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Adoption of E-Payment Among University Students in Higher Educational Institutions of Butwal Sub-Metropolitan City

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Abstract

Purpose: The study aims to identify the key factors influencing university students' intention to adopt electronic payment methods in Butwal, Nepal. Grounded in established theoretical frameworks such as the Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and Unified Theory of Acceptance and Use of Technology (UTAUT), the research investigates how perceived ease of use, perceived usefulness, subjective norms, trust, and perceived security shape students' behavioral intentions toward e-payment usage.

Methods: A quantitative research design was employed using a structured survey questionnaire administered to students from various colleges in Butwal. The collected responses were analyzed to assess the significance and strength of the proposed determinants influencing electronic payment adoption.

Findings: The results indicate that all five determinants significantly affect students' intention to use electronic payment services. Among them, trust and perceived security emerged as the strongest predictors of adoption behavior. This highlights the critical role of system reliability and safety perceptions in shaping students' willingness to engage in digital transactions.

Implications: The study offers valuable insights for policymakers, educational institutions, and financial service providers aiming to promote e-payment usage in academic environments. Strengthening system security, enhancing user-friendly technological features, and implementing trust-building measures can further accelerate progress toward a cashless society. These efforts may also foster greater financial inclusion among Nepalese youth and encourage broader adoption of digital financial services.

Keywords: *Perceived usefulness, Perceived ease of use, Perceived security, Subjective norms and Trust*

I. Introduction

Digital payment is increasingly becoming popular and has emerged as a dominant financial trend in recent years. Following the COVID-19 pandemic, the rise of contactless transactions compelled many individuals and organizations to shift from cash-based to electronic modes of payment. This global movement, which began in 2020, has continued as users increasingly prefer convenient, safer, and faster methods of conducting transactions (Auer et al., 2020). The use of digital payment tools such as mobile banking, cards, QR codes, connect IPS, e-wallets, internet banking, and POS machines has grown rapidly, with licensed institutions consistently modernizing existing tools and introducing new payment instruments to meet digital demand (NRB, 2023). An e-payment refers to the transfer of the electronic value of payment from payer to payee via digital platforms that allow users to remotely monitor and manage their financial activities (Al-Dmour et al., 2021). These digital channels such as debit and credit cards, mobile wallets, internet banking, e-cash, e-

cheques, QR-based payments, UPI, biometric payments, and other forms facilitate transactions without the need for physical cash, streamlining financial exchanges for consumers and businesses (Simatele, 2020).

In Nepal, digital payment systems have gained significant momentum due to their ease, flexibility, and added benefits. Consumers adopting cashless transactions enjoy features such as cashback rewards, direct bank transfers, and convenient tracking of payments (Pathak, 2024). According to Nepal Rastra Bank's Payment System Oversight Report FY 2022/2023, QR-based transactions increased by 189.53% in volume and 159.67% in value compared to the previous fiscal year, making QR codes the most popular payment method. Mobile banking users increased by 16.7%, reaching 21.36 million, while internet banking users grew by 10.2% to 1.86 million. Similarly, mobile wallet users rose to 18.94 million, with total transactions amounting to NPR 219.81 billion. Although card-based transactions continue to grow, their overall pace has slowed (NRB, 2023). These trends collectively indicate that e-payments are becoming a central part of everyday financial activity in Nepal.

The rise of digital payments has also extended into the education sector. Universities increasingly rely on online platforms for tuition payments, exam fees, and other administrative transactions, offering students more efficient and flexible payment options. University students, being technology-savvy and early adopters of digital innovations, play an important role in shaping the broader adoption of these technologies. Understanding the factors influencing their preferences, satisfaction, and usage patterns is therefore essential (Digital Enablement and Digital Payments for Higher Education, 2023). Their adoption behavior may not only indicate current trends but may also predict future societal transitions toward digital financial systems.

However, despite rapid global and national advancement, many Nepali individuals remain hesitant to fully embrace electronic payment technologies. Security concerns, lack of trust in digital systems, and misunderstandings about digital risks contribute significantly to this reluctance. For policymakers, businesses, and financial institutions, identifying the psychological, technological, and social determinants that shape consumer perceptions is crucial for strengthening adoption. Even among university students-who represent a major segment of the tech-driven population-challenges such as digital literacy gaps, perceived security risks, regional accessibility differences, and uneven digital infrastructure may influence adoption patterns (Prasain, 2024). Thus, understanding the specific factors affecting students' willingness to adopt e-payment systems is essential for enhancing user experience and integrating digital payments more effectively within educational settings.

The rapid growth of internet technologies has transformed traditional banking methods, enabling quick and accessible financial transactions. However, the expansion of digital banking has also introduced new security risks and user concerns. Although electronic banking offers numerous benefits, Nepal continues to face obstacles in its implementation, as many users show resistance due to limited confidence, minimal technological knowledge, and misconceptions about potential risks (Sarlak & Hastiani, 2011). Furthermore, the development of digital financial services requires substantial investment in information and communication technology. Despite such investments, the adoption of e-banking services in Nepal is hindered by poor communication infrastructure, insufficient broadband penetration, staff shortages, low banking penetration, and delays in product delivery (Jalal et al., 2011).

