CHAPTER I
INTRODUCTION

1.1 Background of the study

The World Bank (2019) has identified five components of the digital economy foundations namely the Connectivity, the Payments, the Digital Skills, the Logistics, and the Digital Policy & Regulation. The promises of the Digital Economy to the public are clearer through high-speed and reliable Internet, Mobile Banking and Digital Wallets, e-commerce / Logistics and Online Bookings, Ride-sharing apps, and OTT (Over the Top) video streaming platforms. Staring at the data presented by Nepal Telecommunications Authority, in its MIS Report for June-July 2020, we can find that Mobile penetration stands at 124.06% of the population and Internet broadband penetration at 74.43%. Furthermore, the data regarding Mobile Banking Subscribers is also promising in this context, as per Nepal Rastra Bank's Monthly Statistics for Mid-August 2020, which stands at 11,306,797, in number, which can be approximated as 37.86% of the population. Both of these data project a remarkable possibility of the Digital Economy in Nepal. Social Media as a dominant source of digital content and information, with more than 10 million Active Users, approximating 35% penetration, has compelled all businesses to have a social media presence. E-wallets like E-Sewa, Khalti, IME Pay, Cell Pay, and Moru, collectively have a user base of around 15 million, according to the Apps Store. The popularity of E-commerce with Thulo.com, Daraz, and Sastodeal, has taken the e-commerce concept inside households, stimulating an e-commerce boom with more than 250 E-commerce platforms actively serving in Nepal. This excludes all the e-commerce that is happening through the social media profiles of the sellers. With ride-sharing apps such as Tootle, Pathao, and Sarathi, the transportation industry also is experiencing digitization. Although these digital services are confined to cities, especially Kathmandu. even in the context of Nepal, the idea of a Digital economy is relevant. There is no question about the importance of the digital economy in any context.

The electronic transfer of funds between individuals or corporations, sometimes known as digital payments, has a somewhat lengthy history. Electronic funds transfer (EFT) systems were among the first digital payment methods, having been created in the 1960s and 1970s. These systems made it possible for banks and other financial organizations

to move money electronically over networks like the Automated Clearing House (ACH) of the Federal Reserve.

Online payment systems, like PayPal, grew in popularity in the 1980s and 1990s due to the internet's development and advancements in electronic commerce (e-commerce). These systems made it possible for people or businesses to electronically transfer money over the Internet.

The use of digital payments has increased in the twenty-first century due to the widespread use of mobile phones and the creation of mobile payment systems like Apple Pay and Google Pay. These days, peer-to-peer (P2P) payments, bill payments, and online purchasing are just a few of the many uses for digital payments.

The Nepal Bank Limited, the country's first commercial bank, was founded in 1937. This signified the start of the nation's official banking and financial services industry. The financial system in Nepal expanded and changed during the ensuing decades, bringing new payment options and creating a more formal regulatory structure.

The use of digital payment methods, such as mobile banking and digital payment platforms, has significantly increased in Nepal in recent years. This has been influenced by government measures to encourage the use of digital payments as well as the growing availability and use of mobile phones and internet connectivity.

Digital payments have a wide range of use cases, and the particular ones deemed "best" may vary according to the situation and the users' requirements. The following are a few potential applications for digital payments that are widely accessible and well-liked worldwide:

Online shopping: Since digital payments eliminate the need for customers to physically show cash or a credit card when making purchases from e-commerce websites and other online businesses, they are frequently utilized for online shopping.

Peer-to-peer (P2P) payments: People can send and receive money directly with one another without using a bank account or credit card through digital payment services like PayPal and Venmo.

Payment of bills: A lot of people utilize digital payments to pay regular expenses, such as credit cards, rent, or utility bills. This can be done automatically regularly and online or through mobile payment apps.

Contactless payments: Contactless payment solutions, like Apple Pay and Google Pay, eliminate the need for physical credit card swipes and PIN entry by letting users pay with a simple tap of their phone or other device against a payment terminal.

Digital wallets: Using a single digital platform, users may save and manage several payment methods, including credit cards, debit cards, and virtual currencies, with digital wallets like Samsung Pay and Alipay.

Mobile banking: A lot of financial organizations, including banks, provide apps for users to use on their phones or other mobile devices to manage their accounts, make payments, and transfer money.

The policy compulsions like that of the demonetization in India during 2016, and the outdoor restrictions imposed due to COVID-19 risks all must have contributed towards the attitude change in people towards digital adoption across the world. The World Bank digital adoption index for Nepal had risen from 0.29 to 0.36 from 2014 to 2016 before the two push events were identified. Digital payments have become increasingly popular in Nepal in recent years. There are a variety of digital payment options available in Nepal, including mobile banking, e-wallets, and online payment gateways. The use of digital payments in Nepal has been promoted by the government and supported by regulatory measures. The Nepal Rastra Bank, the country's central bank, has issued guidelines for the use of digital payments in Nepal and has taken steps to promote the adoption of digital payment technologies. Overall, the use of digital payments in Nepal is increasing as more people adopt mobile banking, e-wallets, and online payment gateways. This trend is expected to continue as more people in Nepal gain access to mobile phones and the internet, and as the government continues to promote and support the adoption of digital payment technologies.

One trend that has been noted is the increasing adoption of mobile banking in Nepal. Most Bank and Financial Institutions (BFIs) in Nepal provide mobile banking as a value added service to customers, which allow users to make payments, transfer funds, and manage their accounts from their mobile phones. This has made it easier for people in

Nepal to access financial services, especially in rural areas where traditional banking infrastructure may be limited. Another trend is the growing popularity of e-wallets in Nepal. E-wallets are digital wallets that allow users to store and spend money online or in-store using their mobile phones. They have become a popular payment method in Nepal, especially among younger people who are comfortable with using technology.

There are also some challenges and issues related to the use of digital payments in Nepal. One concern is the potential for fraud and cybercrime. To address this issue, the Nepal Rastra Bank, the country's central bank, has issued guidelines for the use of digital payments and has taken steps to promote the adoption of secure payment technologies. Another issue is the limited availability of digital payment infrastructure in some parts of Nepal, particularly in rural areas. This can make it difficult for people in these areas to access digital payment services. Overall, the literature suggests that digital payments are becoming more common in Nepal and are being embraced by a growing number of people. However, some challenges and issues need to be addressed to ensure the widespread adoption and use of digital payment technologies in the country.

1.2 Statement of the Problem

The cash is a dominant mode of making payments, across Nepal, to this date despite various efforts from the Nepal Rastra Bank to promote digital payments.

