industry in Thailand is illustrated in Figure 2.

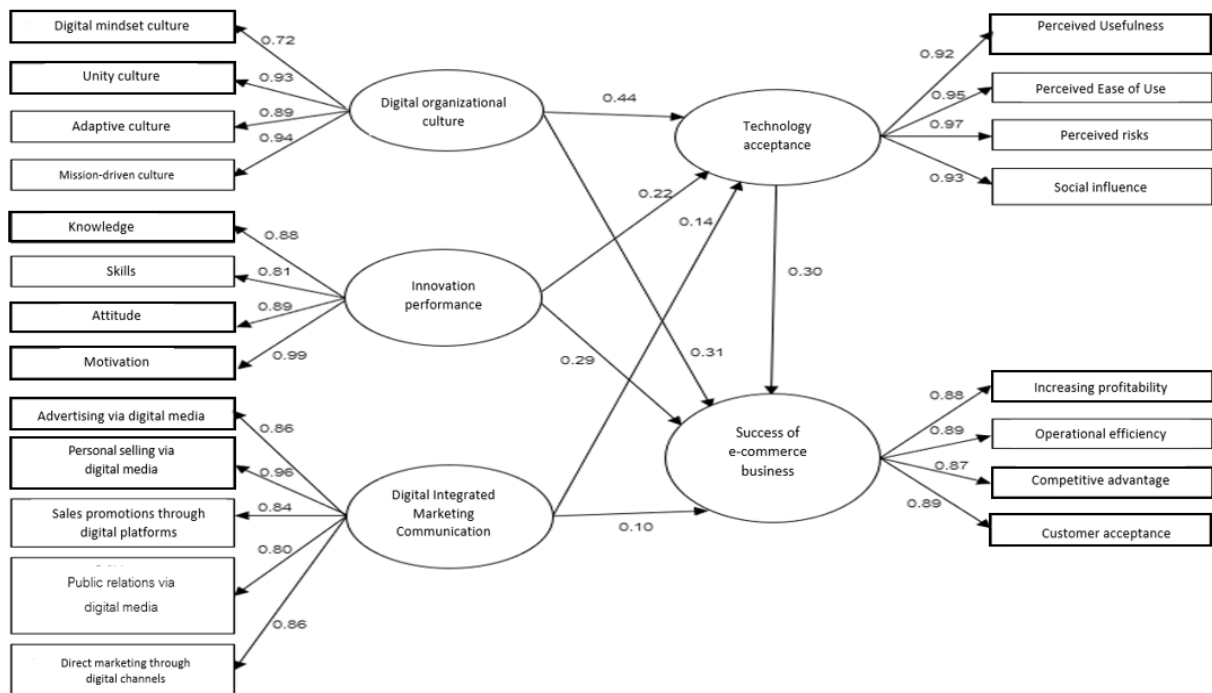


Figure 2 Path of influence from the structural model (t-value)

From Figure 2, the study found that the revised model can reasonably reflect causal relationships and is consistent with empirical data. All causal variables based on the theoretical framework collectively explain 78% of the variance in the success of the e-commerce industry in Thailand ($R^2 = 0.78$). The remaining variance is influenced by variables not included in the study. The success of e-commerce in Thailand is most influenced by the digital organizational culture factor, with a total influence of 0.44, comprising a direct influence of 0.31 and an indirect influence of 0.13. Following this are the technology acceptance, innovation performance, and digital integrated marketing communication, respectively. Moreover, the digital organizational culture, innovation performance, and digital integrated marketing communication also indirectly influence the success of the e-commerce industry in Thailand, as shown in Table 2.

