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An Empirical Study on E-Commerce and Its Determinants in the Context of Nepalese Small and Medium Enterprises

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ABSTRACT

This study explores the factors driving e-commerce adoption among small and medium enterprises (SMEs) in Nepal. It highlights critical determinants influencing the adoption process, such as technological readiness, cost considerations, government support, and entrepreneurial competencies. The research aims to assess the status of these determinants, analyze their interrelationships, and evaluate their collective impact on e-commerce adoption. Employing a descriptive and causal research design, data were collected from 426 SMEs within the Kathmandu Valley region using structured questionnaires. Statistical analyses, including correlation and regression, were conducted with SPSS to explore the connections between the identified factors and the adoption of e-commerce. The survey was conducted in August 2024 through a convenience sampling method, and a casual research design was applied. The findings reveal that technological readiness, adoption cost, and entrepreneurial competencies significantly influence e-commerce adoption among SMEs, whereas government support has a minimal positive impact. These results highlight the need for improved technological infrastructure, cost-effective solutions, and targeted government policies to promote e-commerce adoption. This study enhances the understanding of e-commerce adoption in developing contexts and economies. It offers practical insights for policymakers, business owners, and researchers interested in the digital transformation of SMEs.

1. INTRODUCTION

The Internet has become inseparable from modern life, revolutionizing nearly every aspect of society. Its ease of use and widespread accessibility have fueled the rapid growth of e- commerce, reducing costs and enhancing efficiency. E-commerce

empowers businesses with global market access, enabling sellers to target specific customer segments and offering buyers diverse products at competitive prices (Napier et al., 2005). Since the 1960s, innovations in information and communication technology (ICT) have underscored the Internet's transformative potential, with e-commerce emerging as one of its most impactful applications (Chaffey et al., 2019).

Small and medium enterprises (SMEs) drive economic growth and foster development. In developed nations, the integration of the Internet has significantly advanced SMEs' performance (Pandey, 2004). However, in Nepal, SMEs face persistent challenges, including limited access to technology and credit, insufficient business opportunities, and inadequate infrastructure (Pandey, 2004). These obstacles highlight the pressing need to explore how e-commerce adoption can address these issues and contribute to SME growth. The COVID-19 pandemic further amplified the relevance of e-commerce, proving its resilience and underscoring its significance as a driver of future retail and commerce (OECD, 2023).

E-commerce has become indispensable for SMEs to survive and grow, particularly during crises like the pandemic. By transitioning traditional business models to the digital sphere, SMEs have been able to innovate and adapt, ensuring business continuity. Technical innovation, including e-commerce adoption, is pivotal to modern corporate management and economic growth (Nasuredin et al., 2016; Rajan, 2007). While extensive research exists on e-commerce adoption in large corporations, a significant gap exists in understanding the specific barriers SMEs encounter. These include limited resources, insufficient technological readiness, high implementation costs, and a lack of government support. This gap underscores the importance of studying the unique challenges faced by SMEs, particularly in developing economies like Nepal.

In Nepal, SMEs are defined based on revenue, assets, and staff size thresholds, as outlined in the Industrial Enterprises Act, 2076. Despite their importance to the economy, Nepalese SMEs struggle with several constraints, including a low capital base, restricted access to credit due to high interest rates and collateral requirements, and limited marketing knowledge (Pandey, 2004). Moreover, shifting consumer behavior due to the pandemic and ongoing global conflicts has accelerated the need for businesses to adopt digital solutions to remain competitive (Nugrogo et al., 2022). E-commerce adoption allows SMEs to transform traditional practices, improve efficiency, and achieve sustainable growth.

This study investigates the factors influencing e-commerce adoption among SMEs in Nepal. Specifically, it focuses on technological readiness, adoption costs, government support, and entrepreneurial competencies. The research seeks to offer insights into the ways these factors influence e-commerce adoption by assessing the current status of these determinants and analyzing their relationships. Additionally, the study explores the broader impact of e-commerce on SMEs in Nepal, highlighting its benefits, challenges, and implications for sustainable business growth.

1.1 LITERATURE REVIEW

E-commerce in Nepal began in the late 1990s with Thamel.com, the first virtual marketplace featuring shops around Thamel, Kathmandu. Nearly two decades later, social media platforms have become widely used for selling products and ideas. Given Nepal's landlocked status and remittance-based economy, it is crucial to understand how SMEs adapt to technology advancements and what factors influence their decision-making. There is a knowledge gap regarding SMEs' adoption of e-commerce, especially considering the unique features of Nepal's business landscape.