Digital payments are expanding quickly these days, altering both business and lifestyle practices. The majority of BFIs in Nepal have launched their mobile banking applications, and a large number of PSPs (Payment Service Providers) have released digital wallets. Even though they offer these digital services, their clients are not aware of them. Therefore, it is crucial to understand how individuals perceive digital payments and their intentions. In Nepal, banks offer various online services such as ATMs, internet banking, mobile banking, and so forth, however, the public is not willing to adopt these offerings. Even though many have access to Internet banking and ATM cards, they are nonetheless extremely hesitant to use them. The majority of people instead choose to use cash as a form of payment.

It is commonly recognized that when it comes to the adoption and use of technology, both individuals and businesses in Nepal are late adopters. The majority of Asian and

Middle Eastern nations have likewise experienced this kind of issue. Since Nepal joined the World Trade Organisation on April 23, 2004, all of its government, banking, and payment services should be able to withstand international standards and continue to be trusted by the general public. The only way to improve the economy as a whole is to embrace new technologies and progress existing ones. In contrast to wealthy nations such as the United States and Europe, the people of Nepal lack access to modern infrastructure and technology.

Hasan said that Nepal experiences the same general issues that emerging nations do (Hasan, 2005). which are listed below:

i. The primary justification for adopting new technology is security and privacy. This means that many banks and other financial institutions in emerging and undeveloped nations do not use the most secure systems, and their infrastructure is insufficient to ensure security and privacy.
ii. Insufficient knowledge of computers and internet usage. Adopting new technology is challenging because to the low percentage of school literacy and the training required to utilize computers, the internet, and information technology infrastructure.
iii. A broken or slow internet connectivity implies that there is unstable internet, and most of the reliable internet service is limited to the cities; no laws or regulations are permitting the banking industry to offer innovative, cutting-edge banking and payment services.
iv. Exorbitant management and construction expenses. People must purchase internet from private service providers, which comes at a steep cost, as there is no government mechanism to give internet access to customers. Conversely, the vendor providing the banks with the service is likewise quite costly.
v. Particular religious and cultural factors affect how people behave in this domain;
vi. Privacy concerns and questions about data and network security that cause consumers to lose faith in digital payments.
vii. Customers are reluctant to use digital payments because they think that any error or inaccuracy could cost them money.

viii. Insufficient services and internet knowledge; customers continue to lack confidence while utilizing online services such as mobile banking, ATM cards, and digital wallets

1.3 Research Questions

This report is a result of research on the electronic and digital payments in Nepal, particularly as they relate to digital wallets. Understanding the Nepalese payment system, including its underlying legal frameworks and regulatory structure, is the first goal of this research. Next, it will look at the trend of the several digital payment instruments that are available in Nepal, and lastly, it will address the use and uptake of digital wallets. The perspective of those surveyed in Nepal will serve as the foundation for this study. It also seeks to ascertain how many users there are of digital wallets. Many individuals now have mobile phones and can communicate because of Nepal's communication sector's rapid technological and infrastructural development.

The customer's taste may have changed due to the new service and demand, and the increasing usage of technology and communication gadgets may have altered how people view the internet and digital wallets. It would be preferable to investigate their perspective and intention about the use of digital wallets and offer some recommendations that can further the body of information already available on the subject of public perception and intention research.

The main inquiry raised by this study is:

i. What are the governing legal and regulatory frameworks in the Nepalese payment system's context?
ii. What is the current state of the many digital payment methods that are offered in Nepal?
iii. What factors are impacting Nepal's successful adoption of digital wallets?

1.4 Objectives of the Study

The general objective of this study is to examine the situation of Digital Payments in Nepal.

The specific objectives of study are as follows:

i. To take into consideration Nepal's Payment Systems' underlying legal and regulatory framework.
ii. To look at how different digital payment methods are trending in Nepal.
iii. To determine and examine the factors that influence the uptake of digital wallets in Nepal.

1.5 Research Hypothesis

The word "hypothesis" (plural: "hypotheses") describes a particular, testable estimate of the researcher's expectations for the study's outcomes. Typically, this involves describing how the independent variables and the dependent variables might be correlated (McLeod, 2021). "Prospective users could think that a system is too complicated to use and that the performance advantages of utilizing the program are overshadowed by the effort of using the application, even if they think the application is valuable" as per Davis(1989) .The two ideas are fundamental drivers of user behavior towards the adoption of digital wallets and are equally significant.

H1: There is a positive significant relationship between perceived usefulness and adoption of digital wallets.

"The degree to which a person believes that using a particular system would enhance his or her job performance" is the definition of Perceived Usefulness (PU) given here. (Davis, 1985). Utility, according to past research, is the arbitrary probability that using new technology will improve a person's performance on a particular task.

H2: There is a positive significant relationship between perceived ease of use and adoption of digital wallets.

"The degree to which a person believes that using a particular system would be free of effort of physical and mental effort" is known as perceived ease of use (PEOU). (Davis, 1993). TAM’s perceived usability has a major influence on the IT system's acceptance as per Singh (2012). "From a causal point of view, the regression results suggest that ease of use may be an antecedent of usefulness, rather than a parallel, direct determinant

of usage," as per the paper on the interaction among PEOU and PU by Davis, (1985). This means that digital wallet systems are easier to use.

H3: There is a positive significant relationship between the perceived credibility and the adoption of digital wallets.

"The belief that the promise of another can be relied upon even under unforeseen circumstances" is known as perceived credibility. In particular, Customers frequently avoid service from the providers they lack trust, hence perceived credibility has a significant influence on consumer approval before service subscription. (Singh, 2012). For an electronic application to be considered credible, the user must be at ease with it and understand the potential risks involved. These risks can include informational, financial, physical, functional, social, time-loss, and functional risks. Security and privacy are therefore two crucial aspects of perceived credibility. "For a digital wallet to keep up its positive reputation and inspire clients' faith in its services, credibility is regarded as essential". This points that the high degree of credibility will allay the worries of the client and give reassurance regarding the security of transactions, as reconfirmed by Kazi (2013).

H4: There is a positive significant relationship between the perceived convenience and the adoption of digital wallets.

According to the argument made by Singh(2012), "the customer's attitude towards acceptance of a new information system has a critical impact on successful information system adoption," convenience (CONV) is the extent to which. Increased efficiency and 24/7 availability seem to be the most significant features of convenience, and convenience focuses on reduction in time and reduction in effort to make transactions, as demonstrated by (Williamson, 2006). Convenience will become increasingly more valued as people's concerns about their time and leisure become more genuine (Kazi, 2013). Many consumers don't want to spend extra time processing payments since they view time as money. As a result, there is a strong chance that a system that streamlines transactions will be adopted.

Four hypotheses have been constructed to ascertain the correlations between the independent and dependent variables in this investigation. These theories came from the study's theoretical framework:

i. H1: The adoption of digital wallets and the perceived usefulness are positively correlated.
ii. H2: The adoption of digital wallets and the perceived ease of use are positively correlated.
iii. H3: The adoption of digital wallets and the perceived credibility are positively correlated.
iv. H4: The adoption of digital wallets and the perceived convenience are positively correlated.

