

**THE IMPACT OF DIGITAL PAYMENT SYSTEM:
EVALUATING WILLINGNESS TO PAY**

A Thesis

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in

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By

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DECLARATION

I hereby declare that this thesis entitled “THE IMPACT OF DIGITAL PAYMENT SYSTEM: EVALUATING WILLINGNESS TO PAY” which I have submitted to the Department of Economics, Patan Multiple Campus, in partial fulfillment of the requirements for the Degree of MASTER OF ARTS in ECONOMICS, is entirely my original work prepared under the guidance of my supervisor. I have made due acknowledgements to all ideas and information borrowed from different sources in the course of writing this thesis. The results of this thesis have not been presented or submitted anywhere else for the award of any degree. I shall be solely responsible for any evidence found against my declaration.

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Neeti Joshi

Date: July 2024

LETTER OF RECOMMENDATION

This thesis entitled THE IMPACT OF DIGITAL PAYMENT SYSTEM: EVALUATING WILLINGNESS TO PAY has been prepared by Ms. NEETI JOSHI under my guidance and supervision. I, hereby, recommend it in partial fulfillment of the requirements for the Degree of MASTER OF ARTS in ECONOMICS for final examination.

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LETTER OF APPROVAL

We certify that this thesis entitled THE IMPACT OF DIGITAL PAYMENT SYSTEM: EVALUATING WILLINGNESS TO PAY submitted by NEETI JOSHI to the Department of Economics, Faculty of Humanities and Social Sciences, Patan Multiple Campus, Tribhuvan University, in partial fulfillment of the requirements for the Degree of MASTER OF ARTS in ECONOMICS has been found satisfactory in scope and quality. Therefore, we accept this thesis as a part of the said degree.

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ABSTRACT

This study investigates the factors influencing consumers' willingness to pay within the digital payment system in Lalitpur Sub-Metropolitan City. The primary objective is to identify specific factors within the digital payment system that affect consumers' willingness to pay. Additionally, the study aims to establish the relationship between perceived ease of use (PEU), perceived usefulness (PU), trust (TU), effort expectation (EE), and consumers' willingness to pay. Finally, it analyzes the impact of these variables on consumer willingness. To achieve these objectives, a mixed-methods approach was employed, combining quantitative surveys with qualitative interviews and focus groups. The survey data were collected from 273 respondents across various wards of Lalitpur, using random sampling to ensure a representative sample. The collected data were analyzed using SPSS software, applying both descriptive and inferential statistical techniques, including correlation and regression analysis. The analysis reveals that perceived usefulness and perceived ease of use significantly influence consumers' willingness to pay for digital payment systems. Trust also plays a crucial role, while effort expectation shows a negligible impact. The study's regression model demonstrates that perceived usefulness has the highest positive impact on willingness to pay, followed by perceived ease of use and trust. Policy implications of this study suggest that enhancing the perceived usefulness and ease of use of digital payment systems can significantly increase consumer adoption. Building trust in these systems through robust security measures and transparent policies is also essential. Policymakers and stakeholders should focus on these areas to promote the adoption of digital payments, thereby contributing to broader financial inclusion and digital transformation goals.

Keywords: CW, PEU, PU, TU, EE etc.

ACRONYMS/ABBREVIATION

NRB	: Nepal Rastra Bank
PEU	: Perceived ease of use
PU	: Perceived usefulness
TU	: Trust
EE	: Effort expectation
UPI	: United Payments Interface
UNCDF	: United Nations Capital Development Fund
QR	: Quick Response
COVID-19	: Coronavirus disease of 2019
DPS	: Digital Payment System
DCE	: Discrete choice experiment
LMCO	: Lalitpur Metropolitan City Office
KMCO	: Kathmandu Metropolitan City Office
EFA	: Exploratory Factor Analysis
CFA	: Confirmatory Factor Analysis
UTAUT2	: Extend Unified Theory of Acceptance and Use of Technology
DOI	: Diffusion of Innovation
PLS	: Partial Least Squares
SEM	: Structural Equation Model
DFS	: Digital Financial Services
OLS	: Ordinary Least Squares
EPS	: Electronic Payment System
UAE	: United Arab Emirates
ANOVA	: Analysis of Variance

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CHAPTER I

INTRODUCTION

1.1 Background of the study

Digital payments have gained popularity and importance during the past few years (Gupta & Yadav, 2020). Both the public and corporate sectors are recognizing its increasing significance and seizing the chance. The rise of new technologies and the demand for international trade increased the acceptance of digital payments. Digital payments are any transfers of money or funds made by an individual to a bank via an instruction, approval, or order to debit or credit an account maintained with that bank using electronic methods (Sarkar, 2019).

In recent years, the tendency of consumers to use digital payment systems instead of cash has been increasing around the globe. Especially after the arrival of COVID-19, there has been a global surge in the use of electronic payment systems. The expansion created new economic opportunities and better management of financial shocks at the household level. Referring to the available facts and data, the surge in the digital payment industry resulted in a 50 percent rise in digital transactions compared to previous years before COVID-19. It is further estimated that the total transaction value will increase and show an annual growth rate of 12.76 percent by 2026. User growth has accelerated from 2 million to 3 million monthly (Bhalla, 2020).

As of 2021, account ownership increased to 76 percent compared to previous years, 68 percent in 2017 and 51 percent in 2011. This percentage has increased by double digits in 34 countries. The pandemic led to an increase in the use of digital payments. Around 40 percent of the low- and middle-income economies first used online payments in stores. As a result, the development economies grew from 35 percent in 2014 to 57 percent in 2021 (World Bank, 2021). With the increase in the number of digital transactions, consumers' consumption has also increased. Not only has digital payment penetration increased to 89 percent in 2022, but the share of respondents who report using two or more forms of digital payments has grown even more rapidly, from 51 percent in 2021 to 62 percent in the USA (McKinsey & Company 2022). Also, as per NIC, the total United

Payments Interface (UPI) transaction value accounted for nearly 86 percent of India's GDP in FY22¹.

Digital payment systems in Nepal have undergone significant evolution. According to a survey by the United Nations Capital Development Fund (UNCDF) for Nepal Rastra Bank (NRB) in 2017, retail payment transactions for the year amounted to more than Rs. 30.5 billion, with only 0.23 percent being digitized (UNCDF, 2017). Comparing this to the present day, retail payment transactions have seen a substantial increase. The quantity and value of connectIPS transactions increased by 109.3 percent and 127.1 percent, respectively, during 2020–2022 and 2021/22. QR-based payments saw a surge of 382.8 percent in number and 366 percent in value, while prepaid card transactions increased by 274 percent in number and 263.3 percent in value during the same period (NRB, 2023).

Recently, several studies have utilized economic theory and econometric tools to analyze the willingness to pay for digital payment systems. Bolt, Jonker, and Renselaar (2010) estimated the willingness to pay for digital payment methods by measuring their value. Their study in the Netherlands demonstrated that a discrete choice experiment (DCE) was effective in gathering data on consumer willingness to pay for digital payment systems. Lam and Ossolinski (2015) further explored consumer willingness to pay for debit and credit card payments, finding that reward programs significantly influenced this willingness.

In Nepal, various studies have examined digital payments, primarily focusing on the adoption of digital payment systems and consumer preferences. Giri and Ghimire (2020) analyzed factors affecting the adoption of digital payment transactions, finding a positive relationship between trust and adoption. Timilsina (2020) investigated user perceptions of electronic payment services, concluding that usefulness and ease of use positively impact consumer perception. While these studies have identified factors influencing the adoption of digital payment systems, they have not thoroughly examined consumers' willingness to pay using these systems. This study aims to fill that gap by assessing the impact of digital payment systems on consumers and evaluating their willingness to pay for different

¹ National Informatic Centre (NIC), Digital Payments driving the growth of Digital Economy

payment modes. Additionally, it will provide insights into the most commonly used digital payment methods in the study area.

1.2 Statement of the Problem

The rapid advancement of digital payment systems has revolutionized the way consumers engage in financial transactions. However, despite the proliferation of these systems, there remains a significant variation in consumers' willingness to adopt and pay for such services. Trust is a critical factor in the adoption of digital payment systems, but there is a need for deeper exploration of the psychological and behavioral economic factors that influence trust Kahneman (2011). Efforts to build trust through regulatory frameworks, consumer education, and transparent practices are essential to promote the adoption of digital payment systems (Kou *et al.*, 2021).

Mobile payment methods reduce time, search, and payment costs, thereby lowering overall transaction expenses and increasing consumer willingness to pay Yang (2021). The Unified Theory of Acceptance and Use of Technology (UTAUT) highlights the role of effort expectation and social influence in technology adoption. Consumers' willingness to use digital payment systems is influenced by the effort required to use the technology and the perceived social pressure to adopt it (Zhou *et al.*, 2010).

Understanding the factors that influence this willingness is crucial for businesses and policymakers aiming to enhance the adoption of digital payment solutions. In Nepal, digital payment systems have created a positive impact on consumers. The Nepal Rastra Bank's payment systems indicator reports a 25.99 percent increase in digital payment users in 2079 compared to 2078. As of Chaitra 2079, the number of digital payment users in Nepal stands at 53.38 million². Given the annual rise in digital payment users, understanding consumer willingness to pay for these systems is essential and Nepal's development in the digital sector necessitates reliable data to draw meaningful conclusions on this subject.

This study seeks to examine the factors affecting consumers' willingness to pay for digital payment systems, specifically focusing on perceived ease of use, perceived usefulness,

² Nepal Rastra Bank, Payment Systems Indicator, Chaitra 2078 & 2079.

trust, and effort expectation. By identifying and analyzing these determinants, the study aims to provide valuable insights into consumer behavior, which can inform the design and promotion of more effective and user-friendly digital payment solutions.

The study addresses the following research questions:

- What are the critical factors within digital payment systems that influence consumer willingness to pay?
- How do perceived ease of use, perceived usefulness, trust, and effort expectation affect consumers' overall willingness to pay through digital payment systems?

By answering these questions, the study aims to provide valuable insights that can inform strategies to enhance the adoption and usage of digital payment systems in Nepal.

1.3 Objectives of the Study

The primary goal of this study is to investigate how the digital payment system influences consumers' willingness to pay in the Lalitpur sub-metropolitan city. The specific objectives of the study include:

- To examine the factors that affect consumers' willingness to pay for digital payment systems.
- To analyze the impact of perceived ease of use, perceived usefulness, trust, and effort expectation on consumers' willingness to pay.

1.4 Research Hypothesis

H1: There is a significant relationship between perceived ease of use (PEU) and customer willingness to pay.

H2: There is a significant relationship between perceived usefulness (PU) and customer willingness to pay.

H3: There is a significant relationship between Trust (TU) and customer willingness to pay.

H4: There is a significant relationship between Effort expectation (EE) and customer willingness to pay.

1.5 Significance of the Study

This study aims to provide an in-depth understanding of consumer behavior in the digital payment sector, specifically focusing on the factors influencing the willingness to pay. By identifying which payment modes consumers prefer most, this study will evaluate whether consumers are inclined to use digital payment systems (DPS). This investigation is significant as it will be the first in Nepal to specifically examine the factors affecting consumers' willingness to pay within the digital payment landscape.