Empirical studies have identified several determinants of consumer satisfaction and adoption behavior in digital banking. Reliability has limited influence compared to speed, responsiveness, assurance, and affordability (Islam & Himel, 2015). Convenience and reliability positively shape user experiences (Addai et al., 2015). Website speed, user-friendliness, and content quality play key roles in determining satisfaction (Linga et al., 2016). Security, performance, usability, dependability, and training contribute significantly to satisfaction (Kavitha, 2017). Complexity, customer support, security, accessibility, and relevance influence consumer satisfaction more strongly than competence or connectivity (Patel & Bhatt, 2018). Perceived

usefulness mediates the effects of factors such as trust, self-efficacy, and ease of use (Banu et al., 2019). Cost, responsiveness, and relative advantage directly impact satisfaction (Jahan & Shahria, 2021). Reliability, security, privacy, and responsiveness hold greater influence than ease of use (Angusamy et al., 2022). Similarly, system security, privacy, trust, and financial stability shape customer readiness for online payments (Muhtasim et al., 2022). Service quality promotes customer loyalty through satisfaction (Lamsal, 2022), and convenience, security, and responsiveness remain dominant predictors of satisfaction (Thakuri et al., 2023).

Despite government initiatives promoting digital transactions, barriers such as digital illiteracy, perceived security risks, limited internet access, inadequate digital infrastructure, and resistance to shifting from traditional cash-based practices persist (Prasain, 2024). The extent to which these policies affect university students remains insufficiently explored. Therefore, understanding why such barriers remain, identifying the factors influencing university students' adoption of e-payment systems, and enhancing digital financial literacy are essential steps toward encouraging confident student participation in digital payment ecosystems and supporting Nepal's transition toward a cashless society.

The study aims to accomplish the following Objectives:

- To examine the relationship between perceived usefulness, perceived ease of use, subjective norms, trust and perceived security and the adoption of e-payment.
- To investigate the impact of perceived usefulness, perceived ease of use, subjective norms, trust and perceived security to e-payment adoption.

II. Literature Review

This section summarizes the body of research on digital payment systems, looking at both domestic and foreign viewpoints. It draws attention to earlier research that examines how consumers view digital payments, emphasizing the major variables affecting their uptake and application.

Given the increasing dominance of digital payment systems in financial transactions, it is critical for both service providers and users to comprehend the factors influencing consumer perceptions. These beliefs affect long-term engagement and satisfaction in addition to adoption rates. In order to provide a thorough grasp of their impacts, this review examines important elements like perceived benefits, security, subjective Norms trust, and ease of use, incorporating knowledge from both empirical research and well-established theoretical frameworks.

Theoretical Review

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) defines by Davis (1989) that perceived usefulness and perceived ease of use are the primary determinants of new technology adoption. Unlike perceived ease of use, which is the perceived difficulty of a system to a person, perceived usefulness is an extent to which an individual believes a given system will suffer his or her ability to perform the tasks. This theoretical framework demonstrates the fact that technology acceptance is based on the perceptions of users rather than objective system features. Since it indicates that behavioral intention to use technology is a product of perceived utility as well as usability, this paradigm is particularly relevant in the adoption of electronic payment systems (Davis, 1989). Later theoretical extensions have added other constructs such as privacy concerns, trust, perceived risk, user satisfaction and e-loyalty (Amoroso& Hunsinger, 2009). The fundamental significance of the TAM constructs of perceived utility and usability in technology adoption research was highlighted by their subsequent integration into the larger Unified Theory of Acceptance and Use of Technology (UTAUT).

Theory of Planned Behaviour (TPB)

The Theory of Planned Behavior (TPB) (Ajzen, 1991, 2001) scientists built on the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) by introducing perceived behavioral control (PBC) as a contributor that contributes to behavioral intention and actual behavior. Ajzen and Madden (1986) and Sparks et al. (1992) show that positive relation between PBC and fundamental control beliefs. People evaluate their available resources and capabilities to perform behavior according to Ajzen and Madden (1986). According to the TPB framework behavioral intention results from three core factors which include subjective norms and attitudes alongside PBC. Research by Hsu et al. (2006) shows that user satisfaction together with expectation fulfillment act as main decision drivers for technology continuance based on the TPB paradigm.

Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh et al. (2003) came up with the Unified Theory of Acceptance and Use of Technology (UTAUT) through coordinating eight of the best accepted technology acceptance models including Technology Acceptance Model (TAM), Diffusion of Innovation (DOI), Motivational Model, Theory of Reasoned Action, Theory of Planned Behavior (TPB), the integrated TAM -TBP model and Model of PC Utilization and Social Cognitive Theory. According to such integrative model, there exist four and fundamental determinants of technology adoption, i.e., performance expectancy, effort expectancy, social influence and facilitating conditions. Empirical study longitudinal validation revealed that UTAUT is a powerful tool to explain usage behavior (50 percent), and behavioral intention (70 percent) variance. The model has four moderating variables (age, gender, experience, and voluntariness of use) between its core constructs and two dependent variables (behavioral intention and use behavior). Theoretical extensions were subsequently made to create UTAUT2 that added three more constructs, including hedonic motivation, price value, and habit. The Song (2010) also extended the use of word-of-mouth communication as a new construct as well as 2 other constructs (enjoyment and trust).