1.6 Significance of the Study

Using electronic devices to complete a financial transaction is known as digital payments. All of our payment demands can be handled using digital wallets, seven days a week. Financial transactions can be conducted from any location with internet access. Digital wallets have a long history of prioritizing customer convenience, including on-the-go payment for businesses, bills, and top-ups.

The study's recommendations are intended to aid in the adoption of digital wallets, spot patterns of rising usage of different digital payment instruments, and provide information on the legal and regulatory landscape of Nepal's payment systems. They can then use this information to understand the Payment Systems and the adoption of digital wallets, better.

Digital wallets will be able to attract more digital payments while providing their users with top-notch services. Nepal's payment sector will also have a benchmark for assessing efficacy. Customers who use digital wallets will also benefit from this research report since it will allow them to conduct transactions more conveniently from home or work, saving them time and money. They will gain additional knowledge on how to finish digital payment services using digital wallets. The study will give the government the information it needs to successfully manage the payment system and draft policy adjustments, which will result in efficient regulation. Most people in Nepal may be unaware of the digital payment system. Students will thus be able to learn more about the digital wallet services that are accessible to them through this study. This research will be used in the future by other digital payment and economy researchers.

1.7 Delimitations of the Study

The purpose of the study is to maximize the likelihood of achieving the research goal. Nevertheless, there are certain limitations that should be noted even though they do not support the findings.

i. While there are many factors that influence the adoption of digital wallets, this study just looks at the current situation of survey respondents.
ii. Because of the small sample size and lack of rigour, the study's conclusions cannot be fully applied to other, more rigorous studies.
iii. The convenience sample of the study reduces its neutrality by excluding the views of officials from the digital wallet entities, whose perspectives ought to be taken into consideration in subsequent research.
iv. The research was restricted to the participants even though it dealt with digital wallets.

1.8 Structure of the Study

The preliminary part, the main report, and the appendices comprise the three sections of the study. The title page, certification, approval, table of contents, list of tables, list of figures, list of acronyms used, and abstracts are all included in the preliminary section.

The background and introduction, relevant literature review and theoretical framework, research methodology, findings and discussion, and summary and conclusions make up the five chapters that make up the report’s body. The final section of the study includes references.

The introduction to the research is covered in the first chapter of the study's body. This chapter discusses the backdrop of the study, the problem description, the formulation of the research objectives and hypotheses, the scope and applicability of the investigation, its limitations, and its organization.

An evaluation of Nepal's digital payments literature is the focus of the second chapter. The chapter also includes the theoretical framework for the investigation.

The research approach for the study is covered in the third chapter. The research design, demographics, sample, sources and methods for collecting data, and data analysis are all covered in this chapter.

The fourth chapter discusses the analysis and findings of the survey. It includes an overview of the legislative and regulatory frameworks governing Nepal's payment systems, followed by several charts showing the evolution of different digital payment methods and a variety of tables and data about the participants, and how it influences the uptake of digital wallets.

The fifth chapter presents the study's summary and conclusion.

CHAPTER: II

REVIEW OF LITERATURE

The chapter reviews and discusses digital payment transactions and trends in Nepal. Then it discusses the Technology Acceptance Model (TAM) and other relevant research on Digital Wallets using TAM. The study's theoretical framework and research gap are discussed at last of this chapter.

2.1 Digital Payments in Nepal

Digital payments have become increasingly popular in Nepal in recent years. There are a variety of digital payment options available in Nepal, including mobile banking, e-wallets, and online payment gateways. The use of digital payments in Nepal has been promoted by the government and supported by regulatory measures. The Nepal Rastra Bank, the country's central bank, has issued guidelines for the use of digital payments in Nepal and has taken steps to promote the adoption of digital payment technologies. This trend is expected to continue as more people in Nepal gain access to mobile phones and the internet, and as the government continues to promote and support the adoption of digital payment technologies.

Table 2.1: Development Stages in Digital Economy

Development Stages	**Stage 1 : Transaction Accounts**	**Stage 2 : Digital Payments**	**Stage 3: Other DFS (credit, insurance)**	**Stage 4: Widespread DFS Adoption and Use**
Countries	Bangladesh, Ghana, Tanzania, Algeria, Egypt, Indonesia, Pakistan, Peru, Rwanda, Zambia, Vietnam	Brazil, India, Thailand, Turkey, Kazakhstan, Nepal	Kenya	Chaina, USA, Sweden

Source: World Bank Group, Digital Financial Services, April 2020

One trend that has been noted is the increasing adoption of mobile banking in Nepal. Most BFIs in Nepal now provide mobile banking as a additional services, which allow

users to make payments, transfer funds, and manage their accounts from their mobile phones. This has made it easier for people in Nepal to access financial services, especially in rural areas where traditional banking infrastructure may be limited. Another trend is the growing popularity of e-wallets in Nepal. E-wallets are digital wallets that allow users to store and spend money online or in-store using their mobile phones. They have become a popular payment method in Nepal, especially among younger people who are comfortable with using technology.

Various factors can contribute to people being excluded from making digital payments in Nepal. Some of these factors include the limited availability of digital payment infrastructure: In some parts of Nepal, there may be a lack of access to the necessary infrastructure (e.g. internet connectivity, mobile phone coverage, etc.) to make digital payments.

Lack of awareness and education: Some people may not be aware of digital payment options or may not understand how to use them, which can act as a barrier to adoption.

Financial illiteracy: Financially illiterate People may not be able to understand or navigate digital payment systems, making them less likely to use them.

Poverty: People who are living in poverty may not have the financial resources or access to the necessary infrastructure to make digital payments.