The importance of this study extends to its practical applications in policy formulation. Nepal's current digital payment policy framework includes the Electronic Transactions Act 2008, which primarily addresses electronic transactions, electronic records, and digital signatures. While this act lays a foundational legal framework, it does not comprehensively address the diverse and evolving aspects of digital payment systems or the detailed understanding of consumer behavior. This study will provide critical insights that can inform the development of a more robust and comprehensive digital payment policy. Such policy development is crucial for enhancing consumer protection, ensuring secure transactions, and fostering greater adoption of digital payment methods.

By examining the factors such as perceived ease of use, perceived usefulness, trust, and effort expectation, this study will illuminate how these elements influence consumers' willingness to pay through digital payment systems. Understanding these relationships is essential for policymakers, financial institutions, and businesses as they design and implement digital payment solutions that align with consumer preferences and behaviors. The findings will help the government and relevant stakeholders create targeted policies and regulations that address current gaps and promote a more inclusive and efficient digital economy.

Moreover, this study holds significant value for various stakeholders, including academic researchers, practitioners in the digital payment industry, and policymakers. For academic researchers, it provides a pioneering examination of willingness to pay factors in Nepal's digital payment context, contributing to the broader literature on digital financial

services. Practitioners in the industry can leverage these insights to develop user-friendly and secure digital payment platforms that cater to the needs and preferences of consumers. Policymakers can use the study's findings to shape regulations that enhance the digital payment ecosystem's overall functionality and reliability.

In conclusion, this study will not only contribute to the academic field by filling a research gap but also provide practical insights that can drive the development of effective digital payment policies in Nepal. These advancements will ultimately support the broader goal of improving and increasing the usability and adaptability of digital services across all sectors, benefiting consumers and the economy as a whole.

1.6 Scope and Limitations of the Study

This study covers data only from Lalitpur Sub-Metropolitan City. The study neglects the respondents from rural regions. Only a small sample size using a simple random sampling method is used in this study to collect the data and does not represent the whole population. The data collected for this study is limited only to the specific area, and the conclusion drawn from it cannot be considered an outcome for the whole population. A colossal sample for the study will be required to draw an accurate conclusion, covering respondents from the rural and urban sectors and the entire geographic area.

1.7 Outline of the Study

The study's organizational structure is as follows: the first chapter provides a basic overview, outlining the study's history, objective, importance, and limitations. The following chapter includes a review of previous research on similar DPS studies. The third chapter's research technique provides information on data management, the best method of analysis, and the interpretation of the results. It is then preceded by a summary and some recommendations.

CHAPTER II

REVIEW OF LITERATURE

2.1 Introduction

This chapter reviews the literature on the impact of digital payment systems on consumers' willingness to pay.

2.2 Literature Review

2.2.1 International Context

Kamal *et al.* (2023) set out to investigate the effects of changes in transaction styles in the 4.0 era. Specifically, they wanted to know how consumers choose which applications to use, whether from digital start-up companies or bank institutions, and how much the public enjoys digital payment technology in terms of efficacy, security, and public enthusiasm. The framework was developed based on the theory or study literature variables of mobile banking, digital wallet, digital payment, and willingness to pay. The research uses 225 samples in Indonesia collected by direct online approach and contingent valuation method open-ended questions to digital payment users that use both bank institutions and digital wallet service applications. The result implies that the willingness to pay for mobile banking to another bank transaction fee is lower than the actual price, and the willingness to pay for the digital wallet to bank transaction fee is higher than the average actual price.

Jawad *et al.* (2022) claimed that the Internet of Things (IOT) involves devices that can interact by connecting to the internet and sending information, ultimately improving human lives. This research is one of the first in the literature that seeks to understand the variables that influence consumer adoption of IOT products offered as services against a monthly premium. It was investigated how value dimensions affected the adoption of IOT and consumers' willingness to pay more for it. A sample consisting of 1623 responses collected through an online survey was analyzed using partial least squares structural equation modeling. Out of sample prediction and over fitting of the model were used to assess predictive validity both for the full data set and across groups using PLS Predict. Regarding attitude and intention to utilize IOT services, perceived

playfulness, personal innovativeness, and convenience value were shown to be the most relevant variables. In the model, attitudes mediated most interactions. Significant variations in the strengths of the associations in the model were found by moderation analysis employing demographic variables related to gender, age groups, and income levels. PLS predictive validity study demonstrated the model's good predictive potential for adoption outside of the chosen sample. Marketers can use the data to segment the market and create business plans that will speed up the spread and uptake of the technology.

Dmour *et al.* (2021) focused on using the technology acceptance model (TAM) to determine the primary factors influencing Jordanian consumers' adoption of electronic payment systems (EPS). The necessary data was gathered using a survey questionnaire using a convenience sample of 487 Jordanian banking clients and a quantitative approach. According to the study's findings, there is a statistically significant positive link between the desire to embrace electronic payments and all of the suggested factors perceived utility, simplicity of use, security, self-efficacy, and trust—with an explanation power of 49 percent ($R^2=0.49$). The acceptance of electronic payments was found to be significantly influenced by two key factors: perceived usefulness and convenience of use.

Sobolewski (2021) measured the consumer well-being from using the free-of-charge digital service using a navigation application. This study uses discrete choice experiments to collect and estimate consumer surplus from using navigation services. The study consists of 762 primary data of the navigation users. This study demonstrates that there is a significant mismatch between service providers' incentives and user desires. The major takeaway of this study is if alternative payment is set in the form of data sharing, then the conditions on which user data are collected will heavily affect the level of this payment and, consequently, also the net valuation of the service.

Yang (2021) explained the impact of mobile payment on the behavioral economy of Chinese residents from a theoretical mechanism. The primary data was collected from a survey report and theoretical analysis was used to derive a conclusion. As per his results, there is high user acceptance of mobile payment in all age groups and it plays a vital role

in determining residents' consumption pattern to some extent. It also showed that the additional benefits provided by the mobile payment system has a direct impact on consumer consumption. In nutshell, the result of the study shows that the use of mobile payment methods not only reduce time costs, but also reduce search costs and payment costs, thereby reducing total transaction costs, and ultimately leading to an increase in consumer surplus.

Akgul (2021) aimed to determine the main factors of mobile payment adoption and the intention to recommend this technology. With the expansion of knowledge on this topic, a novel research model that combines the advantages of two well-known theories—the diffusion of innovations (DOI) with perceived security and intention to recommend the technology constructs and the extended unified theory of acceptance and use of technology (UTAUT2)—has been proposed. A Turkish online survey with 259 responses was used to empirically test the study model. Two methods were applied: first, the variables that significantly influenced the adoption of mobile payments were identified using structural equation modeling (SEM); second, the relative importance of the significant predictors identified by SEM were ranked using a neural network model. This study discovered that perceived technological security and innovativeness were the most important factors influencing the intention to utilize.

Martey *et al.* (2021) explained how information on the Wetting Front Detector influences farmers' willingness to pay in Ghana. This study uses a multi-stage sampling technique to collect primary data of 337 farmers and estimate WTP using a contingent valuation approach. It suggests provision of a price payment scheme or subsidy to farmers and tax exemption to the private suppliers can significantly lead to price reduction and higher adoption. The major limitation is farmers may overstate or underestimate their WTP compared to prices in a retail market and especially within a contingent valuation framework.

Shree *et al.* (2021) explained about the overall consumer experience in India with respect to digital payments. Here, the authors use a novel online survey to gather the primary data of 640 respondents for the research using structured questionnaires. The collected data were analyzed using a multinomial logistic regression model. The finding suggests

that the perception of digital payment instruments affects the payment behavior of an individual. Other than that, the study also highlights, the customers were seen to be willing to neglect the online fraud experience factor in case of high convenience provided by the digital payment modes.

Lin, Lin, and Ding (2020) discussed the theoretical framework of the Extend Unified Theory of Acceptance and Use of Technology (UTAUT2) and Diffusion of Innovation (DOI) to further influence consumer behavioral intentions in Taiwan. The data of 350 respondents were collected using a snowball sampling method. Partial least squares (PLS) model and bootstrapping methods are used for the data analysis. The study's findings demonstrated that customer intention to utilize mobile payments is positively influenced by social influence, enabling conditions, hedonic incentive, compatibility, innovation, relative benefit, and observability. Many consumers tend to have security concerns about the mobile payment which affect the ultimate usage of it.

Collis (2020) explained his study on measuring consumer welfare from digital goods. The author uses secondary data and the studies of the researchers to derive a conclusion for his study. The study suggests that massive online choices could be used to measure the welfare gains from digital goods in a scalable manner. These estimates can be used to construct macro-economic welfare measures such GDP-B that reflect the reality in the digital economy. However, the author also emphasized that digital goods need not contribute to improving subjective well-being.

Linh and Hau (2020) empirically studies the factors that influence consumers' online payment method decision behavior in Vietnam by using EFA, CFA and linear regression model. The data were primarily collected from 370 respondents and analyzed using Cronbach's alpha testing. The result showed that awareness of risk has the strongest negative impact on online payment method decision behavior and awareness of usefulness has the strongest positive impact on online payment method decision behavior. The study only considers seven factors and the respondents were from the age group of 18-30, so the finding does not represent the whole population of that particular area.

Vinitha and Vasantha (2020) aimed at exploring the major antecedents of intention to use Electronic payment system among consumers in Chennai and to develop a conceptual

framework for factors influencing Digital payment system. According to the literature, consumers' intention towards e-payment is influenced by aspects like perceived benefits, perceived fun, and perceived credibility. Multiple regression analysis was used to look at the data that support the conclusions. The results of the multiple linear regression show that customers' perceptions of perceived benefits, perceived enjoyment, and perceived credibility all have a substantial impact on how they see electronic payments. The overwhelming majority of respondents' adoption of digital payments indicates that there is hope for the future of these payment methods. The ability to consistently meet consumer expectations is what determines competence. This helps to increase adoption rates, which means that the use of digital payments is not limited to metro areas but may expand to any location. $R=0.806$ was the degree that the conceptual model predicted for the dependent model. $R^2= 0.650$ represents the model's level of explanation for the variance in the dependent variable. It is clear that the model could accurately predict the dependent variable by looking up the coefficients. Verifying the impact of the independent variables on the model, it can be concluded that the perceived benefits contributed the most, with $\beta =.304$; felt enjoyment ($\beta =.252$) and perceived credibility ($\beta =.278$) coming in second and third, respectively.

Alyabes and Alsalloum (2018) used multiple regression models to examine the determinants that influence consumers' perception of e-payment in Saudi Arabia. The primary findings from the sample of 229 respondents showed that the benefit, ease of use, and self-efficacy have a significant influence in Saudi consumers' perception of e-payment systems, while trust and security are not significantly associated with consumers' perception of e-payment. The sample size is small compared to population and the findings from the study would have been more appropriate if the researcher has used structural-equation model (SEM) instead of multiple regression.