Theory of Reasoned Action (TRA)

The formulated Theory of Reasoned Action (TRA) is a theoretical basis to explain the process of decision-making towards behavior, particularly, adoption of technology. The model relies on the three most important constructs to create the cause-and-effect relationship among the attitudes and subjective norms on the behavioral intention issue. TRA believes that individual behavioral intention (personal attitude and perceived social pressure subjective norms) is the most excellent predictor of the actual behavior(Ok & Shon, 2007). The fundamental proposition of the model is that behavioral intention directly predicts action, with independent variables affecting the intention being attitudes and subjective norm. Studies of empirical applications of TRA in consumer evaluations of website quality (Loiacono et al., 2007), and knowledge sharing behavior (Bock et al., 2005) have employed TRA. Ajzen (1991) development of the Theory of Planned Behavior (TPB) was founded on a theoretical framework that has been extensively used in subsequent studies on technological acceptance.

Diffusion of Innovations theory

In 1962, E.M. Rogers invented the Theory of Diffusion of Innovations that is used to explain how a new idea, product or practice spreads and gains acceptance within a particular community or social system. Prior to embracing something, people need to first perceive it as innovative. These steps include learning about the innovation, deciding to use the innovation, using the innovation temporarily and after that, continuous usage. The five factors that have a significant influence on the rate of innovation adoption are relative advantage, compatibility, trialability, complexity, and observability. Most individuals belong to the mid ranges of the five groups of adopters Rogers uses, namely innovators, early adopters, early majority, late majority, and laggards.

The theory brings out the why and how of how innovations and technologies spread. The five essential processes in the decision-making process of embracing innovations are knowledge, persuasion, decision-making, implementation and confirmation. According to Rogers (1995), these qualities are also the five steps of decision-making progress for putting new concepts and technology into practice. When introducing new concepts or technologies, these procedures are essential. Constructs from Rogers' theory, such as relative advantage, compatibility, and ease of use, have also been used to create frameworks like the Unified Theory of Acceptance and Use of Technology (UTAUT), which holds that image, relative advantage, and ease of use are important determinants of technology adoption.

Empirical Review

Perceived usefulness has consistently emerged as a key determinant of users' intention to adopt electronic payment systems. Aryal (2021) found that perceived benefits, alongside security, self-efficacy and ease of use, significantly influenced consumer perceptions of e-payment systems in Butwal Sub-metropolitan City, indicating that users are more inclined toward e-payments when they see clear functional advantages. Timilsina (2020) similarly reported that perceived usefulness was rated relatively high among users in Kathmandu Valley and exerted a stronger influence on future adoption intentions than security and trust. In the broader Asian and international context, Teoh et al. (2013) and Alyabes and Alsalloum (2018) showed that benefits and perceived usefulness significantly affect consumers' perceptions of e-payment systems, while Alaeddin et al. (2018) demonstrated that perceived usefulness plays an essential role in shaping attitudes toward switching from physical to electronic payment platforms. Eastin (2002), as well as Gerrard and Cunningham (2003) and Chou et al. (2004), further emphasized the financial and convenience-related benefits of electronic payments, reinforcing the notion that the more users recognize usefulness and economic gain, the more likely they are to adopt e-payment services.

H1: The perceived usefulness has considerable influence on adoption of e-payment system among university students.

Perceived ease of use is another core construct widely supported by empirical evidence as a driver of e-payment adoption. Aryal (2021) reported that ease of use significantly influenced perceptions of e-payment among users in Butwal, suggesting that systems that are simpler to operate encourage more favorable attitudes. Timilsina (2020) also found that perceived ease of use received high ratings and had a strong impact on users' willingness to adopt electronic payments in Kathmandu Valley. Rana Magar et al. (2023) identified perceived ease of use as a major factor determining behavioral intention to use e-payment services in Nepal, alongside perceived usefulness, credibility and social influence. In Malaysia, Teoh et al. (2013) and Alyabes and Alsalloum (2018) both concluded that ease of use and self-efficacy significantly affect consumer perceptions of e-payment, while Alaeddin et al. (2018) highlighted perceived ease of use as a crucial determinant of attitudes toward switching from traditional to electronic platforms. In line with UTAUT, de Sena Abrahao et al. (2016) showed that effort expectancy (conceptually similar to ease of use) positively influenced behavioral intention to adopt mobile payment services in Brazil. These findings collectively underscore that when payment interfaces are simple, intuitive, and require minimal effort, users—especially students—are more likely to adopt them.

H2: The perceived ease of use and adoption of e-payment system have a significant effect on university students.

Subjective norms and social influence have also been identified as important determinants of behavioral intention toward e-payment adoption. Rana Magar et al. (2023) reported that social influence significantly shaped user satisfaction and behavioral intention to use e-payment systems in Nepal, indicating that the perceptions and recommendations of peers, family, and reference groups can drive adoption. The UTAUT-

based study by de Sena Abrahão et al. (2016) similarly found that social influence had a positive relationship with behavioral intention to adopt mobile payments, suggesting that individuals are more inclined to use such systems when significant others approve of or are already using them. Studies such as Kaur et al. (2021), which examined e-payment adoption in Delhi NCR during COVID-19, also indirectly reflect the role of social and health-related norms in shaping digital payment intentions, particularly under conditions where contactless transactions become socially encouraged for safety reasons. Together, these findings imply that subjective norms-what important others think and do-can meaningfully shape university students' decisions to adopt e-payment systems.

H3: The subjective norms and introduction of e-payment system among the university students impact significantly.