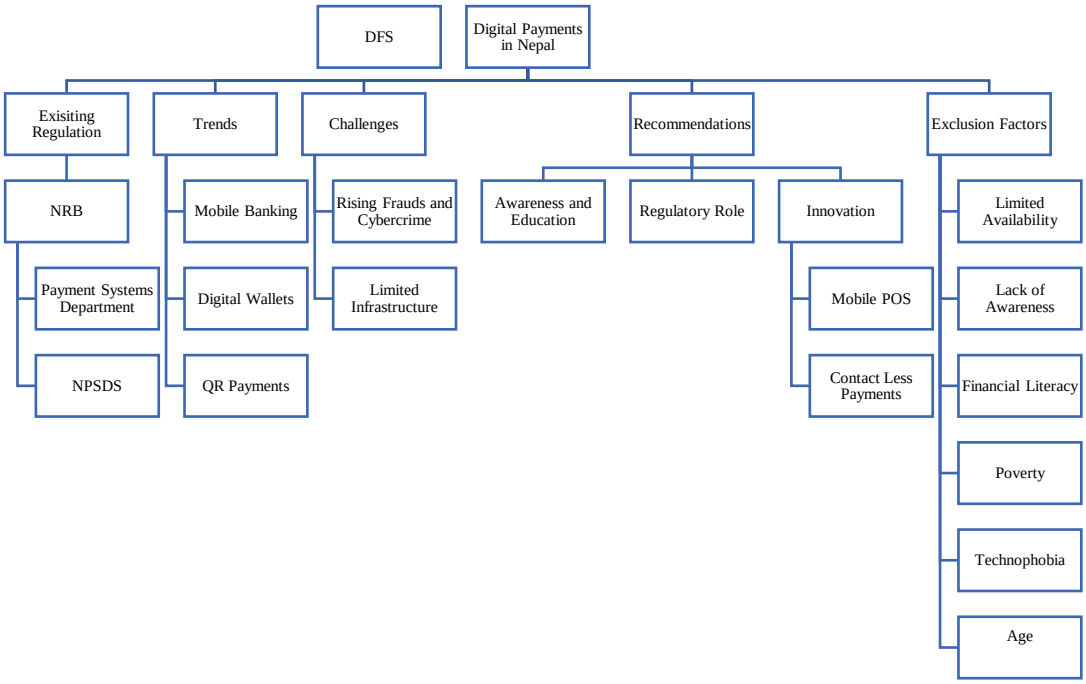
Technophobia: Some people may be resistant to using new technologies or may not feel comfortable using digital payment systems.

Age: Older people may be less likely to use digital payment systems due to a lack of familiarity with technology.

To participate in digital payments in Nepal, individuals and businesses typically need to have access to a device (such as a smartphone or computer) with an internet connection, as well as a digital payment account or wallet. They may also need to have a bank account and may be required to provide identification and proof of address to open a digital payment account. Additionally, they may need to be familiar with the specific digital payment platforms and technologies available in Nepal and may need to understand the terms and conditions of using these platforms. It is also important to note

that the availability and accessibility of digital payment options may vary depending on the location and infrastructure in Nepal.

Fig 2.1: Digital Payments in Nepal



Source: Author

2.1.1 Legal and Regulatory framework

As Central Bank of Nepal, the Nepal Rastra Bank (NRB) has implemented the Nepal Payment System Development Strategy (NPSDS) to modernize the country's payment systems. Nine pillars make up this strategy: international remittances, interbank money market, government payments, large value payment systems, retail payment systems, government payments, securities depository and clearing and settlement mechanisms, oversight of national payment systems, and a cooperative framework for payment systems. The Payment and Settlement Act of 2019, the Payment and Settlement Bylaw of 2020, and the Licencing Policy for Payment Related Institutions/Mechanisms of 2016 were all passed by the NRB in order to promote this plan. The Payment Systems Department was also founded in this manner. The goal of these legislative frameworks is to increase and enhance Nepal's usage of digital payment options. Payment Systems department of Nepal Rastra Bank, which is the apex institution in association with digital payments in Nepal, has the following functions.

i. Formulate policy provisions to promote digital payments,
ii. Issue license to eligible institutions as Payment System Operators (PSOs) and Payment Service Providers (PSPs),
iii. Regulate licensed PSOs and PSPs,
iv. Oversight of PSOs and PSPs,
v. Operate Real Time Gross Settlement (RTGS) System

There are two types of Payment Institutions as per the licensing policy of Nepal Rastra Bank's Payment Systems Department.

Payment Service Provider (PSP): PSP is the organization that offers beneficiaries payment-related services. It also refers to the entity that transfers funds domestically and internationally, carries out electronic payment activities, and pays for products, services, assets, or other liabilities between the entity and beneficiaries. The NRB has granted licences to all 27 commercial banks, 13 development banks, and 11 financing businesses to function as payment service providers (PSPs), making a total of 28 independent PSPs, reaching 79 PSPs in total.

Payment System Operator (PSO): PSO is the organization that handles the administration, clearing, and other functions associated with payments. In addition, it describes the organisation that manages electronic cards, clearing houses, and other online electronic payment networks. The Payment Systems Operators (PSO) number ten.

Legal Aspects of Payment Systems in Nepal

The Nepal Rastra Bank Act, 2002 is the main legislation that governs the operation and activities of Nepal Rastra Bank (NRB), the central bank of Nepal. The Act gives NRB the authority to regulate, supervise, and promote the development of the country's payment and settlement systems.

The Payment and Settlement Act, 2019 is a law that provides a framework for the regulation and supervision of payment and settlement systems in Nepal. The Act aims to ensure the stability, security, and efficiency of the payment and settlement systems, and to promote the development of new payment technologies and services.

The Payment and Settlement Bylaw, 2020 is a set of rules and regulations that provide further guidance on the implementation and operation of the Payment and Settlement Act. The bylaw covers issues such as the licensing and supervision of payment systems and institutions, and the resolution of disputes in the payment and settlement systems.

The Licensing Policy for Payment-Related Institutions is a policy issued by NRB that sets out the criteria and requirements for the licensing of payment-related institutions in Nepal. The policy aims to ensure that payment-related institutions can meet the necessary standards of operation and conduct to protect the interests of their customers and the stability of the payment system.

The Payment Systems Inspection and Supervision Bylaw, 2021 is a set of rules and regulations that outline the procedures and powers of NRB for the inspection and supervision of payment systems and institutions in Nepal. The bylaw covers issues such as the scope of inspections, the rights and obligations of payment systems and institutions, and the powers of NRB to enforce compliance with the payment and settlement laws and regulations.

The Nepal QR Standardization Framework and Guidelines is a set of standards and guidelines that define the technical requirements and operational procedures for the use of QR codes in Nepal's payment and settlement systems. The framework aims to ensure the interoperability and security of QR code-based payment services and to promote the development of a common QR code standard for Nepal.

The Payment Systems Oversight Manual is a set of guidelines and procedures issued by NRB for the oversight of payment systems and institutions in Nepal. The manual covers issues such as the scope and purpose of oversight, the principles and standards for oversight, and the roles and responsibilities of NRB and other stakeholders in the oversight process.