As of January 2024, Nepal's internet penetration rate reached 49.6% of the population, with 15.40 million internet users (Digital in Nepal, n.d.). This growth demonstrates potential benefits for businesses adopting e-commerce. SMEs have increasingly used e-commerce due to

technological advancements, changing customer behavior, and support from governments and financial institutions through grants and loans. The COVID-19 pandemic accelerated the trend, emphasizing the importance of maintaining an online presence (Dangol et al., 2020).

A study (Clarke & Wallsten, 2004) highlighted a positive correlation between internet usage growth in developing nations and increased export of services to developed countries. However, various business factors also influence e-commerce adoption beyond customer access. This study aims to investigate those factors and analyze their impact.

1.1.1 FOUNDATIONS OF THEORY IN E-COMMERCE ADOPTION

The existing body of research on e-commerce adoption has introduced various theoretical frameworks to explain the factors influencing this process. Among these, the Theory of Reasoned Action (TRA) posits that an individual's behavior is primarily driven by their intention, which, in turn, is shaped by their attitudes and the influence of subjective norms (Ajzen & Fishbein, 1975). However, subsequent studies have revealed that intention does not always translate into actual behavior, suggesting a more comprehensive approach is needed. Addressing this gap, the Theory of Planned Behavior (TPB) extends TRA by incorporating perceived behavioral control, emphasizing that an individual's belief in their ability to perform a behavior significantly influences both their intention and subsequent actions. This added dimension makes TPB particularly valuable for understanding the complexities of behavior prediction. Widely applied across disciplines such as health psychology, organizational studies, and technology adoption, TPB offers a robust framework for analyzing patterns in e-commerce adoption, enabling researchers to account for both internal and external factors affecting decision-making.

Rogers's (1995) Innovation Diffusion Theory outlines how innovations spread over time through innovation, communication channels, social systems, and adopter categories. While helpful in understanding adoption patterns, it has been critiqued for oversimplifying the process and not considering contextual factors.

The Technology Acceptance Model (TAM) explores why individuals adopt new technology, focusing on two main factors: perceived ease of use and perceived usefulness. People are more likely to use technology if they believe it is easy to operate and offers clear benefits, such as improved performance or efficiency. Perceived ease of use refers to how simple a system is to interact with, while perceived usefulness is about how much it enhances productivity or meets users' needs. These perceptions shape attitudes toward the technology, ultimately influencing the intention to adopt it. TAM has been widely applied across industries like e-commerce, healthcare, and education to guide the design of user-friendly and beneficial systems. By ensuring technologies are easy to use and provide clear advantages, TAM helps reduce barriers to adoption and promotes widespread acceptance. The model has been crucial in ensuring technological innovations meet user expectations, leading to higher engagement and long-term success.

This study adopts the Technological, Organizational, and Environmental (TOE) framework to construct the research model. Initially, the TOE paradigm has been extensively employed to examine the uptake of e-commerce. Furthermore, the TOE framework considers TOE factors to understand adoption comprehensively. Moreover, the TOE framework's dynamic perspective on human and organizational characteristics enhances its ability to provide clear explanations. The application of the TOE paradigm in the context of SMEs has grown to include the duties of the chief executive officer (CEO) (Thong, 1999), who typically fulfill the roles of both the main decision maker and the company's owner. The TOE model has demonstrated its worth in SME environments as long as it has successfully incorporated all parties involved (Robertson, 2010).

The TOE framework has been used to understand the adoption process by considering technological, organizational, and environmental factors. It has benefited SMEs, as it incorporates the role of critical decision-makers like CEOs (Thong, 1999). However, TOE has faced criticism for neglecting employee and manager characteristics (Ghobakhloo & Tang, 2013).

1.1.2 REVIEW OF EMPIRICAL EVIDENCE AND HYPOTHESIS

SMEs remain vital to the global economy, making up over 90% of global facilities (Rubin & Babbie, 2016). Governments have supported their modernization with funding, and due to their adaptability, SMEs often outperform giant corporations in terms of innovation. The Internet and technology give SMEs a competitive advantage, positioning e-commerce as a vital tool for global competition. However, some see it as an opportunity, while others find it challenging. E-commerce has allowed businesses to easily buy, sell quickly, and exchange products online, transforming transactions (Shemi, 2012) and enabling expansion into new markets without time or location limits. Over the past decade, researchers have found that SMEs' adoption of e-commerce is closely linked to e-business enablers (Stockdale & Standing, 2004) and have studied the challenges small enterprises face in developed and developing nations (MacGregor & Kartiwi, 2010).