The empirical evidence on trust presents a more mixed picture, yet still suggests that it remains an important factor for e-payment adoption. Aryal (2021) found that, in Butwal, trust did not significantly influence consumer perception compared to perceived benefits, security, self-efficacy and ease of use, suggesting that practical and functional considerations may outweigh generalized trust concerns in that context. Budhathoki (2020) also reported that trustworthiness and product safety did not significantly influence youths' perceptions of e-payments in Pokhara, and Teoh et al. (2013) as well as Alyabes and Alsalloum (2018) similarly found that trust and security did not show significant relationships with consumer perceptions in Malaysia and Saudi Arabia, respectively. However, other studies emphasize the conceptual and practical importance of trust. Kim et al. (2010) highlighted ongoing uncertainties and security issues surrounding digital payment systems, implying that trust in the system and provider is central to user confidence. Hasan et al. (2012) and Heng (2004) also stressed that reliability and perceived safety in digital transactions are crucial for user acceptance. This combination of non-significant and conceptually important findings suggests that while trust may not always appear as a strong direct predictor in every setting, it remains a critical psychological condition enabling sustained adoption, particularly for high-value or repeated e-payment use among students.

H4: University students have a significant effect on the adoption of e-payment system and the influence of trust.

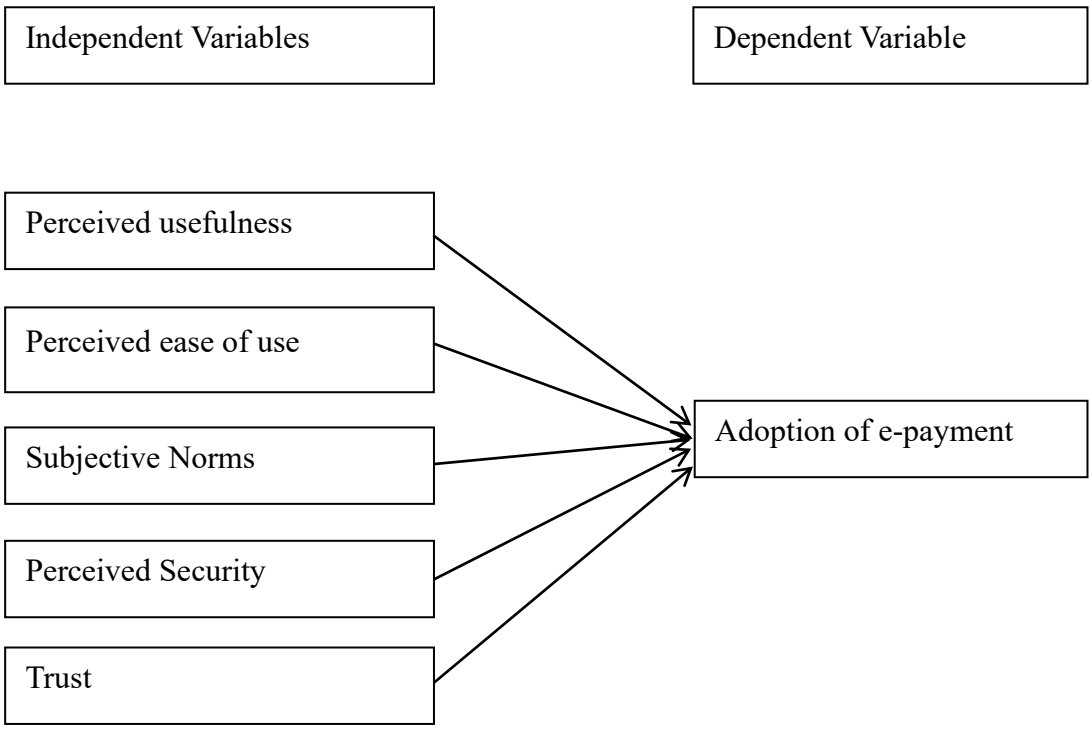
Perceived security has been widely discussed as a pivotal determinant of e-payment usage and intention. Although Timilsina (2020) found that perceptions of security were rated negatively and influenced adoption less strongly than usefulness and ease of use in Kathmandu Valley, the same study highlighted security as a key concern that can hinder broader diffusion. In the broader literature, Kaur et al. (2021) showed that perceived security and perceived health security significantly influenced customer intentions to use e-payment services in Delhi NCR, especially in the context of COVID-19. Kim et al. (2010) pointed out that despite the advantages of faster transactions and reduced management fees, uncertainties and security concerns remain significant barriers to digital payment system adoption. Hasan et al. (2012) described digital payment systems as electronic processing over computer networks designed to provide secure alternatives to cash and checks, emphasizing security as part of the system's value proposition. Heng (2004) also underlined the centrality of convenience, reliability, and security in retail payment systems. Similarly, Abrazhevich (2001) and Sumanjeet (2008) described digital payment systems as efficient and cost-effective mechanisms for online transactions, implicitly relying on secure infrastructures to function effectively. Taken together, these studies suggest that even when perceived security is not always the strongest statistical predictor, it is a foundational requirement for users especially university students-to feel comfortable adopting and continuously using e-payment systems.

H5: Perceived security and adoption of e-payment system have significant effect on the use of e-payment system by university students.

Research Framework and Definition of Variables

Figure 1

Research Framework



Note. Adapted from Goh (2017).