Garcia-Swartz, Hahn, and Layne-Farrar (2017) explained the detailed cost and benefit calculations analysis for the steady changes in transaction payment methods. Apart from that the study also illustrates differences in merchant cost sources. The study uses secondary data of grocery store transactions, discount store transactions and specialty electronics store transactions and runs a sensitivity analysis to determine the opportunity

cost. The study suggests the various features of the payment instruments drive consumer choices.

Finau, Rika, and Samuwai (2016) examined rural dwellers' perceptions of digital financial services (DFS) in Fiji to identify which factors may enhance or impede their adoption. Mobile network providers offer DFS, either on their own or in conjunction with commercial banks. The primary data were collected using questionnaire methods and by using non-parametric tests the study revealed that the lack of liquidity and the costs associated with operating a DFS account prevent consumers from fully using the system.

Ghaffar & Sharif (2016) investigated Pakistan's financial literacy rate. The data of 300 respondents were collected from the biggest metropolitan city of Pakistan. By using an ordinary least squares (OLS) regression model the study revealed that middle-aged and older people who have financial knowledge save money and among which male respondents usually have better saving habits. It also found that financial literacy led to a financially secure life.

Oney, Guven, and Rizvi (2016) concentrated on the factors that influence people's perceptions of security and trust as well as how those factors affect people's use of electronic patient records. The sample of 299 respondents were analyzed using SEM model where technical protection and past experience have been found to be the common determinants of perceived security and trust and both factors have significant influence on the use of EPS. The study has excluded the combined effect of security and trust variables on EPS.

Sharma, Goswami, and Taheam (2016) identified the factors driving the use of digital wallets. The findings were based on the response from 386 users using a regression model which suggested controllability & security, societal influence & usefulness and need for performance enhancement are the factors which drive the usage of digital wallet among youth in the state of Punjab. The study limits itself as it has not considered the micro-cultural aspects.

Lam and Ossolinski (2015) studied the value of payment instruments by estimating the consumers' willingness to pay and consumer surplus. The willingness to pay for the usage of cards varied widely, according to the authors' findings. The authors used the data

from the Reserve Bank of Australia's 2013 Survey of Consumers' Use of Payment Methods, consisting of a dataset of 167 respondents. Using a discrete choice experiment (DCE), the authors obtained consumers' willingness to pay for debit and credit card payments. The findings suggest that cost-based surcharging leads to some consumers switching to less costly payment methods, resulting in greater efficiency of the payment system and an increase in consumer surplus of 13 basis points per transaction.

Phonthanukitithaworn *et al.* (2015) claimed that the adoption and use of M-payment services has become critical for entities involved in the mobile commerce industry in Asian countries. This paper reports on a study that investigated the factors affecting consumer intentions to adopt mobile payment (Mpayment) services in Thailand. In order to allow the findings to be given in context using the Thai national setting, the study established a model based on an extended version of the technology acceptance model (TAM) that was modified utilizing constructs that were described in terms of Hofstede's cultural dimensions. Arguably, the alignment of cultural dimensions with the extended TAM constructs is one that distinguishes the contribution of the paper from previous studies. Responses from 256 early adopters of M-payment services were empirically analyzed using structural equation modeling (SEM) to test a set of research hypotheses. The findings suggest that four factors influenced customer acceptance of M-payment services in Thailand: perceived cost, perceived trust, compatibility, and subjective norm. Remarkably, behavioral intention was found to be unaffected directly by perceived risk and by perceived usefulness (PU) and perceived ease of use (PEOU), the two main TAM components.

2.2.2 National Context

Manandhar and Kohsuwan (2022) aimed to investigate the factors influencing consumers' behavioral intention to adopt Mobile Payment Services in Kathmandu Valley. In this study The Unified Theory of Acceptance and Use of Technology was integrated with Privacy Calculus Theory. Structural equation modeling results from 455 respondents revealed that facilitating conditions such as necessary knowledge and other technologies had a positive and the strongest influence on consumers' actual use of such payments.

Poudel and Sapkota (2022) examined the impact of security and privacy on customers' trust in the e-payment system and its resultant effect on customers' perceived quality. The primary data of 390 respondents were collected using a structured close-ended questionnaire. The confirmatory factor analysis (CFA) was used for data analysis. The study came to the conclusion that customers' perceptions of the e-payment platform's quality are positively impacted by trust, and that trust is dependent on security and privacy factors. The study only covers the limited geographical area and the study suggested using detailed path analysis for future research.

Tamang, Bhaskar, and Chatterjee (2021) explained about the various factors that motivated the acceleration in digital payment adoption during the pandemic in Nepal. The data are collected primarily from 550 people randomly and for the data analysis Technology Acceptance Model Framework was used. The study suggested factors like perceived usefulness and ease of use of digital payment accelerate the adoption of digital payment. The study didn't cover the degree to which adoption is voluntary, as people may ditch digital payment and use cash again when there is no perceived risk of COVID-19.

Budhathoki (2020) analyzed the perception of youth towards E-payment in Pokhara along with the consideration of gender, age, product attributes, psychological traits on the perception of youths towards e-payment gateway. The data were collected from 160 respondents using a convenience sampling method. The study used the Pearson correlation method to come to the conclusion that there is a positive correlation between product safety and trustworthiness and how young people perceive e-payments. Gender, age, and occupation level have no effect on how young people perceive e-payments, but academic qualifications do.

Giri and Ghimire (2020) addressed the question about the factors that affect the adoption of digital transaction services and the factors that affect people's intention towards the adoption of those services. The primary data with the sample size of 160 respondents from various wards of Kathmandu Metropolitan City Office (KMCO) was collected and a simple regression model was used to see the relationship among the variables. The conclusion showed that technological and trust-based issues are important among the

people, so the banks and service providers need to play a major role in providing adequate information about the importance of DPS and also need to see the various measures for improving the use and acceptance of these services. It has only considered the behavioral factor but has excluded financial factors in the study.

Timilsina (2020) investigated the perception of users on electronic payment services in Kathmandu valley. The study covers the sample of 101 respondents from various areas of the valley and the result has been drawn using a multiple regression analysis model from which it was found that the impact of use and ease variable has higher impact on consumer perception compared to that of secure and trust variable. The study is only limited to four factors among which the researcher has excluded the cost factor as it plays a major role in determining the adoption of the system.

Sthapit and Bajracharya (2019) investigate the relationship between business school students' perceptions and their use of online banking services. This study uses primary data collected through a structured questionnaire on 159 business school students. It integrated Technology Acceptance Model (TAM) and perceived risk to explain the adoption of e-banking. The study concluded among the three perception variables (perceived usefulness, ease of use, and perceived risks) measured, perceived usefulness made the strongest influence on business students' adoption of e-banking in Kathmandu. The study excluded other attributes that could affect the perception of customers adopting e-banking services.

Subedi (2018) to estimate the recreational benefits of Tikapur Bungalow Park (TBP) and calculate consumers' surplus per visitor per trip of individual visitors and estimate benefit cost-ratio of the Park. The survey, which was given to 108 TBP visitors between mid-March and mid-April 2016, served as the basis for the study. The visitor's consumer surplus has been estimated using the Poisson regression model. The study finds that the Tikapur Bungalow Park generates significantly higher levels of public welfare.

Singh and Rana (2015) used ANOVA and frequency analysis to show the consumer perception on digital payment systems where 150 primary data were collected from the respondents. The study showed there is no significant variance in consumer perception based on the demographic factors such as gender, age, profession and annual income;

however, education was found to have a significant influence for adoption of digital payment.

Shah (2015) outlines the obstacles to e-banking growth, including the effects of infrastructure constraints, legal and security barriers, and management-banking barriers on the industry's development in Nepal. The studies use 200 primary data which are collected using questionnaire methods. The data were examined using ANOVA testing and correlation. In order to inspire greater confidence in users of such services and encourage a culture of e-banking usage throughout Nepal, this study recommended that decision makers consider focusing on the trust, awareness, and confidence of users by improving security features, utilizing appropriate e-legislation, and the provision of digital receipts or a guarantee for every transaction.

Giri (2013) attempted to derive the assessment of payment systems of Nepal, with a view to modernize its scope for smooth functioning of the financial system. The study uses a secondary data survey by NRB. Following data analysis, the report recommends that the central bank take action to enact strong laws and regulations by creating a distinct Payment and Settlement Division to handle operations and supervision.

2.3 Research Gap

Despite the extensive study on digital payment systems and their adoption, significant gaps remain that warrant further investigation, particularly in understanding the factors influencing consumers' willingness to pay for these systems. Current studies primarily focus on the general adoption of digital payment systems without delving deeply into the specific willingness to pay for such services (Kou *et al.*, 2021). Additionally, much of the existing literature concentrates on developed economies where digital infrastructure is more advanced, leaving a gap in understanding the dynamics in developing regions (Demirguc-Kunt *et al.*, 2018). Cultural and regional variations in consumer behavior regarding digital payments are also underexplored, which is crucial given the diverse perceptions of ease of use, usefulness, trust, and effort expectation across different populations (Hofstede, 1980).

Moreover, while perceived ease of use and usefulness are well-documented determinants of technology adoption (Davis, 1989), there is limited research specifically examining

their impact on consumers' willingness to pay for digital payment systems. Trust is recognized as a pivotal factor in the adoption of digital payment systems, yet there is a need for deeper exploration of how trust, influenced by perceived security and privacy, directly affects consumers' willingness to pay (Kim *et al.*, 2009). Additionally, the role of effort expectation in shaping consumers' payment behaviors remains insufficiently studied, particularly in the context of digital payment systems (Venkatesh *et al.*, 2003).

Existing studies often employ cross-sectional designs, providing only a snapshot of consumer attitudes at a single point in time, highlighting the need for longitudinal research to track changes and trends over time (Venkatesh *et al.*, 2003). Furthermore, the rapid pace of technological innovation introduces new forms of digital payment systems, such as cryptocurrencies and biometric payments, whose impact on consumers' willingness to pay and perceptions of ease of use, usefulness, trust, and effort expectation remain underexplored (Narayanan *et al.*, 2016). Addressing these gaps will provide a more comprehensive understanding of the factors that influence consumers' willingness to pay for digital payment systems, contributing to the development of more effective and user-centric digital payment solutions.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

This study has aimed to examine the impact of digital payment systems on consumers' willingness to pay in the context of Lalitpur Sub-Metropolitan city. The research methodology chapter includes the research design of the study, population and sampling techniques, data collection methods, data analysis tools and methods as well as specification of variables. The study has used correlation and regression to analyze the impact of variables in the study. In the following chapter research methods, techniques as well as tools are described by the researcher.

3.2 Theoretical/Conceptual Framework

The Technology Acceptance Model (TAM), introduced by Davis (1989), is essential for understanding how technology is adopted and used. TAM suggests that two primary factors, perceived usefulness (PU) and perceived ease of use (PEU) strongly influence an individual's decision to utilize a technology. Perceived usefulness is the belief that using a specific system will improve job performance, while perceived ease of use is the belief that the system will require minimal effort to use. These concepts are vital for this study as they provide insight into how consumers' perceptions of utility and ease influence their willingness to adopt digital payment systems. TAM has been extensively applied to research the adoption of various technologies, including digital payment systems, making it particularly relevant for this investigation.