As e-commerce has grown, network consumption has helped cut costs and boost efficiency. The Internet and advanced marketing systems have made it easier for consumers to access products and services worldwide (Villa & Monzón, 2021). The COVID-19 pandemic sped up the move to digital solutions, pushing businesses to adjust to online markets and build loyal customer bases (Nugrogo et al., 2022). Key factors driving e-commerce adoption in developing countries have been organizational, technological, and environmental. These factors shape how businesses and consumers interact as changes in market dynamics, regulations, technology, and policies unfold. Navigating these factors is essential for sustainable e-commerce growth. Hence, this study suggests the following hypothesis.

H1: There is a significant impact of technological readiness on e-commerce adoption.

Technology readiness, which involves a business's technology infrastructure and IT human resources, is critical for adopting e-commerce and other new technologies (Zhu & Kraemer, 2005). Organizations with more robust technological readiness, including up-to-date infrastructure and skilled personnel, are more likely to adopt IT solutions effectively (Oliveira & Martins, 2010; Mahmood et al., 2004). Additionally, financial readiness is crucial, as it ensures businesses can afford the necessary investments while leveraging their technology capabilities (Teo et al., 1998; Ramdani et al., 2013). Infrastructure and human resources are essential for smooth technology adoption, warranting further research into how these elements interact (Zhu et al., 2003). Ultimately, companies with higher technological readiness are better positioned to adopt IT solutions and gain a competitive advantage (Rahayu & Day, 2015).

H2: The cost of adoption has a significant impact on e-commerce adoption.

Developing an e-commerce platform requires significant investments in design, infrastructure, and customization, with costs varying based on complexity and ongoing maintenance needs (Choudhury & Harrigan, 2014; Rahayu & Day, 2015). Businesses that manage these expenses strategically are more likely to see long-term performance improvements (Hsu et al., 2012). Still, it's essential to account for initial and ongoing costs (Laudon & Traver, 2023). High infrastructure costs and support systems can hinder e-commerce success, particularly for SMEs already burdened by expenses like hardware, software, and employee training (Thorleuchter & Van den Poel, 2012; Wymer et al., 2015). Poor internet quality and high costs in developing countries further complicate adoption

(Hendricks & Mwapwele, 2024). Despite these challenges, e-commerce helps businesses grow by increasing revenue and reducing operational expenses (Walker et al., 2016). However, high costs remain a significant hurdle for smaller companies (Wymer et al., 2015).

H3: Government policy has a significant impact on the adoption of e-commerce.

Governments worldwide increasingly focus on helping small and medium-sized enterprises (SMEs) adopt e-commerce through various supportive policies and regulations. They offer initiatives like grants, capacity-building programs, and personalized advisory services to help SMEs overcome challenges and drive inclusive economic growth (Rahayu & Day, 2015; European Commission, 2021). This support is crucial in fostering innovation within organizations and ensuring industrial policies succeed. By addressing issues like budget constraints, lack of expertise, and uncertainty about the benefits of e-commerce, governments make it easier for SMEs to thrive (Merhi & Ahluwalia, 2017; Wu, et al., 2003; Gomez, 2015).

