

Determinants of E-banking in Nepal

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Abstract

This study aims to investigate the determinants of e-banking adoption in Nepal using the Technology Acceptance Model (TAM) as a theoretical framework. In recent years, e-banking has gained traction as a convenient and efficient way to conduct financial transactions, but its adoption in Nepal remains relatively low. The purpose of this study was to identify the factors determining individuals' decisions to adopt e-banking services in Nepal, with a focus on convenience, time savings, security, and communication. A quantitative research approach was employed, utilizing a descriptive research design. Data was collected through a structured questionnaire distributed to e-banking users at various banks in the Kathmandu district. The study found that convenience and time savings were significant determinants of e-banking adoption, supported by statistically significant one-sample t-test results. However, security shown a non-significant impact, while communication demonstrated a significant but slightly lower effect. Therefore, it is recommended that financial institutions in Nepal prioritize enhancing convenience and time-saving features in their e-banking platforms to encourage greater adoption among customers. Additionally, efforts should be made to improve communication strategies to effectively convey the benefits and security measures of e-banking, thereby addressing concerns and building trust among potential users.

Keywords

communication,
convenience,
determinants of
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Introduction

Nepal has a diverse array of financial institutions, including commercial banks, development banks,

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microfinance organizations, and cooperatives, crucial for managing money and fostering economic growth (Bhattarai & Sharma, 2019). Bhattarai and Sharma (2019) indicated a steady growth trend in Nepal's banking sector, evidenced by the proliferation of branches and the introduction of new financial services. However, persistent challenges such as inadequate infrastructure in rural areas pose hindrances to accessing banking services (Acharya, Pokharel and Shrestha, 2021). Rai and Shrestha (2020) stressed the need for innovative solutions to address unforeseen economic challenges effectively.

Moreover, the advent of new technologies is reshaping Nepal's banking landscape, presenting both opportunities and challenges (Shakya and Khadka, 2017). The surge in e-banking adoption in Nepal reflects a broader global shift towards digital financial services (Shrestha & Maharjan, 2019). Yet, understanding the factors driving e-banking adoption remains complex. Thapa and Subedi (2018) explored how e-banking usage influences customer satisfaction, highlighting the importance of user-friendly interfaces and reliable services. Khanal and Sharma (2017) highlighted the role of trust in influencing consumer behavior towards online banking, emphasizing the need for banks to instill confidence in their technology and security measures. Cybersecurity concerns are paramount, as noted by Adhikari and Bhattarai (2016), who stress the importance of robust security protocols to safeguard e-banking transactions. Customer perceptions play a significant role in e-banking adoption and retention (Gurung & Koirala, 2015). Positive experiences and reliable services increase customer loyalty (Tamang & Basnet's, 2013). Addressing technological challenges is imperative for the successful implementation of e-banking systems (Thapa & Sharma, 2012). Pandey and Acharya (2011) emphasized the need for banks to implement effective cybersecurity measures to protect e-banking transactions from cyber threats.

Additionally, customer education plays a crucial role in promoting e-banking adoption (Lama & Adhikari, 2010), highlighting the importance of raising awareness and providing training programs to enhance digital literacy among customers. In recent years, e-banking has witnessed widespread adoption, primarily due to rapid advancements in information technology and the competitive dynamics of banking markets (Dube, Chitura, & Runyowa, 2009; Mahdi & Mehrdad, 2010). E-banking has profoundly impacted the banking landscape, influencing core products and services, as well as delivery and consumption methods. Gupta (2008) and Kamel (2005) highlight e-banking's transformative role in driving development, fostering innovation, and enhancing industry competitiveness. Financial institutions are increasingly leveraging IT to enhance operational efficiency, service quality, and customer attraction. The integration of IT into banking operations has resulted in significant improvements across various service