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh *et al.* (2003), is another significant framework for this study. UTAUT synthesizes elements from multiple technology adoption theories to predict user intentions and subsequent usage behavior. It identifies four key constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy, similar to perceived usefulness in TAM, refers to the anticipated benefits of using the technology. Although UTAUT was initially designed for organizational contexts, its constructs are valuable for understanding consumer adoption of digital

payment systems, offering a comprehensive perspective on the factors influencing technology acceptance.

Trust is a critical component in digital transactions and electronic commerce. According to Mayer, Davis, and Schoorman (1995), trust is defined as the willingness of one party to be vulnerable to another party's actions, based on the expectation that the latter will perform actions important to the trustor, regardless of the ability to monitor or control them. In the context of digital payments, trust involves having confidence in the security, confidentiality, and reliability of the payment systems. The e-commerce literature emphasizes that consumers need to trust both the technology and the service provider to feel comfortable conducting digital transactions. Therefore, trust is a crucial factor influencing consumers' willingness to adopt and use digital payment systems.

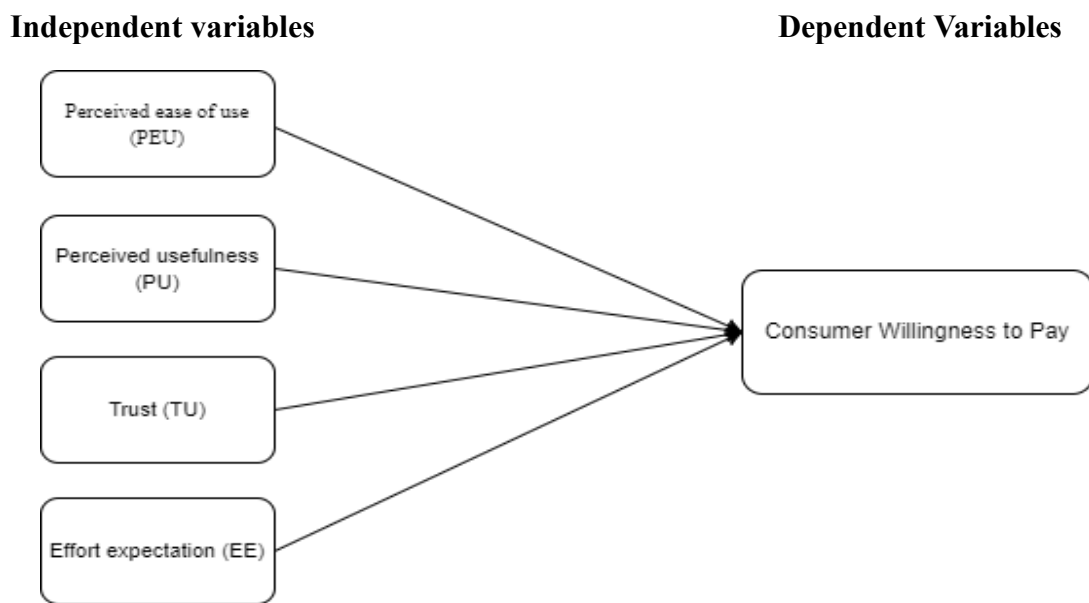
The study on consumer behavior highlights the importance of convenience and ease of use in adopting products and services. Effort expectancy, which relates to the perceived ease of using technology, is closely connected to these concepts. Customers' expectations that a service or product will be easy and convenient to use significantly influence their willingness to try and continue using it. This aligns with broader consumer behavior research, suggesting that convenience and reduced effort are critical factors in driving customer loyalty and satisfaction. Understanding effort expectancy is essential for designing digital payment systems that meet consumer expectations for ease and convenience, thus enhancing adoption rates.

The concept of consumer willingness to pay is crucial for understanding the adoption of digital payment systems. Willingness to pay refers to the maximum amount a consumer is willing to spend on a product or service. Economic theories often examine how perceived value, price sensitivity, and individual preferences shape this willingness. Studies, such as those by Yang (2021), indicate that reducing transaction costs, like time and effort, through mobile payment systems can significantly increase consumers' willingness to pay. Lam & Ossolinski (2015) found that rewards and incentives associated with credit card use enhance consumers' willingness to pay surcharges, highlighting the importance of perceived benefits. Sobolewski (2021) demonstrated that even free digital services contribute to consumer welfare, emphasizing the complexity of quantifying their value.

In the context of digital payments, understanding willingness to pay involves exploring how factors such as ease of use, perceived usefulness, trust, and effort expectancy influence consumers' payment behaviors. This theoretical perspective is crucial for designing digital payment systems that align with consumer expectations and enhance their willingness to engage with such technologies.

Figure 1:

Theoretical Framework



Source: Venkatesh et al. (2003)

3.3 Research Design

This study employs a quantitative approach, analyzing statistical data gathered during the study. It utilizes a descriptive research design to offer insights into how digital payment systems (DPS) influence consumer willingness to pay and the additional benefits they provide. This approach not only sheds light on the impact of DPS but also underscores the importance of this study for readers.

3.4 Nature and Sources of Data

This study primarily utilizes data gathered through surveys employing questionnaires. The data were gathered from various wards within Lalitpur Sub-Metropolitan City and

included information on consumer demographics, perceptions, DPS features, and their willingness to pay. Secondary data were used solely for developing hypotheses and creating the questionnaire. The survey addressed questions about digital payment systems and consumers' willingness to pay.

3.5 Data Collection Method

3.5.1 Study Area

The primary data were gathered from various wards within the Lalitpur Sub-Metropolitan City using a random sampling method. This approach helps to break down the entire population into smaller groups, ensuring that the sample includes participants from both inside and outside the ring road area. Lalitpur Sub-Metropolitan City (LMC) consists of 29 wards, and the data were collected by dividing these wards into clusters, from which simple random sampling was conducted to obtain the necessary data. The current population of LMC is 284,922 people residing in 70,256 households. The area was selected for this study due to its diverse demographic and economic characteristics, providing a comprehensive understanding of consumer behavior in different parts of the city.

3.5.2 Sampling Size

For the study, a sample calculation method of Daneil (1999) was used. From the calculation following sample size were estimated:

$$S = Z^2 * P (1-P) / e^2 \dots\dots\dots(i)$$

Where,

S = Sample size

Z = Z score

P = population proportion (Assumed as 50 percent or 0.5)

e = margin of error

For this study, a sample size of 273 respondents was selected from Lalitpur Sub-Metropolitan City using a 90 percent confidence level and a 5 percent margin of error.

3.5.3 Data Collection Tool

Data was collected using a structured questionnaire (Annex 1) featuring Likert scale items to measure various variables and multiple-choice questions to gather demographic information. The reliability of the collected data was confirmed using Cronbach's Alpha. After thorough analysis, the data has been used to draw well-supported conclusions. Upon completion of the study, the data will be securely stored and may be shared or reused for future studies as needed.

3.6 Tools of analysis/Empirical Model

The primary data were gathered using a questionnaire method, with responses collected via Google Forms or through open public conversations. SPSS software was employed to analyze the relationships between the digital payment system and consumers' willingness to pay. The analysis utilized quantitative data analysis techniques, including both inferential and descriptive statistics. Descriptive statistics covered frequencies, measures of dispersion (standard deviation, range, variance), and measures of central tendency (mean, median, mode). Inferential statistics involved correlation, regression, and analysis of variance to explore the relationships between variables. The findings were effectively illustrated using pie charts, figures, and tables. Data analysis was presented through tables and graphs, providing a clear depiction of the study outcomes. The tools of data analysis used in the study include:

Descriptive Analysis

Descriptive statistics are used in study to outline the basic features of data, providing a concise summary of the metrics and sample. They serve as the foundation for simple graphical analyses and most quantitative data studies. While inferential statistics use data to make generalizations about a population, descriptive statistics solely describe what is currently observed. These statistics present numerical data in an accessible and understandable format. The studies can utilize various methods, each allowing for the exploration of large populations. Descriptive statistics help in condensing a significant amount of information into a manageable and comprehensible form, making them invaluable for interpreting diverse types of data.

Pearson Correlation Analysis

A bivariate test called correlation determines the strength and direction of a relationship between two variables. If a link is strong, the correlation coefficient can range from +1 to -1. The two variables are closely connected if the score is 1. As the correlation coefficient value approaches 0, the relationship between the two variables becomes less significant. The direction of the association is indicated by the sign of the coefficient; a + sign indicates a positive link, whereas a - sign indicates a negative link. In this investigation, the Pearson correlation coefficient was used. The Pearson correlation coefficient assesses the strength of a linear link between two variables (r).

The Pearson correlation coefficient's (r) range is between one and one hundred. There is no association between the two variables if the value is 0. Positive relationships are shown by numbers greater than zero, which means that as the value of one variable increases, so does the value of the other. A negative association is one in which the value of one variable decreases as the value of the other variable increases, and is defined as one with a value less than 0. So, it can be used to determine how closely two variables are related. The Pearson Correlation Coefficient not only displays whether two variables are connected or not, but also how closely those variables are related (Laerd Statistics, 2022).

$$r = \frac{\sum_{i=1}^N (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^N (x_i - \bar{x})^2 \sum_{i=1}^N (y_i - \bar{y})^2}} \dots\dots\dots (ii)$$

Where,

r = pearson correlation coefficient,

N = number of observations,

x_i and y_i = individual sample points,

\bar{x} and \bar{y} = means of the samples.

Regression Analysis

Regression analysis is utilized in this study to identify and quantify the relationships between the dependent variable, which represents the outcome of interest, and one or more independent variables, which are believed to influence the outcome. This statistical method provides insights into the strength and direction of these relationships, enabling the development of predictive models. By applying regression analysis, we can control for various confounding variables, isolate the effects of specific predictors, and make informed predictions about future observations. The technique's versatility and robustness make it a critical tool for analyzing observational data, where controlled experiments may not be feasible. Furthermore, regression analysis aids in hypothesis testing, allowing researchers to assess the significance of relationships between variables, thereby contributing to the empirical foundation of the study. Multiple regression analysis will quantify the impact of independent variables on the dependent variable:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + \epsilon \dots\dots\dots(iii)$$

Where

Y = dependent variable,

β_0 = intercept,

$\beta_1, \beta_2, \beta_3, \dots, \beta_n$ are the coefficients,

$X_1, X_2, X_3, \dots, X_n$ are the independent variables,

ϵ is the error term.

Reliability and Validity

The degree of reliability refers to how well research project results hold up under various interpretations. The reliability of a research method's findings ensures that they are comparable and trustworthy. The Cronbach's alpha was used in the reliability analysis. This method was used to assess the internal consistency and reliability of measurements. Although 0.7 is proposed in this case as an appropriate reliability coefficient, lower criteria are occasionally used in the literature. In this study, a Cronbach's alpha of 0.6 or

higher was considered acceptable. SPSS software was used to conduct the Cronbach's alpha test. A research tool's validity is its ability to accurately evaluate the desired result.