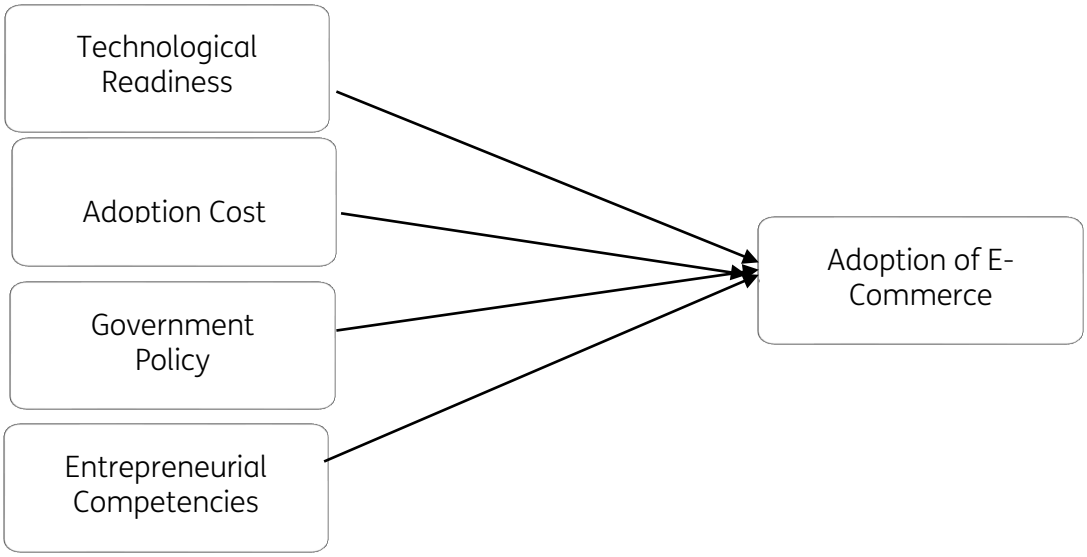
Financial incentives, subsidies, and training programs create a welcoming environment for SMEs to embrace e-commerce, boosting their competitiveness in the digital marketplace (Seyal et. al., 2004). Clear policies and government backing for innovation initiatives encourage stakeholder collaboration and resource sharing. However, striking a balance is essential, as excessive regulation can stifle entrepreneurship and disrupt market dynamics (World Bank, 2023; Martinsons, 2008). Effective government involvement is necessary for building the e-commerce infrastructure SMEs need to grow and succeed in today's digital landscape.

H4: Entrepreneurial competencies have a significant impact on the adoption of e-commerce.

Entrepreneurial competencies, such as recognizing opportunities, managing risks, building relationships, and demonstrating resilience, play a vital role in an entrepreneur's success (Rauch & Frese, 2007). Owners and managers are crucial in implementing e-commerce, as they make strategic decisions and evaluate its sustainability and potential risks. More innovative people are more inclined to embrace e-commerce, enhancing their competitive edge in a rapidly changing market (Ghobakhloo & Tang, 2013; Al-Qirim, 2004; Rahayu & Day, 2015). In today's digital age, effective marketing through online platforms has become essential, especially as traditional methods fall short in reaching target audiences (Kuckertz & Wagner, 2010). Resourceful entrepreneurs are skilled at identifying market opportunities and utilizing e-commerce to their advantage, helping them stay relevant and competitive (Hussain et al., 2021).

Building strong customer relationships is crucial in e-commerce, where personalized service fosters loyalty and sets businesses apart (Choudhury & Harrigan, 2014). Entrepreneurs also face significant risks from cyber-attacks and market fluctuations, making proactive risk management essential for safeguarding their ventures (Coviello & Munro, 1997). The COVID-19 pandemic underscored the importance of e-commerce for maintaining business continuity and reaching broader markets (Rodríguez-Puello et al., 2022). Ultimately, entrepreneurial competencies, encompassing skills, knowledge, and a commitment to continuous learning, significantly influence business performance and growth, with education and development playing key roles in nurturing successful entrepreneurs (Halim, 2015; Kiggundu, 2002).

Figure 1: *Conceptual Framework*



2. RESEARCH METHODOLOGY

Data for this survey was gathered using a structured, self-administered questionnaire designed to collect comprehensive information from the participants. The survey was carefully crafted to capture a range of factors influencing the decision to adopt e-commerce, including demographic details, business type, technological readiness, adoption costs, government support, and entrepreneurial competencies. Respondents were initially asked to provide information about their organization, such as its size, geographical location, and workforce composition. Further questions focused on the specific information and communication technologies (ICT) currently in use, the type of internet connection available, the presence of a business website, and the mobile devices employed for communication. By structuring the survey in this way, the study aimed to gain a deeper understanding of the various elements that shape the adoption process of e-commerce among different businesses.

2.1 MEASURES

The questionnaire measured various variables based on previous literature, utilizing a standardized 5-point Likert scale. The survey was organized into five sections: four dependent and one independent variable. It included categories from Al-Qirim (2004) that addressed technological, organizational, environmental, and individual variables. Specifically, the questionnaire featured five items to assess technological readiness and adoption costs (Grandon & Pearson, 2004), five items to evaluate government policy (Abualrob & Kang, 2016), and five items to measure entrepreneurial competencies (Ibidunni et al., 2021). Each dependent variable was also measured with four items. The study ensured that the samples collected met the minimum size requirements for effective data processing.