Definition of Variables

Perceived usefulness

How much that person believes that using a particular system is likely to enhance their performance in the workplace (Davis, 1989). The utility of a system, which is vital to its adoption, has a great impact on the perception of users about it (Davis, 1989). Overall, users would like systems that are efficient, effective and enhance their performance. According to the Technology Acceptance Model (TAM), acceptance of technology by the users is influenced by the perceived utility and usability (Venkatesh & Davis, 2000). The more a system improves the quality of work and is easy to use, the better chances of its adoption (Venkatesh & Davis, 2000).

Perceived ease of use

How much one thinks that using a particular system would prove to be painless (Davis, 1989). The ease of use is another important element that promotes the implementation of a new system. Long integration times and sophisticated input/output modes even turn off the most active forum nerds. As demonstrated by Venkatesh et al. (2003) and other researchers, the perceived ease of use is very influential in the technology adoption in general. This, in this instance, translates into a simple, clear design with self-evident instructions to the user. All the features accessible to the user need to be user friendly and the functions ought to be fast and with minimal or no training.

Subjective Norms

Fishbein and Ajzen (1975) define subjective norms as an individual feeling on what the majority of the people believe should be done. Subjective norms are considered to be one of the most important elements of social influence as the social pressure (Albarracin et al., 2001; Ajzen and Fishbein, 2005; Fishbein & Stasson, 1990).

Subjective norms are a combination of normative beliefs regarding the reference groups and a motivation of an individual to agree and follow the referents (Neighbors et al., 2007). Bhattacherjee (2000) also distinguished between two categories of subjective norms namely external influence and interpersonal influence. The examples of external influence are expert opinions and reviews or the media, whereas the examples of interpersonal influence are friends, family, and relatives.

Perceived Security

Past research has suggested that individual decisions to use e-wallet are made after determining the security capabilities of the e-wallet. Batra and Kalra (2016) state that security is one of the positive factors influencing the acceptance of e-wallets. When extra security is implemented, e-wallets are more likely to be used by the users. The security of their financial transactions was the greatest issue of the respondents according to Batra and Kalra (2016). Sardar (2016) argues that most interviewees believed that the aspect of security constituted an important element of implementing an e-wallet. Most consumers were security conscious when making their electronic payments. Security is one of the key factors that determine the adoption of e-wallets by consumers.

Trust

Yousefzai et al. (2003) define trust as the amount of risk in the financial transactions that leads to a lower perceived risk and this leads to increased use of the electronic payments by the users. The reason why users trust is due to the fact that operations of e-payment are conducted as per the expectation of the users (Tsiakis & Sthephanides, 2005; Mallat, 2007). Losses can be avoided by mistrust and more gains by trust (Linck et al. 2006, p. 455, and Kousaridas et al. 2008, p. 686). Users have the free will of trusting or not trusting others.

III. Research Methodology

Research Design

A research design may be defined as a guideline, procedure, tackling research problems and deviations. The research design adopted in this investigation is descriptive and explanatory research design. The investigation in the research is of descriptive nature. The above is using non-rigid study design because it aims at determining the nature of cause-and-effect relationship between the variables. The explanatory aspect is used in the establishment of the nature and scope of the cause-and-effect relationship between the dependent and independent variables. The purpose of the research is to determine effects of changes in independent variables on dependent variables.

Population

The targeted population in this study will be the population of students at Tribhuvan University in Butwal Sub-Metropolitan city who use the online payment service provided to them by various service providers in the city. In this research the population size is known. Five TU-affiliated colleges were picked based on the fact that they constitute the highest concentration of management students both at the degree levels of bachelors and masters in the city hence making the sample representative of the target population. The target of the study is primarily the Management Students.

Table 1

List of students of colleges in Butwal sub-metropolitan city

Name of Colleges in Butwal	No. of students in Bachelors	No. of students in masters
Lumbini Banijya Campus	2424	260
Butwal Kalika Campus	780	-
AIMS College	120	-

Butwal Multiple Campus	2237	337
Siddhartha Gautam Buddha Campus	620	250
Total	6181	847

Sample Size

For the amount of required sample size, this formula was used:

$n= N/1+N(e)^2$

Where:

- n = required sample size
- N = total population
- e = margin of error (usually 5% or 0.05)

Moreover, to aim 95 percent confidence level the sample size is

$n= 7028/1+7028(0.05)^2$

$= 378.5$

Where,

Total students (Bachelor's + Master's):

N=6181+847=7028

Table 2

Sample Size by College

College	Total Students	Proportional Sample (≈)
Lumbini Banijya Campus	2,684	145
Butwal Kalika Campus	780	42
AIMS College	120	7
Butwal Multiple Campus	2,574	138
Siddhartha Gautam Buddha Campus	870	47
Total	7,028	379 students

Therefore, the sample for the study comprises 379students of different university who uses online payment services to ensure sufficient representation and statistical validity.

Sampling Method

The research involved the use of a mixture of convenient sampling and proportionate allocation. The participants were selected on ease of availability, accessibility and willingness to respond using convenience sampling, a non-probability sampling method. Students of the Universities who could be easily contacted were contacted to participate. To make sure that the sample size of each college was representative of its population size, proportional allocation was applied. The number of participants from each college was calculated using the formula:

Strata sample size=(Sample size/ Population size)×Stratum size

Where, Stratum size= No. of Students in each specificcollege

This approach allowed the study to achieve a balanced and representative sample while maintaining practical feasibility.