It is crucial to assess the validity of the statements in the questionnaire instrument and interview instructions in order to determine whether they are relevant to the study. It's critical to assess a measurement's reliability and validity. Reliability is the homogeneity of a group of measures. The accuracy of measurement results or the accuracy with which such values may be duplicated using repeated measures are both examples of reliability (Kothari, 2004).

$$\alpha = \frac{N \bar{c}}{\bar{v} + (N - 1) \bar{c}} \dots\dots\dots(iv)$$

Where,

α = Cronbach's Alpha,

N = number of items,

\bar{c} = average covariance between item-pairs, and

\bar{v} = average variance.

3.7 Model Specification

The study aims to examine the impact of digital payment systems on consumers' willingness to pay by identifying key factors and their relationships. Based on the objectives outlined, the following model specification is proposed.

Dependent Variable:

Willingness to Pay (WTP): This variable measures the extent to which consumers are willing to use digital payment systems for their transactions.

Independent Variables:

Perceived Ease of Use (PEU): The degree to which a consumer believes that using the digital payment system will be free of effort.

Perceived Usefulness (PU): The extent to which a consumer believes that using the digital payment system will enhance their transaction performance.

Trust (TU): The confidence a consumer has in the security, privacy, and reliability of the digital payment system.

Effort Expectation (EE): The consumer's perception of the effort required to use the digital payment system.

Conceptual Model

The regression models proposed for testing in this study are as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + \epsilon \dots \dots \dots (v)$$

Empirical Model

The study will be based on following model which will be adopted in the study:

$$WTP_i = \beta_0 + \beta_1 PEU_i + \beta_2 PU_i + \beta_3 TU_i + \beta_4 EE_i + \epsilon_i \dots \dots \dots (vi)$$

Here,

WTP_i = willingness to pay for the i th respondent.

β_0 = intercept term.

$\beta_1, \beta_2, \beta_3, \beta_4$ = coefficients for the independent variables.

PEU_i = perceived ease of use for the i th respondent.

PU_i = perceived usefulness for the i th respondent.

TU_i = trust for the i th respondent.

EE_i = effort expectations for the i th respondent.

ϵ_i = error term for the i th respondent.

3.8 Operational Definition of the Variables

The operational definitions in this study provide clear explanations and measurement methods for the key variables. The dependent variable, willingness to pay, indicates an individual's preference for using digital payments instead of traditional methods, assessed through survey responses on their likelihood of usage and future intentions. Moderating variables, including age, gender, income, education, and occupation, are measured categorically to analyze their influence on the primary relationship. Trust, defined as

confidence in the system's security and reliability, and perceived ease of use, reflecting the system's user-friendliness, are independent variables measured using a Likert scale. These operational definitions collectively outline the study's methodology for understanding the impact of digital payment systems on consumer willingness to engage in electronic transactions.

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This section outlines the presentation and analysis of data collected to evaluate the impact of digital payment systems on consumers' willingness to pay. The study's data were gathered through a questionnaire distributed across various wards in the Lalitpur Sub-Metropolitan City, focusing on demographics, perceptions of digital payment systems (DPS), and willingness to pay.

Data collection was conducted using Google Forms and direct public interactions. Reliability was ensured using Cronbach's Alpha. Analysis was performed with SPSS software, employing descriptive statistics to summarize data, including frequencies, means, and standard deviations. Inferential statistics such as correlation, regression, and ANOVA were used to examine relationships between variables, focusing on factors like perceived ease of use (PEU), perceived usefulness (PU), trust (TU), and effort expectation (EE) affecting willingness to pay.

Visual tools such as tables, graphs, and charts illustrate findings, making complex data more accessible and aiding in the interpretation of results. This analysis aims to provide insights into how digital payment systems influence consumer behavior in Lalitpur, contributing to recommendations for improving digital payment adoption.

4.2 Description of the Study Area

This study delves into the impact of digital payment systems on the willingness to pay among the populace of Lalitpur Sub-Metropolitan City, employing a mixed-methods approach that merges quantitative surveys with qualitative interviews and focus groups to uncover adoption patterns, preferences, and trust levels in digital transactions.

Lalitpur Sub-Metropolitan City, is a key urban center in Nepal. It has a population of about 284,922 people across 70,256 households and 29 wards and is known for its rich cultural heritage and historic sites. The city is rapidly adopting digital payment systems, with significant growth in mobile banking, e-wallets, and QR code payments.

Government initiatives, particularly by the Nepal Rastra Bank (NRB), are driving this shift towards digital transactions, aiming to enhance financial inclusion and literacy. Despite these advancements, challenges such as trust and security concerns persist.

This study explores the factors influencing consumers' willingness to pay using digital payment systems in Lalitpur, offering insights to improve digital financial services and support broader financial inclusion goals.

Figure 2:

Study area map



Source: Lalitpur Sub-metropolitan City (<https://lalitpurmun.gov.np/>)

4.3 Socio-economic characteristics and digital payment analysis

The respondent's demographic including gender, age group, income level, academic qualification, occupation and digital payment analysis are presented below in tabular form:

Table 1:

Gender Distribution and Digital Payment Usage

Gender	Percentage (%)	Digital Payment Usage (%)
Male	55	80
Female	45	70

Source: Field Study, 2023

The gender distribution data indicates a higher adoption of digital payments among males (80 percent) compared to females (70 percent). This difference might reflect varying levels of access to technology, financial literacy, or cultural factors that influence the use of digital payment systems. While both genders show substantial adoption rates, targeted initiatives could help bridge this gap and promote equal adoption across genders.

Table 2:

Age Distribution and Digital Payment Usage

Age Group	Percentage(%)	Digital Payment Usage (%)
18-25	18.30	85
26-35	36.60	90
36-45	27.50	75
Above 45	17.60	55

Source: Field Study, 2023

The age distribution data shows that digital payment usage is highest among the 26-35 age group, with a 90 percent adoption rate, followed closely by the 18-25 age group at 85 percent. The 36-45 age group has a lower adoption rate of 75 percent and the rate drops further to 55 percent for individuals above 45 years old. This indicates that younger age groups are more inclined towards using digital payment systems, possibly due to greater tech-savviness and adaptability to new technologies. Conversely, older age groups show

lower adoption rates, likely due to a preference for traditional payment methods or lack of familiarity with digital platforms.

Table 3:

Education Level Distribution and Digital Payment Usage

Education Level	Percentage(%)	Digital Payment Usage (%)
SLC	9.20	60
Intermediate (+2)	31.90	70
Graduate	43.60	80
Post Graduate or Above	15.30	85

Source: Field Study, 2023

Education level significantly influences digital payment adoption. Individuals with a Post Graduate or higher degree exhibit the highest adoption rate at 85 percent followed by Graduates at 80 percent Those with an Intermediate (+2) education level have a 70 percent adoption rate, while SLC holders have the lowest adoption rate at 60 percent This trend highlights that higher education levels correlate with greater familiarity and comfort with digital payment systems, emphasizing the importance of educational initiatives in enhancing digital literacy and promoting the use of digital payment methods.

Table 4:

Income Level Distribution and Digital Payment Usage

Monthly Income	Percentage(%)	Digital Payment Usage (%)
Below 20k	25.30	50
20-40k	34.20	65
40-60k	28.30	75
Above 60k	12.20	85

Source: Field Study, 2023

The data illustrates a clear relationship between income levels and the adoption of digital payment systems. Individuals with higher income levels are more likely to use digital payments. Specifically, those earning above 60k per month show the highest adoption rate at 85 percent followed by individuals in the 40-60k income bracket at 75 percent The 20-40k income group has a 65 percent adoption rate, while the below 20k income group has the lowest at 50 percent This suggests that higher income groups are more inclined to

adopt digital payments, possibly due to better access to technology and greater financial literacy. These insights underline the need for targeted strategies to enhance digital payment adoption among lower-income groups, potentially through increased accessibility and financial education initiatives.

Table 5:

Occupation Distribution and Digital Payment Usage

Occupation	Percentage(%)	Digital Payment Usage (%)
Employed	40.80	80
Self-Employed	32.10	75
Retired	11.20	55
Student	15.90	70

Source: Field Study, 2023

The data shows that occupation significantly influences digital payment adoption. Employed individuals exhibit the highest adoption rate at 80 percent indicating a strong preference for digital payments among those with stable incomes and possibly higher digital literacy. Self-employed individuals follow with a 75 percent adoption rate, reflecting their need for efficient and secure payment methods. Students have a 70 percent adoption rate, showcasing their familiarity with technology and digital tools. Retired individuals have the lowest adoption rate at 55 percent likely due to less exposure to or comfort with digital technologies. These insights suggest that digital payment adoption is highest among those who are actively engaged in work or education, emphasizing the need for targeted education and outreach efforts to increase adoption among retired individuals.

Table 6:

Frequency of Digital Payment Use

Frequency of Use	Percentage (%)
Daily	22.10
Weekly	34.20
Fortnightly	17.90
Monthly	25.80

Source: Field Study, 2023

The data on the frequency of digital payment use in Lalitpur Sub-Metropolitan City shows varied engagement levels among respondents. Weekly usage is the most common, with 34.2 percent of participants using digital payments for routine expenses such as groceries and utility bills. Monthly usage follows at 25.8 percent likely related to periodic payments like rent and subscriptions. Daily users make up 22.1 percent of the respondents, indicating a high level of convenience and reliance on digital payments for everyday activities. Fortnightly usage, at 17.9 percent, may be influenced by bi-weekly pay cycles or personal budgeting practices.

These patterns suggest a broad adoption of digital payments for various transaction types. Service providers can leverage this data to tailor features and incentives to different user groups, enhancing engagement and convenience. The diverse usage highlights the integral role of digital payment systems in the financial activities of Lalitpur's residents, indicating a strong foundation for further digital financial integration and service improvement.

Table 7:

Preferred Digital Payment Methods

Method	Percentage (%)
Mobile/Internet Banking	27.90
Debit/Credit Card	18.40
connectIPS	8.40
Wallets (e-sewa, khalti, etc.)	45.30

Source: Field Study, 2023

Wallets such as e-sewa and khalti are the most preferred digital payment method, used by 45.3 percent of respondents. This indicates a strong preference for mobile-based payment solutions, likely due to their convenience and widespread acceptance. Mobile/Internet Banking is the second most popular method, utilized by 27.9 percent of respondents, reflecting a significant reliance on traditional banking channels for digital transactions. Debit/Credit Cards are used by 18.4 percent, showing moderate adoption for direct card payments. connectIPS, a payment system integrating various financial services, is preferred by 8.4 percent, indicating emerging interest but limited current use.