2.2 DATA COLLECTION AND SAMPLE

Due to the large number of e-commerce businesses in Nepal, this study specifically focused on those within the Valley region. The Krejcie and Morgan (1970) table was used to determine an appropriate sample size, initially suggesting a sample of 580 respondents. However, after considering factors such as employee count, 426 responses were finalized for analysis. The purposive sampling technique was employed to target a specific population subset and gain deeper insights into the relationship between the independent variables (technological readiness and entrepreneurial competencies) and the dependent variable, e-commerce adoption.

The data collection process involved both online and offline methods. The questionnaires were distributed through Google Forms for online participation, while printed versions were made available at key locations, including shopping malls and major business hubs throughout the city. The survey utilized a 5-point Likert scale to capture responses regarding various factors that influence e-commerce adoption.

The data collection period lasted three weeks, during which all responses were carefully analyzed using SPSS software. Cronbach's alpha was calculated to assess the reliability of the data, ensuring that the measures used in the survey were consistent. Microsoft Excel was also employed for data entry, management, and preliminary analysis. The study utilized descriptive statistics to provide an overview of the sample, followed by spearman's correlation and ordinal regression analyses to explore the relationships between the key factors identified and the adoption of e-commerce among SMEs in Nepal. This comprehensive approach enabled a thorough examination of the various influences on e-commerce adoption in this region.

3. RESULTS

Table 1 depicts the demographic analysis of 426 entrepreneurs, revealing interesting trends in age, gender, qualifications, and sectoral representation. A significant portion of the sample (56.3%) falls within the age group of 25 to 35, while smaller proportions are observed in the younger age group under 25 (9.9%), the 35 to 45 range (21.8%), and those over 45 (12%). Regarding gender distribution, males represent 56.6% of the sample, while females account for 43.4%. When examining educational qualifications, the majority of entrepreneurs hold undergraduate degrees (43%), followed by those with +2 equivalent or lower qualifications (32.4%), and graduate degrees (24.6%).

Table 1: *Demographic Variables*

Description	Category	Frequency	Percentage
Age	Below 25	42	9.9
	25-35	240	56.3
	35-45	93	21.8
	Above 45	51	12
	Total	426	100
Gender	Male	241	56.6
	Female	185	43.4
	Total	426	100
Qualification	+2 equivalent or below	138	32.4
	Undergrad	183	43
	Graduate and above	105	24.6
	Total	426	100
Industry or Sector	Manufacturing	114	26.8
	Trading	147	34.5
	Service	117	27.5
	Other	48	11.3
	Total	426	100
Experience using E-commerce	Below 1 year	87	20.4
	1 to 3 year	236	57.7
	More than 3 year	93	21.8
	Total	426	100
	Facebook	111	26.06
	Instagram	123	28.87

Platform used	Tiktok	78	18.31
	Email	32	7.51
	Website	82	19.25
Total		426	100

Sector-wise, trading emerges as the dominant industry, comprising 34.5% of the sample, followed by services (27.5%), manufacturing (26.8%), and other mixed industries (11.3%). Regarding e-commerce experience, the majority of respondents (57.7%) have 1-3 years of involvement, while 20.4% have less than one year, and 21.8% have more than three years of experience. Instagram is the leading digital platform for e-commerce activities, with 28.87% of entrepreneurs utilizing it most frequently, followed by Facebook (26.06%), TikTok (18.31%), websites (19.25%), and email (7.51%).

Table 2: *Correlation of the study variables*

Variables	1	2	3	4	5
1) Technological Readiness	1				
3) Government support	0.434**	0.504**	1		
4) Entrepreneurial competencies	0.582**	0.518**	0.228**	1	
5) Adoption of E-commerce	0.580**	0.545**	0.249**	0.759**	1

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

Table 2 illustrates the relationships between technological readiness, adoption cost, government support, entrepreneurial competencies, and e-commerce adoption. A strong positive correlation has been found between technological readiness and adoption cost (0.719), indicating that businesses with higher technological readiness perceive lower costs for adopting e- commerce. Entrepreneurial competencies have also shown strong correlations with technological readiness (0.582) and adoption cost (0.518), underscoring the importance of entrepreneurial skills in adopting new technologies and managing costs. The strongest correlation has been between entrepreneurial competencies and e-commerce adoption (0.759), suggesting that businesses with better entrepreneurial skills are more likely to adopt e-commerce. Although technological readiness (0.580) and adoption cost (0.545) have positively influenced e-commerce adoption, government support has shown a weaker correlation (0.249), indicating its lesser role compared to internal factors.