delivery aspects (Kannabiran and Narayan, 2005). The use of e-banking in Nepalese banks is becoming more popular because it can help more people access banking services and make banking easier. Despite this trend, there remains a lack of comprehensive understanding regarding the factors driving e-banking adoption in Nepal. Studies conducted by Shrestha and Maharjan (2019) and Thapa and Subedi (2018) have investigated into how individuals utilize e-banking and the correlation between service quality and customer satisfaction. However, a significant portion of the determinants influencing e-banking adoption in Nepal remains unknown. Therefore, this study attempted to answer the question of: What are the determinants of e-banking adoption in Nepal? This study aims to examine the determinants of e-banking adoption in Nepal. By identifying these factors, the study seeks to provide insights to decision-makers within banking institutions and among customers, enabling them to devise strategies that promote the wider adoption of e-banking and improve access to banking services for the Nepalese population.

Literature review

E-banking, also known as electronic banking, pertains to the delivery of banking services and the conduct of financial transactions using electronic platforms, predominantly via the internet and mobile devices. Its significance in contemporary banking systems is profound, offering manifold advantages to both financial institutions and clients (Ashta & Borker, 2023). For banks, e-banking enhances operational efficiency through the automation of routine transactions, reduction of paperwork, and streamlining of processes, resulting in cost savings and enhanced service provision (Haider et al., 2021). Additionally, e-banking facilitates financial inclusion by extending banking services to marginalized communities, including those residing in rural or remote areas, thereby stimulating economic development and fostering inclusive growth (Suresh et al., 2020). Gupta and Singh (2020) conducted the study titled “Determinants of E-Banking Adoption: A Study of Convenience Factors.” The purpose of this study was to investigate the determinants of e-banking adoption, focusing specifically on convenience factors. The study conducted a quantitative research study to analyze the influence of convenience factors on the adoption of e-banking. The study employed survey. The findings of the study suggest that convenience factors play a significant role in the adoption of e-banking services. They identified specific aspects of convenience that influence individuals’ decisions to adopt e-banking, providing insights into the factors driving e-banking adoption. Patel and Shah (2018) conducted the study titled “The Influence of Convenience on E-Banking Adoption: A Review of Empirical Studies”. The purpose of this study was to review and synthesize empirical studies that examine the influence of convenience factors on e-banking adoption. The study conducted a comprehensive literature review to identify and

analyze existing empirical studies related to the influence of convenience on e-banking adoption. They synthesized findings from various studies to provide an overview of the relationship between convenience factors and e-banking adoption.

The findings of the review indicate that convenience factors significantly impact individuals' decisions to adopt e-banking services. They identified key convenience factors, such as ease of access, ease of use, and time-saving features, that play a crucial role in promoting e-banking adoption. Additionally, the review highlighted the importance of convenience-enhancing features in e-banking platforms for attracting and retaining users. Khan and Ahmed (2017) conducted the study titled "Exploring the Role of Convenience in E-Banking Adoption: Evidence from Developing Countries". The purpose of this study was to investigate the role of convenience factors in the adoption of e-banking services, particularly focusing on developing countries.

The study employed a mixed-methods approach to explore the role of convenience in e-banking adoption. They conducted surveys and interviews with e-banking users in various developing countries to gather data on their perceptions and experiences regarding the convenience aspects of e-banking. The findings of the study suggest that convenience plays a crucial role in driving the adoption of e-banking services in developing countries. Users perceive convenience factors, such as ease of access, simplicity of transactions, and time-saving features, as significant determinants of their decision to adopt e-banking. Moreover, the study highlights the importance of user-friendly interfaces and mobile accessibility in enhancing the convenience of e-banking platforms for users in developing countries. Patel and Gupta (2021) conducted the study "The Impact of Time Saving on E-Banking Adoption: A Comparative Study." The purpose of this study was to investigate the influence of time-saving aspects on the adoption of e-banking services. The study employed a comparative research design, wherein data is collected from two groups: individuals who perceive time-saving benefits from e-banking and individuals who do not perceive such benefits. Surveys and interviews are conducted to gather qualitative and quantitative data regarding participants' perceptions, attitudes, and behaviors related to e-banking adoption. Statistical analyses, such as regression models or correlation analyses, are utilized to examine the relationship between time-saving perceptions and e-banking adoption rates. The findings of the study revealed that individuals who perceive time-saving benefits from e-banking are more likely to adopt e-banking services compared to those who do not perceive such benefits.