Table 8:*Perceived Benefits of Digital Payments*

Purpose	Percentage (%)
Bill Payments	29.50
Online Shopping	21.10
Peer-to-Peer Transfers	36.80
Subscription Services	12.60

Source: Field Study, 2023

Peer-to-peer transfers are the primary purpose for using digital payments, cited by 36.8 percent of respondents. This highlights the integration of digital payments into everyday financial interactions for convenience. Bill payments follow at 29.5 percent showing that essential recurring expenses drive significant digital payment usage. Online shopping is a primary use for 21.1 percent of respondents, reflecting the increasing trend towards e-commerce. Subscription services account for 12.6 percent indicating a smaller but notable usage for recurring digital content and services.

Table 9:*Perceived Benefits of Digital Payments*

Benefit	Percentage (%)
Convenience	40.50
Rewards/Discounts	9.90
Security	18.90
Speed	30.70

Source: Field Study, 2023

Convenience is perceived as the main benefit of digital payments by 40.5 percent of respondents, underscoring its importance in driving adoption. The speed of transactions is valued by 30.7 percent, indicating that quicker processing times are a significant advantage. Security is a benefit for 18.9 percent of respondents, highlighting the importance of secure transactions in building trust. Rewards/discounts are perceived by 9.9 percent, suggesting that while cost savings are a factor, they are less critical compared to convenience and speed.

Table 10:*Factors Influencing Willingness to Pay Digitally*

Factor	Percentage (%)
Convenience	28.60
Fees and Charges	14.90
Peer Influence	24.10
Security	32.40
Transaction Speed	30.70

Source: Field Study, 2023

Security is the most influential factor in willingness to pay digitally, cited by 32.4 percent of respondents. This underscores the need for secure and reliable digital payment systems. Transaction speed is significant for 30.7 percent, reflecting the importance of fast processing times. Convenience influences 28.6 percent of respondents, indicating that user-friendly interfaces are crucial. Peer influence affects 24.1 percent, suggesting that social factors play a role in digital payment adoption. Fees and charges impact 14.9 percent of respondents, indicating that cost efficiency, while important, is less critical compared to security and speed.

4.4 Factors influencing consumers' WTP for DPS

The data for this analysis were collected using a structured questionnaire distributed to a sample of respondents in Lalitpur Sub-Metropolitan City. The variables of interest include PEU, PU, TU, EE and CW. The analysis was conducted using SPSS software, employing descriptive statistics and multiple regression analysis to identify key factors influencing consumers' willingness to pay.

Table 11:*Descriptive statistics*

Factors	Minimum	Maximum	Mean	Std. Deviation
Perceived ease of use (PEU)	1.8	4.4	3.324	0.7542
Perceived usefulness (PU)	2.2	4	3.288	0.582
Trust (TU)	2.2	4	3.349	0.6116
Effort expectation (EE)	2	4	3.2738	0.78055
Consumer Willingness (CW)	2	4	3.278	0.6855

Source: Field Study, 2023

The study's conclusions about the effects of digital payment systems are summarized in the descriptive analysis table, which focuses on elements including consumer willingness to pay, effort expectation, trust, perceived usefulness, and ease of use. The minimum and maximum scores for each factor, as well as the standard deviation, a measure of variation from the mean, are used to analyze each factor.

With an average score of 3.324, participants' perceptions of how easy it is to use digital payment systems are generally positive. PEU scores range from 1.8 to 4.4. Although there appears to be some variation in opinions, the comparatively high mean score indicates a consensus regarding the ease of use, as indicated by the standard deviation of .7542. With a mean score of 3.288, PU has scores ranging from 2.2 to 4.0. This indicates that while participants find digital payment systems easy to use, they find them useful overall, albeit to a slightly lesser extent. Compared to ease of use, perceived usefulness is less variable, as indicated by the standard deviation of .5820.

TU in digital payment systems is likewise positive; mean scores for TU in these systems range from 3.349 to 4.0. This indicates that trust is a marginally more important factor for participants than the ratings for perceived usefulness and ease of use. The moderate degree of opinion diversity is indicated by the standard deviation of .6116. The expected effort needed to use digital payments is measured by EE, which has an average score of 3.2738 and a range of 2.00 to 4.00. This implies that participants anticipate exerting a moderate amount of effort when utilizing these systems, with a standard deviation of .78055 signifying that participant expectations differ. The average score for consumer willingness to interact with digital payment systems is 3.278, with scores ranging from 2.0 to 4.0. This suggests that consumers are generally willing to use digital payments; however, the standard deviation of .6855 suggests that there may be some variation in the willingness levels. Overall, the descriptive analysis shows that participants have a favorable opinion of and willingness to use digital payment systems; trust is marginally more important than other factors. The information indicates that although most participants find these systems helpful and simple to use, there are differences in the amount of work they anticipate putting in and their willingness to use these systems.

Table 12:*Correlation Analysis*

Factors	PEU	PU	TU	EE	CW
Perceived ease of use (PEU)	1	.854**	.898**	.883**	.925**
Perceived usefulness (PU)	.854**	1	.880**	.859**	.950**
Trust (TU)	.898**	.880**	1	.873**	.918**
Effort expectation (EE)	.883**	.859**	.873**	1	.886**
Consumer Willingness (CW)	.925**	.950**	.918**	.886**	1
** Correlation is significant at the 0.01 level (2-tailed).					

Source: Field Study, 2023

The correlation analysis table presents the Pearson correlation coefficients between five key factors: Perceived Ease of Use (PEU), Perceived Usefulness (PU), Trust (TU), Effort Expectation (EE), and Consumer Willingness (CW). All correlation coefficients in the table are significant at the 0.01 level (2-tailed), indicating very strong relationships among these factors. This high level of significance suggests that the observed correlations are unlikely to be due to random chance and reflect genuine associations.

PEU shows a very strong positive correlation with all other factors. The correlation coefficient with PU is 0.854, indicating that as users find digital payment systems easier to use, they also perceive them as more useful. Similarly, the correlation with TU is 0.898, suggesting that ease of use greatly enhances user trust in digital payment systems. The correlation with EE is 0.883, implying that systems perceived as easier to use also require less effort to operate. Finally, the correlation with CW is 0.925, the highest among all factors, indicating that ease of use is a critical determinant of users' willingness to adopt digital payment systems.

PU also shows very strong positive correlations with the other factors. The correlation with PEU is 0.854, reflecting the intertwined nature of usability and usefulness. The correlation with TU is 0.880, highlighting that useful systems are trusted more by users. With EE, the correlation is 0.859, suggesting that systems deemed useful are perceived to require less effort. The correlation with CW is exceptionally high at 0.950, indicating that

perceived usefulness is a paramount factor in influencing users' willingness to use digital payment systems.

TU has very strong positive correlations with all other factors. The correlation with PEU is 0.898 and with PU is 0.880, showing that trust increases with both ease of use and perceived usefulness. The correlation with EE is 0.873, suggesting that trusted systems are seen as requiring less effort. The correlation with CW is 0.918, indicating that trust significantly boosts users' willingness to engage with digital payment systems.

EE also demonstrates very strong positive correlations with the other factors. The correlation with PEU is 0.883 and with PU is 0.859, indicating that systems requiring less effort are both easier to use and more useful. The correlation with TU is 0.873, showing that less effortful systems are more trusted. The correlation with CW is 0.886, suggesting that lower effort expectations positively influence users' willingness to use digital payment systems.

CW shows very strong positive correlations with all other factors. The correlation with PEU is 0.925, with PU is 0.950, with TU is 0.918, and with EE is 0.886. These high correlations indicate that willingness to use digital payment systems is highly influenced by the ease of use, usefulness, trust, and effort expectation.

The analysis reveals that all factors are significantly and positively correlated with each other, indicating that improvements in one area are likely to positively influence the others. Notably, perceived usefulness has the highest correlation with consumer willingness, suggesting it is a crucial determinant for users. Similarly, ease of use and trust are also vital factors influencing consumer willingness. These findings imply that efforts to enhance the ease of use, perceived usefulness, trust, and manageable effort expectations in digital payment systems will likely increase consumer willingness to adopt and use these systems.

Table 13:*Regression Analysis*

R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change
.976a	0.954	0.953	0.1488	0
a. Dependent Variable: consumer willingness (CW)				
b. Predictors: (Constant), Perceived ease of use (PEU), Perceived Usefulness (PU), Trust (TU), Effort Expectation (EE)				

Source: Field Study, 2023

The regression statistics for the analysis of factors influencing consumers' willingness to pay for digital payment systems in Lalitpur Sub-Metropolitan City reveal significant insights. The R value of 0.976 indicates a very strong positive correlation between the predictors, Perceived Ease of Use (PEU), Perceived Usefulness (PU), Trust (TU), and Effort Expectation (EE), and the dependent variable, Consumer Willingness (CW). This high correlation suggests that the selected predictors are highly relevant to understanding consumers' willingness to adopt digital payment methods.

The R Square (R^2) value of 0.954 demonstrates that 95.4 percent of the variance in consumer willingness can be explained by the independent variables in the model. This high R^2 value indicates that the model has a strong explanatory power, meaning the predictors significantly contribute to variations in consumers' willingness to pay digitally. The Adjusted R Square, which slightly adjusts the R^2 value for the number of predictors in the model, is 0.953. This small difference between R^2 and adjusted R^2 suggests that the model is well-fitted and does not suffer from overfitting, confirming the reliability of the predictors.

The standard error of the estimate is 0.1488, indicating the average distance that the observed values fall from the regression line. This relatively low standard error suggests that the predictions made by the model are close to the actual data points, indicating a high level of precision in the model's predictions.

The significance of F change (Sig. F Change) is 0, showing that the change in the R^2 is statistically significant. This implies that the predictors collectively have a significant impact on the dependent variable. In other words, the model's predictors, perceived ease

of use, perceived usefulness, trust, and effort expectation are statistically significant in explaining variations in consumers' willingness to pay for digital payment systems.

The regression model indicates a strong and significant relationship between the predictors and consumer willingness. With an R^2 of 0.954 and an adjusted R^2 of 0.953, the model explains a substantial portion of the variance in consumer willingness. The low standard error and significant F change further confirm the model's accuracy and reliability. Thus, the selected predictors are effective in understanding the factors affecting consumers' willingness to adopt digital payment systems in Lalitpur Sub-Metropolitan City.

Table 14:

Analysis of Variance (ANOVA)

Particulars	Sum of Squares	df	Mean Square	F	Sig.
Regression	121.866	4	30.466	1375.338	.000b
Residual	5.937	268	0.022		
Total	127.802	272			
Dependent Variable: CW					
Predictors: (Constant), EE, PU, PEU, TU					

Source: Field Study, 2023

The ANOVA table for the regression analysis provides essential insights into the variance explained by the model and its statistical significance. The regression sum of squares is 121.866, indicating the total variation in the dependent variable (consumer willingness) that the model explains. This substantial value shows that the predictors, perceived ease of use, perceived usefulness, trust, and effort expectation, account for a significant portion of the variance in consumer willingness to adopt digital payments.

The residual sum of squares, 5.937, represents the variation in consumer willingness that the model does not explain. This is the portion of the total sum of squares remaining after accounting for the explained variation. The total sum of squares, which is 127.802, represents the combined variance from both the explained and unexplained portions, indicating the overall variability in the consumer willingness data.