Nature and Sources of Data Collection

In the research, a quantitative methodology was utilized with primary data gathered by way of questionnaires that were issued to students of various university who utilizes online payment services in the five colleges that make the Butwal Sub-metropolitan City. The distribution of the survey was carried out by using questionnaire distribution method between 400 respondents with 379 students responding. The survey questionnaire included a five-point Likert-type scale on subject agreement with statements in the survey on some of the primary determinants such as Perceived Usefulness, Perceived Ease of Use, Subjective Norms, Perceived security as well as Trust in a five-point scale (1=strongly disagree and 5=strongly agree).

Data Collection Instruments

A structured questionnaire comprising closed-ended questions was meticulously designed to align with the study's data requirements. The questionnaire was physically distributed by visiting the college to facilitate widespread distribution. To ensure data accuracy, clear instructions were provided to guide respondents through the completion process. The questionnaire employed a five-point Likert scale, with response options ranging from "strongly disagree" to "strongly agree," to quantify participant responses effectively.

Methods and Tools of Analysis

The study followed a comprehensive statistical analysis framework because the kind of data collected was statistical. To summarize the responses of the participants and examine their answers, descriptive statistics have been determined, which include the central tendency (mean) and dispersion (standard deviation) measures. The dependability of the research instrument was checked with the help of established reliability testing protocols. Data normality was also verified to determine whether parametric or non-parametric tests should be applied before doing any inferential tests. Regression analysis was employed to establish the influence of the independent variables on the dependent variable whereas correlation analysis was employed to examine the relationship between the variables. All statistical calculations were done using the Statistical Package of the Social Sciences (SPSS) to ensure that the study was methodologically rigorous.

IV. Analysis and Results

The main purpose of this chapter is to expand on the objectives outlined in the introduction by offering valuable insights and a detailed analysis of the data. To accomplish this, a range of statistical techniques described in the “Research Methodology” section are employed, enabling a comprehensive evaluation. This analysis is essential for understanding the factors that affect the adoption of digital wallets.

Demographic Information

The demographic profile outlines the essential characteristics of the study participants or target population. It covers vital information such as age, gender, income level, educational background, occupation, marital status, and other relevant socioeconomic variables. This section provides a comprehensive understanding of the respondents, offering insights into their background and helping to assess how these attributes may impact the research outcomes.

The demographic profile in Table 3 shows that the majority of respondents were female (69.9%), predominantly aged 21–23 years (40.4%). Most participants held a Bachelor’s degree (71.5%), and a large proportion were single (83.9%). This distribution indicates that young, bachelor-level, and single female students were more actively engaged in the study, reflecting their stronger participation in e-payment–related survey research.

Table 3

Demographic Profile of Respondents

Variable	Category	Frequency (N)	Percentage (%)
Gender	Male	114	30.1
	Female	265	69.9
Age Group	18–20 years	91	24
	21–23 years	153	40.4
	24–26 years	105	27.7
	Above 26 years	30	7.9
Academic Qualification	Bachelor's Degree	271	71.5
	Master's Degree	108	28.5
Marital Status	Single	318	83.9
	Married	61	16.1
Total Respondents		379	100

Descriptive statistics

Table 4

Descriptive Statistics of Respondents

Variables	Mean	SD	Cronbach's Alpha
Perceived Usefulness	4.32	0.673	0.805
Perceived Ease of Use	4.12	0.581	0.729
Subjective Norms	3.96	0.958	0.932
Trust	4.36	0.7	0.88
Perceived Security	4.16	0.693	0.898
E-Payment Adoption	3.96	0.741	0.726

The results indicate in Table 4 that all the study variables demonstrate acceptable to excellent reliability, with Cronbach's alpha values ranging from 0.726 to 0.932, exceeding the recommended threshold of 0.70. Among them, Subjective Norms showed the highest internal consistency (α = 0.932), while E-Payment Adoption displayed the lowest but still acceptable reliability (α = 0.726).

Descriptively, the mean scores of the variables fall between 3.96 and 4.36, suggesting that respondents generally held positive perceptions toward e-payment systems. Trust recorded the highest mean (M = 4.36), indicating that students largely perceive e-payment systems as reliable. Both Perceived Ease of Use and Perceived Usefulness also displayed high mean scores, highlighting favorable user attitudes. Meanwhile, Subjective Norms and E-Payment Adoption exhibit moderate variability (higher SD values), implying more diverse opinions among respondents in these areas.

Inferential Statistics

Correlation Analysis

Table 5

Correlation Matrix

	EPA	PU	PEU	SJN	T	PS
EPA	1					
PU	.463**	1				
PEU	.219**	.192**	1			
SJN	.295**	.192**	0.012	1		
T	.536**	.559**	.209**	.190**	1	
PS	.524**	.379**	.157**	.220**	.421**	1

Note. SPSS Output

The correlation matrix presented in Table 5 shows the relationships between the dependent variable Intention to Use Mobile Payment (IPMP) and the independent variables: Perceived Usefulness (PU), Perceived Ease of Use (PEU), Subjective Norms (SJN), Trust (T), and Perceived Security (PS). The results reveal that Trust (T) has the strongest positive relationship with EPA (r = .536**), followed closely by Perceived Security (PS) (r = .524**) and Perceived Usefulness (PU) (r = .463**). These results suggest that when users trust the mobile payment system and perceive it as secure and useful, their intention to use it increases significantly.