Retail Payment Systems (RPS) and National Payment Switch (NPS)

The Retail Payment Systems in Nepal include various methods for low-value payments, such as electronic funds transfers, cheque clearing, card payments, QR code payments, e-money, and remittances. These systems are mainly operated by the Nepal Clearing

House Limited (NCHL), which provides image-based cheque clearing and electronic fund transfer solutions. Other major operators in the card payment space include Smart Choice Technologies (SCT) Ltd. and Nepal Electronic Payment System (NEPS) Ltd. FonePay Payment Services Limited also operates as a payment service provider and offers a platform for QR payments and mobile banking services to banks and financial institutions. International institutions like VISA, Union Pay, and Master Card also operate as payment service providers in Nepal. Payment service providers also run Nepal's retail payment infrastructure, which includes automated clearing houses and payment switches. Retail payments have seen major advancements in recent years, including instantaneous payment services via IPS and connectIPS, mobile and online banking, wallets, and QR codes. In order to create an interoperable payment infrastructure and settle all domestic transactions within Nepal, the National Payment Switch (NPS) is currently being established through the NCHL. This is being done in accordance with the Payment and Settlement Act of 2019 and the Payment and Settlement Bylaw of 2020, as well as the announcement made in the Monetary Policy Statement for the fiscal year 2019/20.

Role of NCHL, Nepal Clearing House Limited

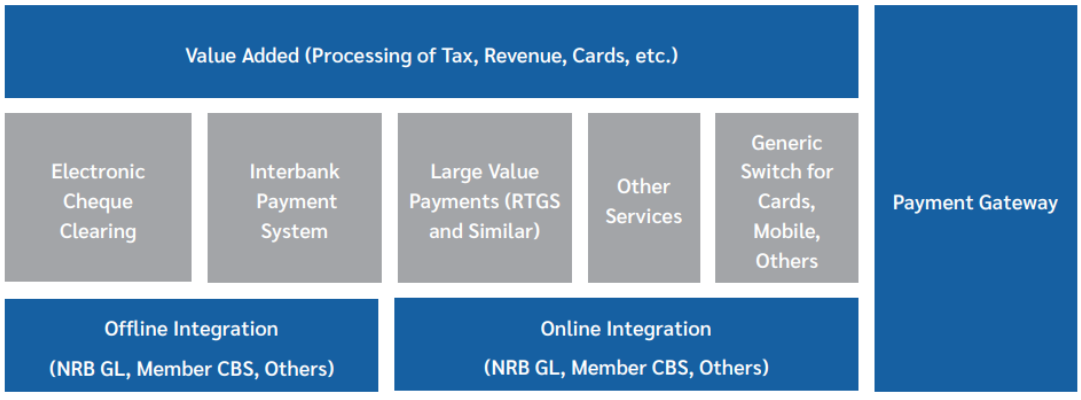
Nepal Clearing House Limited (NCHL) plays a pivotal role in Nepal's digital payment landscape by providing a safe, efficient, and reliable infrastructure for clearing and settling electronic payments. Established in 2008, NCHL has been instrumental in transforming Nepal's traditional cash-based economy into a more digital and inclusive one. As of now 10% of the share of NCHL is owned by Nepal Rastra Bank and the other 90% of the shares of NCHL is owned by 54 other Bank and financial institutions licensed by Nepal Rastra Bank.

In line with Nepal Government’s Digital Nepal Framework and Nepal Rastra Bank’s National Payment System Development Strategy, NCHL has been playing an instrumental role in establishing national payment infrastructures, generating momentum for digital transactions, and facilitating various sectors to enroll within the digital eco-system. This has positively impacted the digital economy in recent years. NCHL has been providing integrated solutions to banks and financial institutions, non-bank financial service providers, and key institutions including Nepal Government, SemiGovernment entities, and other large institutions. NCHL has supported NRB’s

initiative to expand the payment industry through banks and non-bank entities by opening up its infrastructure to such PSOs/PSPs.

NCHL is currently operating seven national payment infrastructures and is fully supporting NRB's initiative to expand the payment ecosystem through BFIs and nonbank entities by opening up its infrastructure to all stakeholders. The implementation of the National Payment Switch (NPS) is one of such initiative to introduce multiple retail instruments and establish interoperability of infrastructures, instruments, and services. Retail Payment Switch (RPS), as the first phase of NPS, has already been implemented and implementation of the national card switch and national domestic card scheme is in progress. NCHL has the vision of being a leading provider of electronic payment and settlement services in Nepal. As per its Audit Report, The strategic objective of NCHL is to implement multiple payments, clearing, and settlement systems to facilitate the development of electronic payments in Nepal. Hence, it intends to establish the payment systems and processes for multiple financial instruments and channels thereby leveraging and reinvesting into national payments infrastructures.

Table 2.2: NCHL Roadmap



NCHL Product and Services Roadmap

Source: NCHL Annual Report 2023

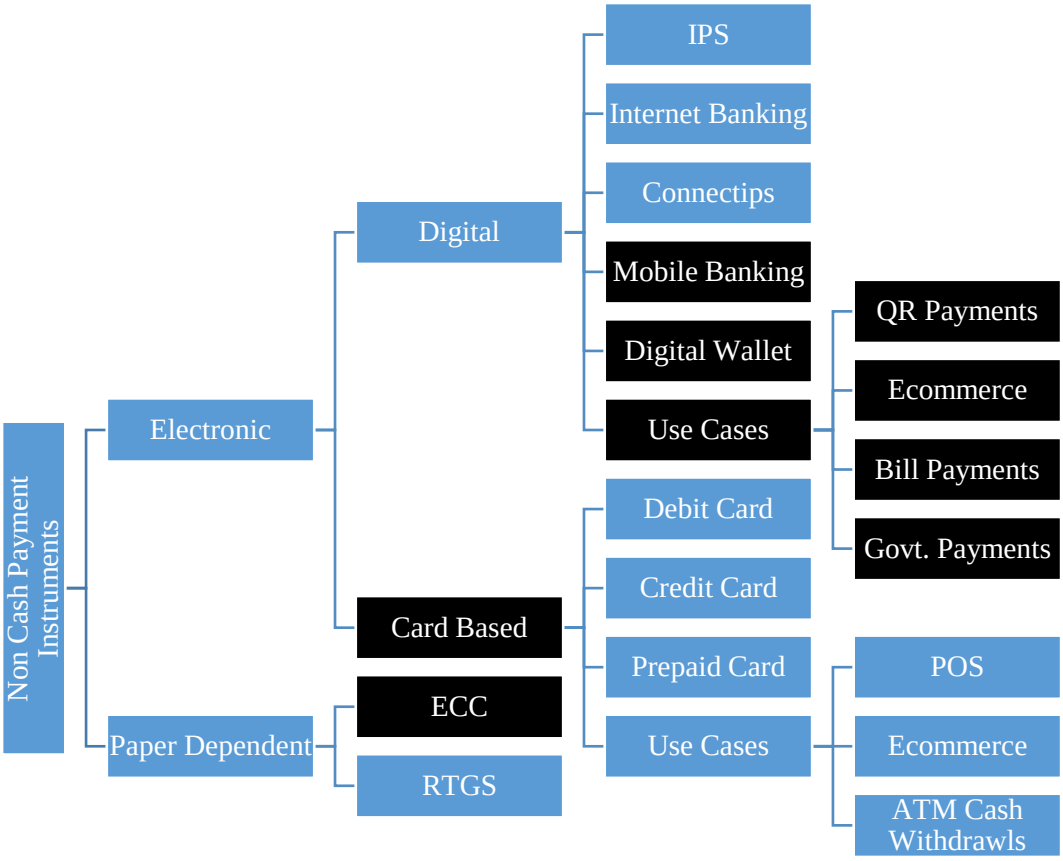
2.2 Payment Instruments/ Systems and Use Cases – Nepal