Specifically, the research highlights that the perception of time-saving plays a significant role in influencing consumers' attitudes and intentions towards using e-banking platforms. Furthermore, the study may identify

specific time-saving features or functionalities of e-banking services that have a greater impact on adoption rates, providing valuable insights for banking institutions and policymakers aiming to promote e-banking adoption. Khan and Rahman (2019) conducted the study titled “Exploring Time Saving as a Determinant of E-Banking Usage: Evidence from a Developing Economy.” This study aims to investigate the role of time-saving as a determinant of e-banking usage in a developing economy context. The study employs a mixed-methods approach, combining qualitative and quantitative research methods. Surveys are conducted to collect data on participants' perceptions, attitudes, and usage behavior regarding e-banking services.

Additionally, in-depth interviews or focus group discussions may be conducted to gain deeper insights into the reasons behind individuals' perceptions of time-saving and their decision-making processes regarding e-banking adoption. The findings of the study indicate that perceptions of time-saving play a significant role in influencing individuals' decisions to adopt and use e-banking services in the context of a developing economy. Specifically, participants who perceive e-banking as a time-saving tool are more likely to utilize e-banking services compared to those who do not perceive such benefits. Lee and Kim (2018) examined the research titled “Time Saving and E-Banking Adoption: An Empirical Analysis of Consumer Behavior.”

This study aims to investigate the relationship between time-saving and e-banking adoption by empirically analyzing consumer behavior. The study employs a quantitative research approach, utilizing surveys to collect data from e-banking users. The survey data is then analyzed using statistical techniques such as regression analysis to identify the relationship between time-saving perceptions and e-banking adoption. The findings of the study reveal a significant positive relationship between time-saving perceptions and e-banking adoption among consumers. Participants who perceive e-banking as a time-saving tool are more likely to adopt and use e-banking services compared to those who do not perceive such benefits. Davis (1989) conducted the research titled “Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology.” The purpose of this study was to investigate the factors influencing user acceptance of information technology, focusing on perceived usefulness and perceived ease of use. The study employed a survey methodology to collect data from users of various information technologies.

The study utilized quantitative analysis techniques to examine the relationships between perceived usefulness, perceived ease of use, and user acceptance. The findings of the study highlighted the significant roles of perceived usefulness and perceived ease of use in determining user acceptance of information technology. The study concluded that users are more likely to accept and adopt technology when they perceive it to be

useful for their tasks and easy to use. Alalwan, Dwivedi, Rana, and Williams (2017) conducted the research titled “Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy.” The purpose of this study was to investigate the factors influencing consumer adoption of mobile banking in Jordan, with a focus on perceived usefulness, ease of use, perceived risk, and self-efficacy. The study conducted a survey-based research study among consumers in Jordan to collect data on their perceptions and behaviors related to mobile banking adoption. The study employed quantitative analysis techniques to examine the relationships between perceived usefulness, ease of use, perceived risk, self-efficacy, and consumer adoption of mobile banking. The findings of the study revealed that perceived usefulness and ease of use significantly influenced consumer adoption of mobile banking in Jordan.

Additionally, perceived risk and self-efficacy were also found to play important roles in shaping consumers' decisions to adopt mobile banking services. Evanschitzky, Iyer, Hesse, Ahlert, and Blut (2012) conducted the study titled “E-loyalty: The influence of user satisfaction and social ties.” The purpose of this study was to investigate the impact of user satisfaction and social ties on e-loyalty, which refers to the loyalty of customers towards online platforms or services. The study employs quantitative research methods to analyze data collected from users of online platforms or services. Surveys and questionnaires may have been utilized to gather information about user satisfaction levels and the strength of social ties within online communities or networks. Statistical analysis techniques such as regression analysis or structural equation modeling may have been employed to examine the relationships between user satisfaction, social ties, and e-loyalty.