Table 2 Total, Direct, and Indirect Relationships

Causal factor	Technology acceptance			Success of e-commerce in Thailand		
	Direct	Indirect	Total	Direct	Indirect	Total
Digital organizational culture	0.44*	-	0.44*	0.31*	0.13*	0.44*
Innovation performance	0.22*	-	0.22*	0.29*	0.07*	0.36*
Digital integrated marketing communication	0.14*	-	0.14*	0.10*	0.05*	0.15*
Technology acceptance	-	-	-	0.30*	-	0.30*

Note: * $p < .05$

From Table 2, the relationship pathways can be explained as follows. Digital Organizational Culture (DORC) has the highest total influence at 0.44, consisting of a direct effect of 0.31 and an indirect effect of 0.13, mediated through Technology Acceptance. The next most influential factor is Technology Acceptance (TEAD), with a causal coefficient of 0.30, indicating the highest direct influence on the success of e-commerce in Thailand. Innovation Performance (INPE) has a causal coefficient of 0.36, while Digital Integrated Marketing Communication

(IMC) has a causal coefficient of 0.15, with a direct effect of 0.29 and an indirect effect of 0.07 through Technology Acceptance. Technology Acceptance acts as a partial mediator (VAF between 0.20 and 0.80), demonstrating that it is a crucial factor in transmitting the effects of other variables on the success of e-commerce in Thailand.

The results from qualitative data analysis are consistent with the quantitative findings, confirming four key factors that influence the success of e-commerce in Thailand. (1) Digital Organizational Culture (including digital mindset, unity, adaptability, and mission) plays a major role both directly and indirectly. (2) Innovation Performance (knowledge, skills, attitude, and motivation) enhances long-term competitive potential. (3) Digital Integrated Marketing Communication (advertising, personal selling, sales promotion, public relations, and direct marketing) helps create advantages and build customer connections. (4) Technology Acceptance (perceived usefulness, perceived ease of use, perceived risk, and social influence) functions as a mediating variable linking the various factors to industry success. The integration and strong interrelationships among these factors are key to achieving success in the digital era.

Conclusion and Discussion

Digital organizational culture has the greatest influence on the success of e-commerce (total influence = 0.44; direct influence = 0.31, indirect influence through technology acceptance = 0.13). It enables organizations to quickly adapt to technological and market changes. These findings align with Schein's (2010) theory, which emphasizes that a culture responsive to the environment is a key factor for success. The results also correspond with studies by Srikunchai & Pinta (2021); Papamo et al. (2022); Ollier-Malaterre et al. (2019); and Chatterjee et al. (2021), which found that digital culture enhances employee potential, improves communication, and supports innovation. Furthermore, the findings are consistent with Pincharoen (2015), who highlighted the crucial role of technology acceptance in the growth of digital businesses, particularly in an era where e-commerce is at the core of the digital economy.

Innovative Capability: The findings are consistent with the study by Suwanasri (2019), which found that organizations with the ability to adapt and innovate are better equipped to meet the rapidly changing needs of Thai consumers. This supports the idea that innovative capability is a key driver of competitiveness in the e-commerce industry. The results also align with Saunila (2020), who identified several factors influencing the innovation capability of SMEs, including financial resources, employee skills and knowledge, organizational culture, and access to networks and collaborations.

Technology Acceptance: The study found that when employees and executives in the e-commerce industry accept and adopt technologies such as online payment systems or e-commerce platforms, it significantly enhances competitiveness and success. Technology acceptance enables organizations to adapt to the rapidly evolving market landscape. For example, using cloud systems for data management or leveraging AI to analyze customer behavior adds substantial value to the organization. This finding is consistent with Rogers's (2003) Diffusion of Innovations theory, which explains that the adoption of innovation within an organization depends on factors such as ease of use, alignment with user needs, and clear relative advantages. The success of modern entrepreneurs is largely a result of their willingness to embrace technology. Moreover, the results align with the research of Zhu et al. (2006), which revealed that adopting new technologies improves an organization's responsiveness to market demands and creates strategic advantages. Similarly, Venkatesh et al. (2003) found that technology acceptance boosts organizational efficiency and customer adoption.