Various Payment Instruments/ Systems and Use cases available in Nepal, as per Electronic Payment Transactions Report from Nepal Rastra Bank are as follows:

i. RTGS – Realtime Gross Settlement

ii. ECC – Electronic Cheque Clearance
iii. IPS - Interbank Payment System
iv. ConnectIPS
v. Debit Cards
vi. Credit Cards
vii. Prepaid Cards
viii. Internet Banking
ix. Mobile Banking
x. Branchless Banking
xi. Wallet
xii. ATM-Cash Withdrawal
xiii. QR-Based Payments
xiv. Point of Sales (POS)
xv. E-Commerce

Fig 2.2: Classification of Non-Cash Payment Instruments in Nepal



Source: Author

Non-cash payment instruments can be classified into electronic and Paper Dependent payment instruments, while electronic instruments have end-to-end technical solutions and offer seamless, user-initiated payments, paper-dependent payment instruments originate in paper form and are fulfilled electronically in Nepal. ECC stands for electronic cheque clearance system, and RTGS stands for real-time gross settlement system, both of which are paper-dependent Non-Cash Payment Instruments. Looking at the electronic side, there are purely digital and card-based systems.

Digital Payment instruments include Interbank Payment System (IPS), Internet Banking provided by individual Banks and Financial Institutions, Connect IPS from NCHL, Mobile Banking provided by individual Banks and Financial Institutions, and Wallets provided by Payment Service Providers.

Nepal's payment system is also full of the use cases of Payment Instruments, including QR code-based payment, point-of-sale terminals, e-commerce payments, and Cash withdrawals from ATMs.

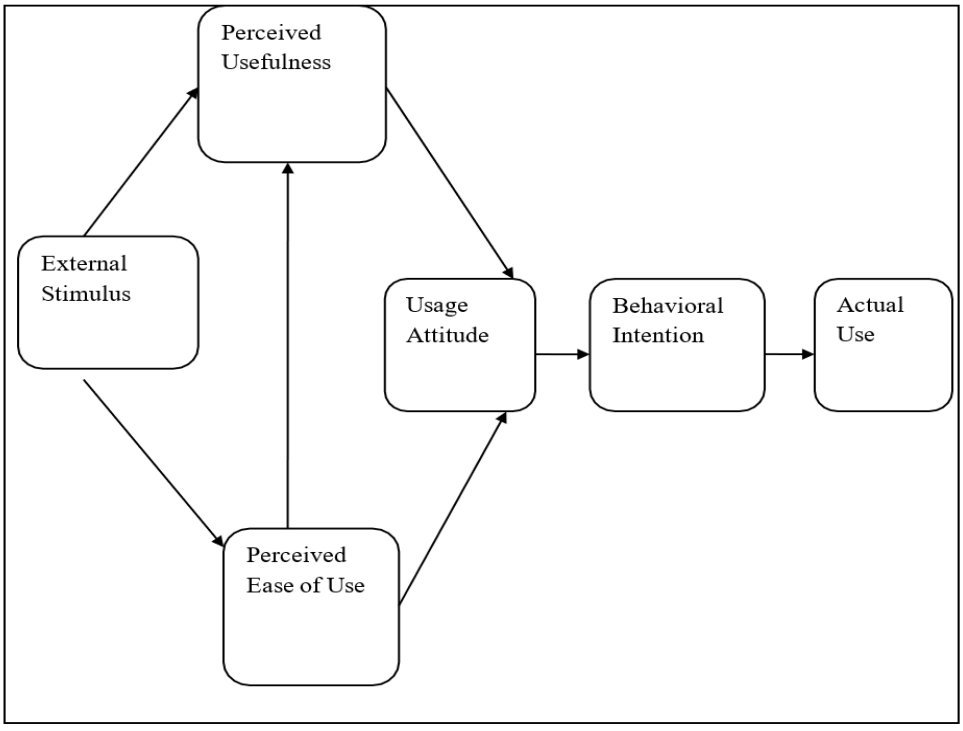
Public-end Digital payment instruments, like Mobile Banking and ConnectIPS are capable of performing QR code-based Payments and Ecommerce Payments. While Card-based instruments are capable of being used at Point-of-Sale terminals, e-commerce platforms via. Card not present mechanisms and Cash Withdrawal from ATM. Most use of Internet Banking is for interbank transfers and corporate transactions including Tax Payments, Vendor Payments, and Salary Payments.

2.3 Technology Acceptance Model

Technology Acceptance Model (TAM) emerged to solve the lack of verified measurement scales to estimate users' adoption of information technologies. As per Fred (1989) "The research has been limited by the lack of high-quality measurements for important determinants of user acceptability and Past research reveals that many metrics do not correlate substantially with system use." The figure depicts the Technology Accepted Model (TAM), which details the relationships and interactions between system features, perceived utility, perceived usefulness, attitude toward use, and then the actual use (Davis, 1993). According to the TAM, two key factors affect how and when people will employ new information system (IS) technologies. Perceived Usefulness (PU) and perceived ease of use (PEOU) (Chandio, 2011). Users' adoption

to recommended technology relies on several factors associated to their experience while making use of the system, including the positive appeal of any of the interaction with the system and the potential that they would make use of the system on a regular basis. As per Armenta, "People will use an application if they think it will help them perform a given task better than when they don't use the application. And even if consumers believe a given application is useful, if the application is challenging to use, then the perceived benefits of using the application are outweighed by the effort needed to use it." TAM was considered as a reliable tool understanding technology acceptance (Kazi, 2013). The benefit of TAM includes, its technological focus, without which it might be easy to ignore the impact of a user's psycho-social perspectives about the adoption of technology. The original TAM is not adequate as it fails to take into account factors such as age, prior experience, gender, and a list of other psychological factors that might influence attitudes and aspirations toward technology its use.