The findings of the study suggest that both user satisfaction and social ties significantly influence e-loyalty. Users who are satisfied with their online experiences and have strong social ties within online communities are more likely to exhibit loyalty towards the platform or service. This highlights the importance of fostering positive user experiences and building strong social connections to enhance e-loyalty.

This study is based on Technology Acceptance Model (TAM). TAM is a prominent theoretical framework used to understand individuals' adoption of new technologies. According to TAM, an individual's intention to use a technology is primarily influenced by perceived usefulness and perceived ease of use (Davis, 1989). Perceived usefulness refers to the degree to which an individual believes that using a particular technology will improve their job performance or make tasks easier to accomplish. Perceived ease of use, on the other hand, refers to the extent to which an individual perceives the technology as easy and convenient to use (Venkatesh and Davis, 2000). These two factors directly affect an individual's attitude toward using the technology, which in turn influences their behavioral intention to use it (Davis

et al., 1989). In the context of e-banking, research has shown that perceived usefulness and perceived ease of use significantly influence consumers' adoption of online banking services (Alalwan et al., 2017). In developing the conceptual framework (Fig. 1) for the study on the determinants of e-banking in Nepal, the researchers utilized the Technology Acceptance Model (TAM) as the theoretical framework. The independent variables considered were convenience, time savings, security, and communication, each playing a crucial role in influencing users' perceptions and attitudes towards e-banking adoption (Venkatesh and Davis, 2000; Davis, 1989; Alalwan, Dwivedi, Rana, & Williams, 2017). The dependent variable, e-banking adoption, was determined by users' attitudes and intentions toward using e-banking platforms, shaped by the interplay of these independent variables within the TAM framework.

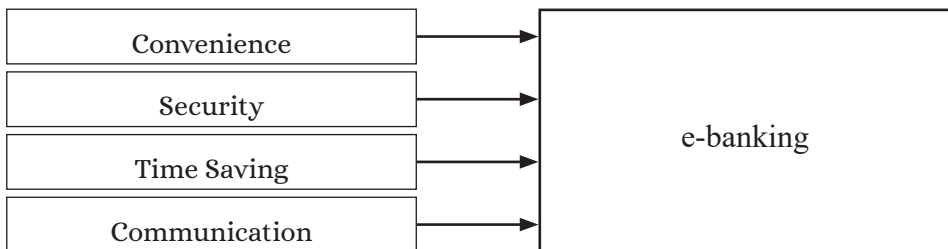


Figure 1: *Conceptual framework of the study*

Based on the literature review and the framework of this study, four hypotheses were proposed:

H1: Convenience is the determinant of e-banking in Nepal.

H2: Time-saving is the determinant of e-banking in Nepal.

H3: Security is the determinant of e-banking in Nepal.

H4: Communication is the determinant of e-banking in Nepal.

Methods

This study employed quantitative research approach. A descriptive research design was chosen to explore the relationships between variables. Judgmental sampling was utilized to select respondents, who were customers of banks meeting the inclusion criteria of being e-banking users. In accordance with Creswell and Creswell's (2017) guidance, there was no fixed minimum sample size requirement for non-probability sampling in quantitative research; instead, factors such as research question complexity and anticipated data variability were considered. With the reference of previous studies by Sinha and Dutta (2017) and Gakure and Nyaoga (2016)—those employed sample size of 300 and 320 respectively—however in this study, I have used the sample size of 385 in total out of 491 respondents. A structured questionnaire with a five-point Likert scale was utilized, and data collection was conducted by visiting various branches

of five banks in the Kathmandu district: NMB Bank, Kumari Bank, Prabhu Bank, Siddhartha Bank, and Standard Chartered Bank. In order to ensure reliability and validity, pilot test was conducted, questionnaire was reviewed by three experts, Likert scale was employed to ensure consistency, and clear instruction to respondents were provided to fill up the questionnaire. The survey was conducted by distributing questionnaires to customers at the banks to collect responses. The collected data was analyzed through descriptive and inferential statistical tools.