Subjective Norms (SJN) also show a positive and moderate correlation with IPMP (r = .295**), indicating that social influence plays a role, though to a lesser extent. Lastly, Perceived Ease of Use (PEU) shows a weak but statistically significant positive relationship with EPA (r = .219**), suggesting that while ease of use matters, it may not be as influential as other factors. All relationships marked with ** are statistically significant, indicating that these findings are unlikely to be due to chance and can be considered reliable for understanding user behaviour in Butwal sub-metropolitan city.

Regression Analysis

Table 6

Model summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.663	0.439	0.431	0.558

Table 7

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	91.012	5	18.202	58.38	.000
Residual	116.297	373	0.312		
Total	207.309	378			

Table 8

Regression Coefficient

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-0.256	0.284		-0.9	.368
Perceived Usefulness	0.161	0.053	0.146	3.047	.002
Perceived Ease of Use	0.106	0.051	0.083	2.074	.039
Subjective Norms	0.112	0.031	0.145	3.606	0.000
Trust	0.296	0.052	0.281	5.737	0.000
Perceived Security	0.326	0.047	0.305	6.927	0.000

Note. SPSS Output

The regression analysis in Table 6, 7 and 8 shows that the R^2 value is 0.439, meaning that 43.9% of the variation in e-payment usage can be explained by the changes in the independent variables included in the study. The p-value is 0.000, which confirms that the model is statistically significant and fits the data well.

Usage of e-payment is viewed as a dependent variable and the independent variables will be perceived usefulness, perceived ease of use, subjective norms, trust and perceived security. The beta of these variables is 0.161, 0.106, 0.112, 0.296 and 0.326 respectively. This indicates that a unit improvement in perceived usefulness will result in a 0.161 increment in the use of digital wallets. Similarly, the increment of the perceived ease of use by one unit leads to the increment of the usage by 0.106. The subjective norms increase by 0.112 with a one unit increase in the subjective norms and the trust increases the usage by 0.296 with a one unit rise in trust. Perceived security is the most influential with the one-unit increment leading to 0.326 increase in the usage of e-payments.

The relationship can be described by the estimated multiple regression equation:

$EPA = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + e$ ..... (i)

Where,

EPA = E-payment Adoption

X_1 = Perceived Usefulness

X_2 = Perceived Ease of Use

X_3 = Subjective Norms

X_4 = Trust

X_5 = Perceived Security

β = Intercept or slope

e = Random error term

Substituting the values of the coefficients into equation (i), we get:

$UDW = -0.256 + 0.161X_1 + 0.106X_2 + 0.112X_3 + 0.296X_4 + 0.326X_5 + e$ ..... (ii)

Summary of Hypothesis Testing

Table 9

Summary of Hypothesis Testing

Hypothesis	Statement	*β*	*p*-value	Remarks
H_1	The perceived usefulness has considerable influence on the adoption of e-payment system among university students.	0.161	0.002	Accepted
H_2	The perceived ease of use and adoption of e-payment system have a significant effect on university students.	0.106	0.039	Accepted
H_3	The subjective norms and introduction of e-payment system among the university students impact significantly.	0.112	0.000	Accepted
H_4	University students have a significant effect on the adoption of e-payment system and the influence of trust.	0.296	0.000	Accepted
H_5	Perceived security and the adoption of e-payment system have significant effect on the use of e-payment system by university students.	0.326	0.000	Accepted

V. Discussion

The use of e-payment systems among the students in universities is largely influenced by perceive usefulness (PU). Based on the Technology Acceptance Model (TAM) developed by Davis (1989), PU can be defined as the extent to which a person considers that the use of a certain system will make his/her performance better. In the case of e-payment systems, PU would help to garner the perceived benefits of the systems to the students, which include saving time, convenience and efficiency when it comes to financial transactions. Empirical researchers have been consistent in ascertainment of the positive influence of PU on the utilization of e-payment systems. As an example, Nasir et al. (2015) noted that PU directly affects e-payment system adoption among students in universities taking into consideration efficiency and effectiveness of systems. Other researchers in the same manner observed that PU affects intention of students to utilize e-payment system in institutions of higher learning significantly (Salloum et al., 2019). Such findings support the importance of creating e-payment systems that are of practical value to the end-user. Through ensuring that the system

effectively addresses the requirements of the students paying fees promptly, keeping a transaction history, and integrating with academic services colleges can enhance the perceived usefulness of the system. This can eventually lead to higher adoption as well as smoother financial processing within educational entities.

The Perceived ease of use (PEOU) is also a major factor of adoption of e-payment systems by college students. In TAM, the PEOU is determined as the degree to which someone would assume that using a particular system would be painless. This is as far as e-payments are concerned; it is comfortable and natural to operate the system and even straightforward to pay money. Literature has established that PEOU is one of the key factors in how the users feel towards the use of new technologies. As an illustration, Keramati et al. (2012) have derived that PEOU is positively correlated with online banking services adoption intention, where system ease of use and friendliness are also significant features. Again, Salloum et al. (2019) found that PEOU is significantly positively correlated with students' e-payment systems usage intention. These results suggest that in order to guarantee effective application of e-payment systems in universities, user-centric design needs to be emphasized. Clearly understandable features, fewer steps in completing transactions, and timely customer support can enhance PEOU. By reducing complexity in financial transactions, universities can provide a more facilitating environment for students to adopt and use e-payment systems on a regular basis.