Fig 2.3: Technology Acceptance Model (TAM)



Source: Davis (1993)

2.3.1 Previous studies on digital payment that applied TAM

Table 2.3: Literature Review Matrix

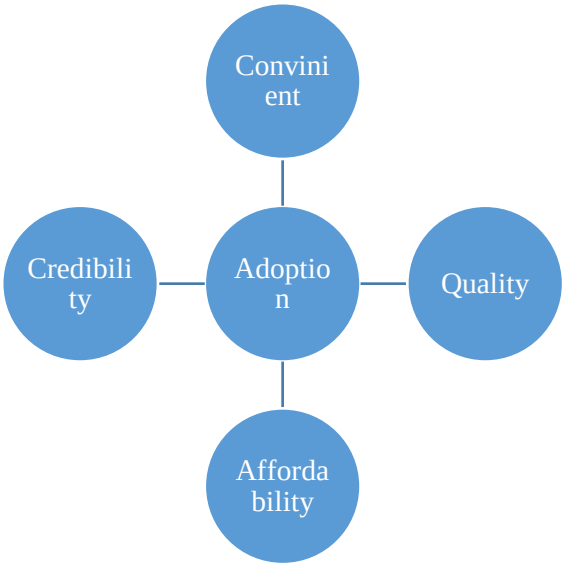
Title and Author	Findings
Understanding behavioral intention to use mobile wallets in Vietnam: Extending the tam model with trust and enjoyment. Anh Tho To & Thi Hong Minh Trinh	The study's theoretical underpinning was thought to be the expanded Technology Acceptance Model (TAM) with subjective satisfaction and trust. Structural equation modelling (SEM) was used to analyze the primary empirical data from 332 respondents. The behavioural intention to use M-wallets is positively and significantly impacted by perceived ease of use, perceived usefulness, and enjoyment, whereas trust has no direct effect.
Factors Affecting User Adoption of E-Payment Services Available in Mobile Wallets in Saudi Arabia Alswaigh, Noha Y. ; Aloud, Monira E.	This study creates a conceptual model that combines the TAM with behavioral considerations. The study examines the findings of an online survey that was given to 394 Saudi nationals. The findings show that all of the criteria have a favorable impact on user attitudes and intentions. User behavior in accepting mobile wallet payments is directly predicted by perceived usefulness, perceived simplicity of use, lifestyle compatibility, and facilitating factors. This research adds empirical support to the body of knowledge regarding the impact of perceived utility and lifestyle suitability on the acceptance of mobile payments. The findings show that the COVID-19 epidemic was the primary reason for around 26% of the respondents' initiation of use of mobile wallet services.
From Physical To Digital: Investigating Consumer Behaviour Of Switching To Mobile Wallet Omar Alaeddin , Rana Altounjy , Zalina Zainudin , Fakarudin Kamarudin	The employees at UNIKL Business School received 140 emails with surveys; 98 of them were completed and usable. The findings demonstrated that customer attitudes about switching are significantly influenced by perceived utility and perceived simplicity of use. Furthermore, there is a considerable relationship between attitude and intention, with perceived risk attenuating the impact of this relationship.
Factor Affecting Adoption of E-Wallet in Sarawak	The respondents were given the questionnaire, which had 26 questions, and it was successful in gathering 450 responses. Regression study results indicated that people would embrace e-wallets if they thought they were practical and simple to use. In the meantime, the study's conclusions also demonstrated that consumers are typically drawn to use e-

Roktim Sarmah, Neeraj Dhiman, Honey Kanojia	wallets by rewards. In addition, this study discovered that users may be discouraged from utilizing e-wallets due to a higher perceived risk.
Factors Affecting Adoption Of E-Wallets Among Youths In Malaysia Siew Chein Teo, Pei Li Law, Ah Choo Koo	The TAM model was expanded in this study to include perceived security and social impact elements to evaluate the attitudes of Malaysian adolescents towards the adoption of e-wallets. Two hundred sets of questionnaires were collected from young Malaysians. According to the findings, the intention to use e-wallets is significantly influenced by perceived security, perceived ease of use, and social influence. Perceived usefulness is only marginally predictive of e-wallet adoption among young Malaysians.
Consumer attitude and intention to adopt mobile wallet in India – An empirical study Deepak Chawla, Himanshu Joshi	The findings indicate that several criteria, including perceived ease of use (PEOU), perceived usefulness (PU), security, trustworthiness, enabling conditions, and compatibility with lifestyle choices, significantly influence consumer attitudes and intentions towards the use of mobile wallets. Fifteen of the seventeen theories put out were accepted. While PU strongly influenced trust, attitude, and intention, ease of use considerably influenced usefulness and trust. It was discovered that security and trust are key factors in determining trust.
E-Wallet Adoption: A Case In Malaysia Teoh Teng Tenk, Melissa, Hoo Chin Yew, Lee Teck Heang	This study makes use of the UTAUT model. 210 respondents' data were gathered using an online survey. Even though e-wallets are still not a widely used payment method, the results indicate that 75% of Malaysians have either tried or started using them. Using an E-wallet, half of them spend less than RM100 every month, with an average transaction amount of RM50. Results show that while perceived risk and perceived costs have no discernible effect on E-wallet use behaviour, performance expectations, effort expectations, and social influence have a favorable impact.
Study of Consumer Intentions on Using Mobile Wallets Using TAM Model Shalini Gautam; Utkarsh Kumar; Sakshi Agarwal	In the study, the technology acceptance model (TAM) was applied. 186 people from Delhi NCR and Lucknow, India, were included in the sample. According to correlation and regression analysis, perceived usefulness, perceived ease of use, and attitude were found to be significantly associated and to have a positive linear relationship with behavioral intentions. However, as security is a built-in feature of mobile wallets, perceived security did not have a positive linear relationship with behavioral intentions.

Factors Influencing The Usage Of Digital Mobile Wallet In Nepal Rabindra Aryal	The study makes use of the Unified Theory of Acceptance and Use of Technology (UTAUT).A survey questionnaire is used to collect data, and it was given to 200 users, of whom 161 people constitute the sample size. The study's conclusions showed that users' behavioral intention to use a digital wallet is significantly influenced by performance expectancy, effort expectancy, facilitation condition, and social influence.
FinTech Adoption among Online Grocery Buyers during COVID-19 Lockdowns in Nepal Pragya Maharjan, Niranjan Devkota et. al.	The majority of respondents, aged twenty-one to forty, were found to be drawn to FinTech (e-commerce and e-banking) technological innovation. However, the adoption of FinTech is hindered by poor internet and a lack of knowledge about its uses. While trust does not partially mediate between dependent and independent variables, attitude has a substantial impact on actual purchases.