Result

Out of the 200 respondents, 65% were male, while 35% were female. The majority of e-banking users in Nepal were found to belong to the age group of 20-30 years. This trend may be attributed to the prevalence of graduate students among the respondents, who are more inclined towards e-banking for secure fund transfers and transactions. Furthermore, a significant portion of e-banking users in Nepal were college students, likely due to their familiarity with internet usage, banking transactions, and the convenience of e-banking processes. Additionally, it was observed that the majority of e-banking users in Nepal come from income groups earning below Rs. 30,000 per month. This could be explained by the widespread internet usage among young individuals who are at early stages of their careers and seek convenient financial management options. The descriptive statistics provided in Table 1 offers insights into the determinants of e-banking adoption in Nepal. Among the factors examined, Convenience and Time Savings emerge as the most significant determinants, with mean scores of 4.13 and 4.12, respectively, indicating a high level of perceived importance among respondents. This suggests that Nepalese individuals place substantial value on the convenience and time-saving benefits offered by e-banking services. In contrast, Security appears to be of lesser concern, as evidenced by its considerably lower mean score of 1.03. However, Communication still garners a relatively high mean score of 3.97, indicating that effective communication channels play a notable role in influencing e-banking adoption decisions in Nepal.

Table 1: Descriptive statistics of e-banking

Statements	Mean	Std. Deviation
Convenience	4.13	0.681
Time Savings	4.12	0.995
Security	1.03	0.165
Communication	3.97	0.809

Source: Primary data

The correlation analysis reveals significant relationships between the determinants of e-banking adoption in Nepal. Convenience exhibits

a strong positive correlation with e-banking adoption ($r = 0.566$, $p < 0.01$), indicating that individuals who perceive e-banking as convenient are more likely to adopt e-banking services. Similarly, time-saving demonstrates a strong positive correlation with e-banking adoption ($r = 0.593$, $p < 0.01$), suggesting that those who view e-banking as time-saving are more inclined to adopt e-banking. Security also displays a strong positive correlation with e-banking adoption ($r = 0.711$, $p < 0.01$), implying that individuals who perceive e-banking as secure are more likely to adopt e-banking services. Additionally, communication exhibits a strong positive correlation with e-banking adoption ($r = 0.762$, $p < 0.01$), indicating that those who perceive e-banking as conducive to effective communication with their banks are more inclined to adopt e-banking. These findings underscore the importance of convenience, time-saving, security, and communication as critical determinants influencing e-banking adoption in Nepal, highlighting their collective impact on individuals' decisions to embrace e-banking services.

Table 2: Correlational matrix

	Convenience	Time-saving	Security	Communication	e-banking
Convenience	1				
Time-saving	0.598**	1			
Security	0.612**	0.744**	1		
Communication	0.547**	0.751**	0.714**	1	
e-banking	0.566**	0.593**	0.711**	0.762**	1
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: *Field Survey*

The determinants of e-banking adoption in Nepal were scrutinized through hypothesis testing, as outlined in Table 3. The results reveal significant findings regarding the perceived importance of various factors among Nepalese individuals. Firstly, Convenience and Time Savings exhibit notable t-values of 6.45 and 8.43, respectively, both with p-values less than 0.05, indicating strong evidence to reject the null hypothesis and affirming that Nepalese individuals perceive convenience and time-saving benefits as significant determinants influencing their adoption of e-banking services.

Conversely, the t-value for Security is 1.26, with a p-value of 0.08, suggesting insufficient evidence to reject the null hypothesis. While the mean score for Security was relatively low, the lack of statistical significance implies that security concerns may not be a significant determinant of e-banking adoption in Nepal. Nonetheless, Communication yields a t-value of 4.78 with a p-value of 0.03, indicating statistical significance and supporting the hypothesis that effective communication channels play a crucial role in influencing e-banking adoption decisions in Nepal.