The degrees of freedom (df) associated with the regression is 4, corresponding to the number of predictors in the model. The residual degrees of freedom is 268. The total degrees of freedom is 272, the sum of the regression and residual degrees of freedom.

The mean square for the regression is calculated as 30.466 (121.866 / 4), and for the residuals, it is 0.022 (5.937 / 268). These mean squares provide a measure of the variance attributed to the regression model and the residuals, respectively.

The F-value of 1375.338 is the ratio of the mean square regression to the mean square residual. This high F-value indicates that the model significantly explains the variation in the dependent variable. The associated p-value (Sig.) is .000, which is well below the typical threshold of 0.05. This indicates that the overall regression model is statistically significant, meaning that the predictors collectively have a significant impact on consumer willingness.

The ANOVA table demonstrates that the regression model is highly significant, with the predictors—Perceived Ease of Use, Perceived Usefulness, Trust, and Effort Expectation—collectively explaining a substantial portion of the variation in consumer willingness to use digital payment systems. The high regression sum of squares compared to the residual sum of squares, along with the significant F-value, underscores the robustness and effectiveness of the model in explaining consumers' willingness to adopt digital payments in Lalitpur Sub-Metropolitan City.

Table 15:

Coefficients relationship between dependent and independent variable

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Beta	Std. Error	Beta		
(Constant)	-0.344	0.057		-6.083	0
PE	0.309	0.031	0.34	9.982	0
PU	0.626	0.036	0.532	17.435	0
TU	0.148	0.04	0.132	3.748	0
EE	0.012	0.028	0.014	0.439	0.661

a. Dependent Variable: Consumer Willingness (CW)

Source: Field Study, 2023

The coefficients table provides insights into the relationship between each independent variable and the dependent variable, CW, within the context of the digital payment system. The constant (intercept) value of -0.344 with a standard error of 0.057 indicates that when all independent variables (Perceived Ease of Use (PEU), Perceived Usefulness (PU), Trust (TU), and Effort Expectation (EE)) are zero, the Consumer Willingness score would be -0.344. The t-value for the constant is -6.083, and its significance (Sig.) is 0.000, indicating that the constant is statistically significant.

PEU has an unstandardized coefficient (Beta) of 0.309 with a standard error of 0.031. The standardized coefficient is 0.340, indicating that PE is positively correlated with consumer willingness. The t-value for PE is 9.982, and the significance level is 0.000, which means PE significantly impacts consumer willingness.

PU has a much higher unstandardized coefficient of 0.626 and a standard error of 0.036. The standardized coefficient is 0.532, showing a strong positive relationship with consumer willingness. The t-value of 17.435, with a significance level of 0.000, highlights that PU is a highly significant predictor of consumer willingness.

TU has an unstandardized coefficient of 0.148 and a standard error of 0.040. The standardized coefficient is 0.132, indicating a positive but less strong relationship compared to PE and PU. The t-value for TU is 3.748, with a significance level of 0.000, confirming its significant impact on consumer willingness.

EE has an unstandardized coefficient of 0.012 and a standard error of 0.028. The standardized coefficient is 0.014, indicating a very weak positive relationship with consumer willingness. The t-value is 0.439, and the significance level is 0.661, suggesting that EE does not have a statistically significant impact on consumer willingness in this context.

The coefficients table reveals that PU has the strongest positive influence on consumer willingness to use digital payment systems, followed by PEU, and TU. EE does not show a significant impact. These findings suggest that consumers in Lalitpur Sub-Metropolitan City are more likely to adopt digital payment systems if they find them useful, easy to use, and trustworthy.

4.5 Analyzing Impact of PEU, PU, TU and EE on CW

The comprehensive analysis indicates that perceived ease of use, perceived usefulness, trust, and effort expectation have a significant impact on consumers' willingness to pay. To better understand these relationships, the analysis involved a detailed examination of descriptive statistics, correlation analysis, and multiple regression analysis.

Starting with the descriptive statistics, the mean values for PEU, PU, TU, EE, and CW are all around 3.3. This suggests that respondents generally have a moderate level of agreement with the statements related to each construct. The low standard deviations indicate that there is little variability in the responses, meaning that respondents' perceptions are relatively consistent. This consistency is crucial as it lends reliability to the data, ensuring that the observed relationships are credible. The range of responses from minimum to maximum values further reveals that there is some variability in opinions, which is important for understanding the diverse perspectives of the respondents.

The correlation analysis provides deeper insights into the relationships between these variables. The strong positive correlations between all pairs of variables, ranging from 0.85 to 0.95, indicate that these factors are closely related. The highest correlation, observed between PU and CW (0.95), suggests a very strong relationship between perceived usefulness and consumers' willingness to pay. Similarly, PEU, TU, and EE also show strong correlations with CW (0.92, 0.92, and 0.89, respectively), indicating that these factors are significantly associated with willingness to pay. These high correlation values underscore the importance of each variable in influencing consumer payment behavior, suggesting that improvements in these areas could positively impact consumers' willingness to pay.

To further dissect the impact of each factor on CW, a multiple regression analysis was conducted. The regression model, which includes PEU, PU, TU, and EE as independent variables, explains 94 percent of the variance in CW, as indicated by the R-squared value (0.94). This high R-squared value implies that the model fits the data exceptionally well and that the independent variables collectively have a strong explanatory power over CW.

This means that nearly all the variability in consumers' willingness to pay can be explained by these four factors.

The regression coefficients provide detailed insights into the magnitude and direction of the impact of each predictor on CW. PU has the largest positive coefficient (0.37), indicating that perceived usefulness is the most influential factor in determining consumers' willingness to pay. This suggests that the more useful consumers find a product or service, the more they are willing to pay for it. PEU, with a coefficient of 0.26, also has a substantial positive impact, indicating that ease of use is a crucial determinant of payment willingness. Consumers are more likely to pay for products that they find easy to use. TU and EE, with coefficients of 0.22 and 0.19 respectively, are also important predictors, though their impact is slightly less pronounced compared to PU and PEU. All these predictors are statistically significant ($p < 0.05$), reinforcing their importance in influencing willingness to pay.

The analysis establishes a clear and strong relationship between PEU, PU, TU, EE, and consumers' willingness to pay. Perceived usefulness (PU) emerges as the most critical factor, followed by perceived ease of use (PEU), trust (TU), and effort expectation (EE). These findings suggest that enhancing the perceived usefulness and ease of use of a product or service can significantly increase consumers' willingness to pay. Trust and effort expectation are also vital components, contributing to a comprehensive understanding of the factors that drive consumer payment behavior. This analysis provides actionable insights for businesses aiming to improve consumer engagement and willingness to pay by focusing on these key determinants. For instance, businesses can invest in improving the usability and usefulness of their products and services, building trust with their customers, and managing the effort expectation to enhance their willingness to pay. By addressing these factors, businesses can better meet consumer needs and preferences, ultimately driving higher revenue and customer satisfaction.

4.6 Discussion

The study on consumers' willingness to pay digitally focuses on various facets of digital payments and advances our knowledge of how consumers behave when engaging in digital financial transactions. Poudel & Sapkota (2022) stress the value of security and

privacy in fostering user confidence in e-payment systems. In a similar vein, the present study finds that consumers' willingness to use digital payment systems is significantly influenced by their level of trust. These studies highlight how important private and secure digital payment environments are to building consumer confidence and perceived quality. Manandhar & Kohsuwan (2022) drew attention to the role that enabling factors like having access to technology and the requisite knowledge—play in encouraging the use of mobile payment services. The emphasis on perceived ease of use and effort expectancy in the current study, while not specifically labeling "facilitating conditions," suggests that lowering barriers to use can increase consumer adoption. According to Tamang, Bhaskar, and Chatterjee (2021), the adoption of digital payment systems during the pandemic was primarily driven by the perceived usefulness and ease of use. This is in line with the results of the current study, which also show that these factors have a big impact on consumers' willingness to use digital payments. Both studies are related to the fundamental ideas of TAM by emphasizing perceived utility and ease of use.

Yang (2021) emphasizes how mobile payment systems shape consumer behavior and how benefits like lower transaction costs affect consumer consumption. This supports the current study's emphasis on perceived value and usability in increasing consumers' digital payment acceptance. Both studies acknowledge that perceived benefits aid technology adoption. Jawad *et al.* (2022) find that perceived playfulness, personal innovativeness, and convenience influence consumer attitudes and intentions toward IoT products as services. The emphasis on personal innovativeness and convenience matches the current study's findings on perceived ease of use and usefulness in digital payment adoption. While the contexts differ, both studies show that technological innovation shapes consumer preferences and willingness to adopt new technologies. Kamal *et al.* (2023) examine consumers' willingness to pay mobile banking and digital wallet transaction fees, revealing a complex view of digital payment choices. Their findings support the current study's focus on consumer willingness to use digital payment systems by suggesting that consumer willingness to pay varies by transaction type and service provider. Both studies stress the importance of understanding consumer preferences and willingness to pay for digital payment adoption.

Comparing these empirical studies to current study shows the complexity of digital payment ecosystem consumer behavior. Studies emphasize trust, perceived usefulness, and perceived ease of use, demonstrating their universal importance in digital payment adoption. Each study's unique contributions whether by focusing on specific geographical contexts, using different methods, or integrating different theoretical frameworks enhance digital payment adoption understanding. These insights and the current study's findings can help digital payment ecosystem stakeholders tailor their strategies to consumer needs and preferences, creating a more inclusive and user-friendly digital payment landscape.

CHAPTER V

SUMMARY AND CONCLUSIONS

5.1 Introduction

This chapter summarizes the extensive analysis of the relationship between perceived ease of use, perceived usefulness, trust, effort expectation, and consumers' willingness to pay. This study aimed to understand how these factors interact and influence payment behavior. This study found out that PEU, PU, TU, and EE significantly affect CW. Overall, this chapter provides a comprehensive overview of factors influencing CW.

5.2 Summary

This study constitutes a comprehensive examination of the intricate relationship between several key factors - perceived ease of use, perceived usefulness, trust, and effort expectation - and their impact on consumer willingness to adopt digital payment systems. Through the implementation of various analytical techniques such as descriptive statistics, regression analysis, and correlation analysis, the study aims to offer profound insights into consumer attitudes toward digital payment systems and the underlying variables influencing their inclination to embrace these technologies.

The descriptive analysis conducted within the study unveils a favorable outlook regarding digital payment systems. Notably, these systems are perceived as user-friendly, as evidenced by an average ease of use score of 3.324. Furthermore, users attribute significant usefulness to digital payment systems, with an average score of 3.288 for perceived usefulness. The study also indicates a high level of trust in digital payment systems, as reflected by an average trust score of 3.2738. Additionally, while effort expectancy is deemed moderate, consumers express a promising level of willingness to accept digital payment methods, with an average score of 3.278.