Table 3: *Regression Coefficient*

	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.078	.657		4.686	.000
	TR	.096	.036	.125	2.664	.008
	AC	.113	.036	.145	3.115	.002
	GS	-.019	.036	-.018	-.520	.603
	EC	.515	.032	.615	16.211	.000

Table 3 shows that technological readiness, adoption cost, and entrepreneurial competencies have all significantly influenced the adoption of e-

commerce. Entrepreneurial competencies have emerged as the strongest predictor, with businesses that demonstrate higher entrepreneurial skills adopting e-commerce at a greater rate. Technological readiness and lower adoption costs have also positively contributed to e-commerce uptake, though to a lesser extent. However, government support has not significantly impacted, indicating that it has yet to play a meaningful role in influencing e-commerce adoption. The analysis has confirmed that internal business factors, particularly entrepreneurial competencies, have driven e-commerce adoption.

4. DISCUSSION

The majority of respondents fall within the age range of 25-35. However, there is also a notable presence of individuals aged 35-45 and over 35. The number of male respondents is slightly higher than the number of female respondents (Hsu et al., 2012). The educational backgrounds of individuals vary, with a significant percentage possessing bachelor's degrees or higher qualifications. The trading industry is the most common among respondents, followed by manufacturing and services. The majority of participants have been engaging in e-commerce in recent years. The channels most commonly employed for this purpose are Instagram and Facebook, with websites, TikTok, and emails being utilized to a lesser extent.

Technological readiness is a complicated idea that includes multiple factors influencing technology's effective adoption, use, and integration into society, organizations, and individuals' lives (Satar & Alarifi, 2022). The data highlights a diverse range of opinions on the impact of technological readiness on e-commerce adoption. While there is a consensus that conducting business online involves considerable risk, there is also a strong belief in the significant positive effect of a business website on customer service delivery. The varying levels of agreement, as indicated by the standard deviation values, underscore the differing perspectives among respondents regarding these aspects of technological readiness. Technological readiness has been identified as the most distinguishing element among those implementing e-commerce (Grandon & Pearson, 2004). This can be attributed to SMEs' restricted technological and financial resources to invest in implementing information technology. The primary obstacles to IT expansion in small organizations are the significant fiscal costs and the lack of technical expertise (Hsu et al., 2012). Similarly, the degree of adaptability for shifts in adoption cost varies depending on the characteristics of the business. It is observed that respondents generally agree to a moderate extent on the impact of adoption costs on e-commerce adoption. There is a noticeable variation in their opinions, indicating differing views on how cost factors influence the decision to adopt e-commerce. This highlights the diverse perspectives among respondents regarding the financial aspects of adopting e-commerce. The enduring advantages of embracing e-commerce, such as expanded market reach, enhanced operational efficiency, and improved competitiveness, can surpass the early expenses associated with adoption. In our study, adoption cost is also essential in explaining SMEs' willingness to adopt e-commerce. The uncertainty around investment returns has added complexity to the situation, causing SMEs to be wary about adopting technology (Wymer et al., 2015).

These findings indicate that businesses with enough technology readiness, reduced adoption costs, and solid entrepreneurial capacities are more inclined to adopt e-commerce processes. Entrepreneurs and CEOs who have received higher education are more inclined to embrace e-commerce (Thong, 1999). SMEs are more inclined to use technology if their CEOs have a high level of knowledge. Furthermore, the study claimed that enhanced CEO expertise decreases IT uncertainty, reducing the risks linked to technology (Ibidunni et al., 2021).