Table 3: One-Sample t-test

Statements	t	Sig.
Convenience	6.45	0.01
Time savings	8.43	0.00
Security	1.26	0.08
Communication	4.78	0.03

Source: *Field survey*

Discussion

The previous studies conducted by Gupta and Singh (2020), Patel and Shah (2018), and Khan and Ahmed (2017) have collectively contributed to understanding the determinants of e-banking adoption, particularly focusing on convenience factors. Their findings highlight the significant role of convenience in driving individuals' decisions to adopt e-banking services, emphasizing aspects such as ease of access, simplicity of transactions, and time-saving features. Similarly, Patel and Gupta (2021), Khan and Rahman (2019), and Lee and Kim (2018) have explored the influence of time-saving aspects on e-banking adoption, revealing a positive relationship between perceptions of time-saving and the likelihood of adopting e-banking services. These studies highlight the importance of convenience and time-saving features in promoting e-banking adoption, providing valuable insights for banking institutions and policymakers.

Additionally, the research by Davis (1989) and Alalwan et al. (2017) has contributed to understanding the broader factors influencing technology adoption, including perceived usefulness and ease of use, which are also found to be significant in the context of e-banking adoption. The current study's results, as indicated by the one-sample t-tests, reveal that convenience and time-saving are perceived as significant determinants of e-banking adoption, supported by statistically significant t-values ($p < 0.01$). However, security and communication factors demonstrate mixed results, with security showing a non-significant t-value ($p > 0.05$) and communication indicating a significant but slightly lower t-value ($p < 0.05$). These findings suggest that while convenience and time-saving features strongly influence individuals' decisions to adopt e-banking services, security and communication aspects may have varying degrees of impact, warranting further investigation.

Overall, the collective insights from previous studies and the current findings contribute to a deeper understanding of the determinants of e-banking adoption in Nepal, offering valuable implications for policymakers and banking institutions aiming to promote digital banking initiatives.

Conclusion

This study aimed to investigate the determinants of e-banking adoption in Nepal using the Technology Acceptance Model (TAM) as a theoretical framework. The independent variables examined were convenience, time

savings, security, and communication, while the dependent variable was e-banking adoption. Employing a quantitative research approach with a descriptive and causal research design, judgmental sampling was utilized to select respondents meeting the inclusion criteria of being e-banking users. With reference to previous studies, a sample size of 320 was determined, and a structured questionnaire with a five-point Likert scale was employed for data collection. Several measures were taken to ensure the reliability and validity of the questionnaire, including pilot testing, expert review, and clear instructions for respondents.

The survey was distributed to customers at various banks in the Kathmandu district, and the collected data were analyzed using descriptive and inferential statistical tools. The results of the one-sample t-test revealed that convenience and time savings were perceived as significant determinants of e-banking adoption, supported by statistically significant t-values. However, security showed a non-significant, while communication demonstrated a significant but slightly lower. These findings suggest that while convenience and time-saving features strongly influence individuals' decisions to adopt e-banking services, security and communication aspects may have varying degrees of impact, warranting further investigation. Overall, this study contributes to the understanding of e-banking adoption in Nepal and provides valuable insights for financial institutions aiming to promote digital banking initiatives.

This study's implications extend to both theoretical understanding and practical applications within the context of e-banking adoption in Nepal. By employing the Technology Acceptance Model (TAM) as a theoretical framework and investigating determinants such as convenience, time savings, security, and communication, the research provides valuable insights into the factors influencing individuals' decisions to adopt e-banking services. The statistically significant findings regarding the perceived importance of convenience and time savings underscore the importance of user-friendly interfaces and efficient transaction processes in promoting e-banking adoption. However, the non-significant impact of security and the slightly lower significance of communication suggest the need for financial institutions to address concerns related to data protection and effective communication strategies to enhance customer trust and engagement with digital banking platforms.

Moreover, the study's rigorous methodology, including sample selection, questionnaire design, and statistical analysis, enhances the reliability and validity of the findings, contributing to the growing body of literature on e-banking adoption in emerging markets like Nepal. These insights provide valuable guidance for financial institutions seeking to develop targeted marketing strategies and enhance digital banking services to meet the evolving needs and preferences of customers in Nepal's rapidly digitizing financial landscape.

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