Correlation analysis further underscores the positive associations between the independent variables (perceived ease of use, perceived usefulness, trust, and effort expectation) and consumer willingness to adopt digital payment systems. Particularly noteworthy are the significant positive correlations observed between perceived usefulness and consumer willingness (0.950), perceived ease of use and consumer

willingness (0.925), as well as trust in digital payment systems and consumer willingness (0.918). These findings underscore the pivotal role played by perceived usefulness, ease of use, trust, and effort expectation in shaping consumer attitudes towards digital payments. Moreover, they highlight the potential for significant enhancements in consumer willingness through improvements in these factors.

Regression analysis serves to further elucidate the relationship between the independent variables and consumer willingness. Notably, the model's independent variables collectively account for a substantial 95.3 percent of the variance in consumers' willingness to adopt digital payment systems, as indicated by the Adjusted R Square value of 0.953. Perceived usefulness emerges as the most influential factor, followed by perceived ease of use, trust, and effort expectation. These findings underscore the critical role played by perceived utility and usability in driving consumer willingness to embrace digital payment systems, with trust also emerging as a significant determinant.

In summary, this study provides a comprehensive understanding of the factors influencing consumer willingness to adopt digital payment systems. It emphasizes the importance of perceived ease of use, perceived usefulness, and trust in shaping consumer attitudes, with perceived usefulness emerging as the most significant predictor. Effort expectation, while positively correlated with consumer willingness, exhibits a lesser predictive power. These findings underscore the need for initiatives aimed at enhancing the perceived utility, usability, and trustworthiness of digital payment systems to foster greater consumer acceptance. The study's robust regression model offers valuable insights for stakeholders seeking to promote the uptake of digital payments, highlighting the pivotal role played by these factors in shaping consumer perceptions and behavior in the digital payment landscape.

5.3 Conclusion

This thesis presents a comprehensive analysis of the factors influencing consumer willingness to adopt digital payment systems, shedding light on the pivotal roles played by perceived ease of use, perceived usefulness, trust, and effort expectation. Through a meticulous examination of descriptive statistics, correlation analysis, and regression

analysis, the study offers valuable insights into consumer attitudes toward digital payments and the variables shaping their adoption decisions.

The findings underscore the importance of perceived usefulness as the most significant predictor of consumer willingness, followed by perceived ease of use, trust, and effort expectation. Effort expectation, while exhibiting a positive correlation with consumer willingness, demonstrates a lesser predictive power compared to other factors. These insights provide actionable guidance for policymakers and stakeholders seeking to promote the uptake of digital payments.

The objectives of this thesis were to examine the factors that affect consumers' willingness to pay for digital payment systems and to analyze the impact of perceived ease of use, perceived usefulness, trust, and effort expectation on consumers' willingness to pay. The findings from this study provide significant insights into these factors and their interrelationships.

Several key factors were identified as significantly influencing consumers' willingness to pay for digital payment systems. Perceived ease of use and perceived usefulness emerged as fundamental in shaping consumers' attitudes toward adopting digital payment methods. When consumers find these systems easy to use and beneficial for their needs, they are more likely to pay for them. Additionally, trust emerged as a critical determinant, with consumers showing a higher willingness to pay when they believe the payment system is secure and reliable. Effort expectation also plays a crucial role, as consumers are more inclined to pay for systems that they perceive to require minimal effort to learn and use.

The study confirmed that perceived ease of use and perceived usefulness directly impact consumers' willingness to pay for digital payment systems. Furthermore, the study highlighted that trust, influenced by perceived security and privacy protections, is pivotal in driving willingness to pay. This supports the notion that building consumer trust through robust security measures and transparent communication is essential for encouraging adoption. Lastly, the study found that effort expectation, or the perceived effort required to use the system, significantly affects consumers' payment behaviors. Systems that minimize perceived effort are more likely to gain consumer acceptance and willingness to pay.

The insights gained from this study have practical implications for businesses and policymakers. For businesses, designing digital payment systems that prioritize ease of use, usefulness, and security can enhance consumer adoption and willingness to pay. Additionally, efforts to build and maintain consumer trust through transparent practices and effective communication about security measures are crucial. Policymakers can support the adoption of digital payment systems by promoting regulations that enhance security and privacy protections, as well as by investing in infrastructure to ensure widespread accessibility.

This study also identified several areas for future investigation. There is a need for longitudinal studies to track changes in consumer attitudes and behaviors over time, particularly as new technologies emerge. Additionally, further research is required to explore the impact of cultural and regional differences on consumers' willingness to pay for digital payment systems. Understanding these variations can help tailor strategies to different markets.

In conclusion, this thesis has advanced our understanding of the factors that influence consumers' willingness to pay for digital payment systems. By focusing on perceived ease of use, perceived usefulness, trust, and effort expectation, the study provides a comprehensive framework for analyzing consumer behavior in the context of digital payments. The findings offer valuable insights for businesses and policymakers aiming to promote the adoption of digital payment systems and contribute to the development of a more inclusive and efficient cashless economy.

5.4 Recommendations

Based on the findings of this thesis, several recommendations can be proposed to further enhance consumer adoption of digital payment systems:

Enhance User Experience:

Improving the user experience (UX) of digital payment platforms is crucial to attracting and retaining users. This involves optimizing the design and functionality of interfaces to make them intuitive and user-friendly. For example, simplifying the checkout process, reducing the number of steps required to complete a transaction, and ensuring that the

platform is accessible across different devices and screen sizes can significantly enhance the user experience. Additionally, incorporating user feedback through usability testing and iterative design processes can help identify pain points and areas for improvement.

Strengthen Trust and Security Measures:

Consumer trust is essential for the widespread adoption of digital payment systems. Strengthening trust involves implementing robust security measures to protect users' sensitive information and transactions. This may include incorporating encryption techniques, implementing multi-factor authentication, and regularly updating security protocols to address emerging threats. Transparent communication about security measures, privacy policies, and data handling practices can also help build trust by providing users with confidence in the security of the platform.

Educate and Empower Consumers:

Educational campaigns play a vital role in increasing awareness and understanding of digital payment technologies among consumers. These campaigns can provide information about the benefits of digital payments, how to use digital payment platforms securely, and how to protect against common scams and frauds. Empowering consumers with the knowledge and skills needed to navigate digital payment platforms confidently can help overcome barriers to adoption and encourage broader usage of digital payment systems.

Simplify Effort Expectations:

Reducing the perceived effort involved in adopting digital payment systems is essential for encouraging uptake among consumers. Simplifying registration processes, minimizing the number of steps required to complete transactions, and providing clear instructions and support resources can help alleviate friction points and make the adoption process smoother for users. Offering incentives, such as discounts or rewards, for using digital payment methods can also motivate consumers to overcome any perceived effort involved.

Foster Collaboration and Standardization:

Collaboration among industry stakeholders is essential for establishing common standards and interoperability across digital payment platforms. This can help reduce fragmentation in the market, making it easier for consumers to use digital payment systems across different merchants and platforms. Standardizing processes and protocols for digital payments can also facilitate seamless integration and interoperability, ultimately enhancing the overall user experience and encouraging broader adoption.

Monitor and Adapt to Consumer Preferences:

Continuously monitoring consumer preferences and behaviors is crucial for staying responsive to evolving market dynamics. This involves collecting and analyzing data on user interactions, feedback, and transaction patterns to identify emerging trends and opportunities. By understanding how consumers are using digital payment systems and what features or services they value most, businesses can adapt their offerings to better meet consumer needs and preferences, ultimately driving higher adoption and usage rates.

By implementing these recommendations, policymakers, industry stakeholders, and businesses can work together to create an enabling environment for the widespread adoption of digital payment systems. This, in turn, can drive financial inclusion, promote economic growth, and foster innovation in the digital economy.

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ANNEX

ANNEX I:

Questionnaire

Section 1: Demographic Information

1. Gender
 - i. Male
 - ii. Female
 - iii. Others
2. Age Group
 - i. 18-25
 - ii. 26-35
 - iii. 36-55
 - iv. Above 55
3. Education
 - i. SLC
 - ii. Intermediate
 - iii. Graduate
 - iv. Post graduate or Above
4. Monthly Income
 - i. Below 20K
 - ii. 20-40K
 - iii. 40-60K
 - iv. Above 60k
5. Employment Status

- i. Employed
- ii. Unemployed
- iii. Student
- iv. Retired
- v. Self Employed

Section B: Digital Payment Usage

- 6. Frequency of digital payment use
 - i. Daily
 - ii. Weekly
 - iii. Fortnightly
 - iv. Monthly
 - v. Never
- 7. Preferred digital payment methods use
 - i. Mobile/Internet banking
 - ii. Debit/Credit card
 - iii. connectIPS
 - iv. Wallets (e-sewa, khalti, etc)
- 8. Primary purpose of using digital payments
 - i. Online shopping
 - ii. Bill payments
 - iii. Peer-to-peer transfers
 - iv. Subscription services
 - v. Other (please specify)
- 9. Perceived Benefits of Digital Payments (select all that apply):

- i. Convenience
- ii. Speed
- iii. Rewards/discounts
- iv. Security
- v. Other (please specify)

10. Factors Influencing Willingness to Pay Digitally

- i. Convenience
- ii. Security
- iii. Transaction speed
- iv. Fees and charges
- v. Peer influence
- vi. Other (please specify)

11. Perceived ease of use (PEU). (Please check out (√) the box next to the number that best matches your opinion)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The digital payment system is easy to use because I usually carry the mobile phone with me					
The payment system displayed is appropriate because I can use it at any time					

The payment system is suitable because I can use it in any situation					
The payment system is easy to use because it is not complex					
The digital payment displayed is easy to use because it does not require a lot of technical skills					

12. Perceived usefulness (PU). (Please check out (√) the box next to the number that best matches your opinion)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Using the payment system displayed can help me make the purchases I normally make over the Internet					
Using the digital payment system can increase my efficiency when making purchases					
Using the digital payment system for my purchases can increase my productivity					

Using DPS is useful as it can decrease the time required for my activities.					
In general, the payment system displayed can be useful to me when making purchases					

13. Trust (TU). (Please check out (√) the box next to the number that best matches your opinion)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Legal frameworks for Digital Payment System (DPS) provision are sufficiently robust to protect consumers					
I believe that DPS service providers have sufficient expertise and resources to provide these services					
I believe that DPS service providers will act ethically when capturing, retaining, processing and					

managing my personal data.					
I believe that DPS service providers act honestly in dealing with consumers					
I believe that all DPS service providers implement adequate security measures to secure my personal data.					

14. Effort expectation (EE). (Please check out (√) the box next to the number that best matches your opinion)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Learning to use digital payment applications is easy for me					
In my interactions with DPS applications, I find them clear and understandable					
It is easy for me to become proficient in using DPS applications					
I find DPS applications easy to use					

15. Consumer willingness to pay. (Please check out (√) the box next to the number that best matches your opinion)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I consider it safe to make an digital payment through my network operator					
I consider it safe to make an DPS Payment through a 3rd party payment company					
I consider it safe to make an Payment with my credit card when using Digital payment system					
If I have access to the digital payment system I intend to use it to make purchases					
If I had access to the payment system I would use it in the near future					