The regression analysis confirms that technological readiness, adoption cost, and entrepreneurial competencies significantly impact e-commerce adoption, as seen by their low p-values ($p < .05$). Changes in government policies have adversely affected the adoption of new technologies. This suggests that while fluctuating policies caused by government shifts affect business operations, they do not encourage the adoption of e-commerce (Stockdale & Standing, 2004). The respondents have mixed opinions on the impact of government support on e-commerce adoption. Notably, there is significant disagreement with the statements that the government actively promotes the benefits of e-commerce and that current e-commerce regulations adequately protect all stakeholders. Despite these disagreements, respondents generally accept that government support influences e-commerce adoption (Satar & Alarifi, 2022). Additionally, the moderate variability in responses indicates differing perspectives on the effectiveness and impact of government support in this context.

Moreover, tactics and endeavors, such as government assistance programs and collaborations with e-commerce service providers, are designed to decrease the expenses associated with adopting e-commerce and facilitate its acceptance, especially in developing economies (Tiessen et al., 2001). This study supports suggestions for government policy regulators to create relevant and adequate e-commerce legislation for SMEs in developing nations that are either non-existent or outdated (Meso et al., 2005). Hence, government funding influences emerging market e-commerce development and adoption needs further study. Furthermore, the government's role should be to invest in the technological infrastructure for robust internet connectivity in urban and rural areas (Hussain et al., 2022).

The correlation analysis (Table 2) and regression (Table 3) provide critical insights into the factors influencing e-commerce adoption among businesses. Strong positive correlations have been found between technological readiness, adoption cost, and entrepreneurial competencies, indicating that technologically prepared businesses and highly entrepreneurial skills are more likely to view adoption costs favorably and embrace e-commerce solutions. The regression analysis further emphasizes these findings by showing that these independent variables collectively explain a significant portion of the variance in e-commerce adoption. Entrepreneurial competencies emerge as the most influential factor, positively impacting adoption, while government support shows a negligible effect. Overall, the results highlight the importance of enhancing internal capabilities, particularly technological readiness and entrepreneurial competencies, to drive e-commerce adoption. This suggests that businesses should focus on their resources and skills rather than rely heavily on external support.

5. CONCLUSION

The study emphasizes that technological readiness, adoption cost, and entrepreneurial competencies significantly influence e-commerce adoption in SMEs. Among these, entrepreneurial competencies emerge as the most critical predictor of success, highlighting that entrepreneurs' skills, knowledge, and innovative abilities are pivotal in driving e-commerce initiatives. Although government support is found to have a relatively weak influence, it still plays a role in shaping the broader environment for e-commerce adoption. Despite facing various challenges, businesses have generally demonstrated confidence in managing e-commerce, suggesting that they adapt to the digital landscape with increasing ease. The findings underscore the importance of SMEs enhancing their e-commerce capabilities by improving technological infrastructure, developing entrepreneurial competencies, and leveraging cost-effective digital solutions. With the growing availability of affordable e-commerce tools and

platforms, SMEs have an opportunity to strengthen their competitiveness and streamline operations. For SMEs to fully benefit from e-commerce, there is also a need for more significant government and institutional support to address any remaining barriers to digital adoption.

6. IMPLICATION

Technological Readiness, Adoption Cost, Government Support, and Entrepreneurial Competencies are key factors influencing the adoption of e-commerce. This study posits a significant relationship between Technological Readiness, Adoption Cost, and Entrepreneurial Competencies in the adoption of e-commerce by SMEs in Nepal. The research contributes to the theoretical understanding by providing a quantitative framework to measure e-commerce adoption in Nepalese SMEs. Additionally, it helps identify the most influential factors in the adoption process and offers a clearer picture of the current state of e-commerce adoption in these businesses. This study enriches existing theories by expanding knowledge on the factors affecting e-commerce adoption. While considerable research has been conducted on e-commerce adoption, studies focusing on SMEs in Nepal's Valley region remain limited, highlighting the value of this research. Though this study primarily fulfills academic requirements, it offers valuable practical insights for firms, customers, and the economy. It highlights how e-commerce can foster business growth, reduce costs, and enhance customer satisfaction. By adopting e-commerce, businesses can tap into global markets and leverage data analytics for strategic decision-making. Using the TOE (Technology, Organization, and Environment) model, the research identifies the key factors affecting e-commerce adoption, providing businesses and organizations with a thorough understanding of the essential components of this process. Moreover, the findings can guide government policymakers in designing effective strategies to support e-commerce adoption across SMEs, driving economic growth. Additionally, this study serves as a vital resource for future academic research in the field, particularly in Nepal, where e-commerce literature is scarce, making it a valuable reference for researchers and practitioners.

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