Subjective norms (SN) refer to perceived social pressure for or against engaging in a given behavior. In the Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) developed by Ajzen (1991), SN are categorized as key to affecting behavioral intentions. Among university student e-payment adoption, SN encompass peer, family, and organizational pressures towards a person's decision to use such systems. Empirical studies confirm the applicability of SN in technology adoption. For instance, Nasir et al. (2015) confirmed that SN was a critical driver of students' intention to adopt the e-payment system, consistent with the impact of social and peer norms on technology adoption. Amoroso and Magnier-Watanabe (2012) also demonstrated that in Japan, consumers' perceptions of what others would expect had a positive effect on consumers' adoption of mobile wallet technologies. These findings indicate that universities seeking to increase e-payment adoption need to consider ways leveraging social influence. This could involve peer-led workshops, guidance from powerful student leaders, or embedding the use of e-payments in regular university procedure. Institutions can leverage the power of subjective norms to drive adoption by embedding the use of e-payments as business as usual.

Trust is a pillar that is fundamental in the adoption of e-payment systems, especially by university students who may be skeptical about the security and stability of electronic financial systems. Trust in this context implies having faith that the e-payment system is dependable, secure, and operates with integrity. Literature has emphasized the pivotal role played by trust in technology adoption. For example, Zhou (2013) examined the impact of initial trust on user adoption of mobile payment and confirmed that structure assurance and information quality are the major factors affecting initial trust. Additionally, Nasir et al. (2015) emphasized that users' trust in e-payment systems is crucial for their adoption, pointing out the similarities between trust and perceived usefulness in predicting user behavior. To cultivate trust, universities must ensure that e-payment systems are secure, transparent, and user-friendly. Putting investments into robust security features, providing clear information about transaction processes, and maintaining responsive customer support can serve to enhance users' trust in the system. By building and sustaining trust, institutions can, in turn, encourage students to accept and utilize e-payment systems with greater frequency.

Perceived security (PS) is a major adoption driver of e-payment systems, particularly for university students who are increasingly seeking the security of their financial transactions. PS is the perception by users of the

safety and protection mechanisms of the e-payment system. Empirical research highlights the function of PS in technology adoption. Akturan and Tezcan (2012) identified that privacy and security concerns have an important function in influencing consumer attitudes towards mobile payment systems, with a need for secure platforms to facilitate increased adoption. Similarly, Salloum et al. (2019) found that perceived security positively affects students' intention to use e-payment systems in universities. These results indicate that universities need to give high priority to the security features of their e-payment systems if they are to promote adoption. This involves using high-level encryption technologies, updating security measures frequently, and informing students of the mechanisms put in place to safeguard their information. By dealing with security issues upfront, institutions will be able to build students' trust in the system, hence encouraging its extensive adoption.

VI. Conclusion and Implication

Conclusion

The findings of this study show that perceived usefulness, ease of use, security, trust and subjective norms are all significant factors that affect the adoption of e-payments. The most affecting factor among them is perceived security, followed by trust. Perceived usefulness and subjective norms have weaker influence as compared to perceived security and trust. Ease of use had the weakest influence affecting users' intentions to use e-payment. These results emphasize the need for e-payment providers to prioritize these critical factors in system design and marketing campaigns. By effectively addressing these drivers, providers can provide a more satisfactory overall user experience, grow their user base, and enhance adoption and usage of e-payment services.

Implications

The findings of this research have a number of practical implications for policymakers, financial institutions, and developers who are interested in encouraging the use of e-payment systems among university students. With the fact that the findings indicate that perceived usefulness, ease of use, trust, security, and subjective norms are key determinants of students' adoption decisions, stakeholders must develop solutions that directly address these determinants. Universities and providers can collaborate to encourage digital financial literacy and trust among students, in particular by demonstrating the efficiency, security, and relevance of e-payment systems in students' daily financial transactions. Institutions can thus not only increase take-up of e-payment services but also facilitate wider financial inclusion goals. Besides, utilizing these findings for the design and implementation of student-oriented digital payment systems will improve user satisfaction and long-term engagement. This is pivotal in a technology age where digital financial technologies are now becoming an integral part of everyday life.

Major Practical Implications

- User-Centric Design: Designers should aim for intuitive and straightforward user interfaces in order to maximize perceived ease of use, thereby increasing uptake among students who are likely less sophisticated in financial technologies.
- Demonstrated Usefulness: E-payment facilities need to objectively ascertain time-saving advantages, convenience of transactions, and compatibility with student needs (e.g., tuition fees payment, on-campus purchases) in order to raise perceived usefulness.

- Improving Trust and Security: Banks need to implement and announce sufficient security measures like two-factor authentication and data encryption to alleviate concerns among students regarding privacy and fraud.
- Peer and Social Influence: Promotional campaigns need to leverage peer referrals, student ambassadors, and campus influencers to leverage subjective norms that shape student behavior.
- Educational Campaigns: Schools and service providers need to organize workshops, webinars, and e-financial literacy modules to educate students on how to use e-payment systems safely and efficiently.
- Incentive-Based Engagement: Student-led promotions, offers, and rewards for using e-payment platforms can propel initial adoption and regular usage.
- Policy and Institutional Support: Universities should make available e-payment options in all their student services (e.g., library fines, cafeteria purchase) and partner with trusted providers to make available total and secure payment facilities within the campus.

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