Digital Integrated Marketing Communication: The study found that Digital Integrated Marketing Communication plays a crucial role in enhancing the competitiveness of Thai

businesses, as it boosts brand awareness and fosters customer loyalty. This finding aligns with Consumer Response Theory by Kotler & Keller (2021), which highlights how consumer reactions to marketing efforts impact purchasing decisions. Thailand's e-commerce industry is experiencing rapid growth. The use of IMDC, tailored to Thai consumer behavior such as high social media engagement and responsiveness to online promotions, has become essential in attracting customers and increasing sales. Thus, IMDC is identified as a key success factor in the Thai e-commerce sector. This conclusion is consistent with Schultz et al. (1993), who emphasized that the integration of digital communication tools such as social media, email marketing, and online advertising significantly contributes to e-commerce success. Similarly, Ngamsutti et al. (2019) found that IMDC positively influences brand loyalty, customer market acceptance, and competitive capability, all of which lead to business success. Moreover, Singh et al. (2020) confirmed that IMDC improves sales and customer satisfaction in India's e-commerce market. Chaffey & Ellis-Chadwick (2019) also noted that using digital strategies in IMDC contributes to delivering a satisfying customer experience and building long-term customer relationships. Furthermore, a study by Yamakanith et al. (2024) concluded that IMDC significantly influences business performance outcomes.

Research Limitations

While these findings offer valuable insights into the drivers of e-commerce success in Thailand, it's important to acknowledge certain limitations that should be considered when interpreting the results. First, the data collection timeframe was limited, which may not fully capture the dynamic evolution of Thailand's e-commerce landscape. As technology and consumer behavior continue to rapidly change, future research should consider longitudinal studies to assess the long-term impact of these factors. Second, the study's focus on entrepreneurs in Thailand's e-commerce industry may limit the generalizability of the findings to other contexts or countries, particularly those with different socio-economic conditions or levels of digital development. Future research could explore the applicability of this model in other developing economies or compare the drivers of e-commerce success across different regions. Addressing these limitations in future research will further refine our understanding of the complexities of e-commerce success and contribute to the development of more effective strategies for sustainable growth.

Recommendations from the Research

In light of these findings and acknowledging the limitations discussed, this research offers several actionable recommendations for stakeholders seeking to foster sustainable e-commerce success in Thailand. First, organizations and policymakers should prioritize the cultivation of a strong digital organizational culture. Given that this factor significantly influences e-commerce outcomes, efforts should be directed towards fostering a digital mindset, promoting unity and adaptability, and establishing clear, mission-driven goals within organizations. This could involve training programs, mentorship initiatives, and the creation of supportive policies that encourage digital innovation. Second, efforts should be made to enhance innovation capabilities within the e-commerce sector. This could involve providing access to resources, technology, and collaborative networks for small and medium-sized enterprises (SMEs), as well as encouraging experimentation with emerging technologies such as AR/VR and AI to enhance customer experiences. Finally, given the importance of technology acceptance as a mediating factor, organizations should focus on building user-friendly technologies and effectively communicating their advantages to potential users. In this context, it is also imperative to foster trust with consumers who are increasingly concerned about the legitimacy of new technologies. By focusing on these key areas, stakeholders can create a more conducive environment for sustainable e-commerce growth in Thailand, while acknowledging and addressing the limitations identified in this research.

Recommendations for Future Research

Building upon the findings of this study and acknowledging its limitations, future research should prioritize several key areas to advance our understanding of e-commerce success in Thailand and similar contexts. First, longitudinal studies are needed to capture the dynamic interplay between digital organizational culture, innovation, technology adoption, and e-commerce performance over time. Such research could employ mixed-methods designs, integrating qualitative insights with quantitative data to develop more nuanced and context-specific metrics. Second, future investigations should expand the scope of inquiry to encompass a wider range of factors that may influence e-commerce outcomes. These could include, but are not limited to, workforce skill development, adaptability to market changes, and the impact of government policies and regulations. Furthermore, researchers should explore the role of sustainable business practices, such as clean energy use and eco-friendly product development, in fostering long-term e-commerce success, particularly in light of growing consumer demand for socially and environmentally responsible businesses. Finally, comparative studies across different regions and countries could provide valuable insights into the generalizability of the findings and identify best practices for promoting e-commerce success in diverse cultural and economic contexts. By addressing these key areas, future research can build upon the foundation established by this study and contribute to a more comprehensive and nuanced understanding of the drivers of e-commerce success in Thailand and beyond.

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