2.3.2 Factors affecting adoption of Digital Wallets

Fig 4: Factors Affecting Adoption of Technology



Source: Literature Review

i. Convenient

Several of the researchers have identified convenience as a important factor for adoption, as reiterated by (Lichenstein, 2006). 24/7 Accessibility and saving in terms of time are prime drivers for adoption.

ii. Service Quality

It is essential to offer consumers the best possible services when it comes to digital wallets. There are many different criteria that influence high-quality services. These include things like delivery speed, reliability, usability, luxury, security and privacy, and ability to control the service. Because they are worried about how soon a service will be provided, customers tend to overestimate the processing time of services. Time is of the essence when it comes to providing services, and customers that utilize digital wallets must save time.

iii. Credibility

Consumer decisions about digital wallets may be influenced by worries about risk, privacy, security, and trust. Customers' trust in information systems is greatly increased when their accounts are secure and fraudulent activities are prevented, as per Chandio (2011). The rational deduction is that either digital businesses need to give their clients more confidence and trust, or technology need to be created with strong in-built security to safeguard users' privacy and the security of transactions that happen digitally. (Katsikas, 2005).

iv. Affordability

Affordability is a factor influencing the use of digital wallets. They have two advantages: first, there exists a pre conceived notion that internet expenses and charges are higher since digital payment transactions require internet connectivity; second, there aren't many transaction fees and costs associated with digital payments.

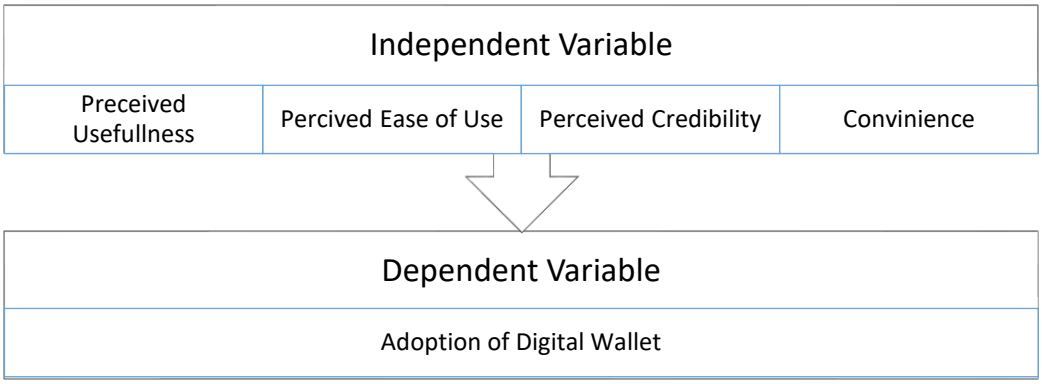
2.4 Conceptual Framework

A conceptual framework provides structure for thinking about the meaning and what has to be done while taking into account other people's perspectives and scholarly work. A framework might help shed light on the reasoning behind the methodology selected for a study. It can also help us make sense of and apply the ideas of those who have done similar things. A road map is comparable to a framework. The literature review

served as a guide for the creation of the conceptual model that is listed below. The model makes extensive use of the previously stated material. This study explicitly examines many variables as predictors for the uptake of digital wallets, such as dependability, accessibility, convenience, privacy, and security.

To fill in the research gaps, the study framework model that follows is recommended using the previously described literature review as a guide. To complete the gaps in research, the theoretical framework —as explained in the figure, has been identified based on the literature review, as seconded by Kamutuezu (2016) as well.

Fig 2.5: Theoretical Framework of the Study



Source: Author

The independent variables and the dependent variable of this study are all displayed in the conceptual framework. The interrelationship between the different variables employed in the study is explained by this conceptual framework. Perceived Credibility, Perceived usefulness, perceived ease of use, convenience, and the demographic factors were also taken into account while interpreting customer perception regarding adoption of digital wallets.

Dependent Variable: The dependent variable represents, the what is being studied from the research. In this framework adoption of digital wallets is a dependent variable.

i. Adoption of Digital Wallets

Digital wallet acceptance is a prerequisite for all four independent variables: utility, usability, credibility, and convenience. The latter factors will impact and influence users' judgements about whether or not to use digital wallets. In conclusion, participants

highly agreed with the findings that the adoption and use of digital wallets relied on all four independent variables.

Independent Variable: The independent variables are the influencers, which represents inputs or causes i.e. explanations for the variation. However, there are various aspects of digital wallets but this study has considered perceived usefulness, perceived ease of use, convenience, and perceived credibility as the major influencers for the adoption of digital wallet service.

i. Perceived Usefulness

Perceived utility is the most crucial factor in user adoption of a system. What makes a system valuable to users depends on its effectiveness, efficiency, and overall benefits in terms of improving user performance. The main idea behind TAM is that people's use of technology is mediated by their consent regarding the technology, based on two perceptive factors, perceived usefulness and perceived ease of use. Therefore, it describes the extent to which a person perceives that using that particular technology would make the caliber of their work, better. As a result, the more valuable a technology is, the more probable it is that people will desire to adopt it.

ii. Perceived Ease of Use

Perceived ease of use is correlated with how easy a technical procedure is to obtain and use. Davis first introduced the Technology Acceptance Model (TAM) in 1986. It states that one of the most crucial factors in evaluating whether consumers will accept a system is their assessment of its usefulness. Davis defined ease of use as the extent to which users believe a particular piece of technology will save them time or effort. Put another way, if a system seems welcoming to users, they are more inclined to use it. The central idea of the Technology Acceptance Model (TAM) is that an individual's utilization of technology is mediated by their consent regarding the technology, based on two perceptive factors, perceived usefulness (PU) and perceived ease of use (PEOU).

iii. Perceived Credibility

Observed The belief that someone else's word may be relied upon, especially under unforeseen circumstances, is known as credibility. Before registering on a digital wallet app, perceived reliability and credibility has a significant effect on consumer acceptability since individuals tend to stay away from providers, that lack trust. Credibility suggests that a user trusts an digital application and understands the dangers involved in utilizing it; these risks include risks relating to the funds, health, time, and personal information that is shared. Thus, privacy and security are two essential elements of perceived credibility.

iv. Convenience

The Convenience (CONV) also affects "the customer's attitude towards adoption of a new information system" to some extent. It has been asserted severally that it significantly affects how information systems are adopted. Consumer perceptions of digital payment services are influenced by a variety of factors, such as technology, security, convenience, comfort level with emerging technologies, and past experience. Time and effort to execute transactions seem to be the main emphasis of digital wallet services, with saving in terms of time and round-the-clock accessibility emerging as the two biggest advantages. The convenience characteristics of digital payments will be valued more and more as individuals become more aware of their spare time and leisure activities.

2.5 Research Gap

Competition from the Banks and the need to improve the value of their services over time are putting pressure on digital wallets. Asking what drives performance is the first step towards understanding and achieving extraordinary performance. There has never been a study on the adoption of digital wallets in Nepal; this one is the first to look at the topic. The goal of this study is to fill in the gaps in the literature and finish the previous research on digital wallets and payments in Nepal.

This study reported on and studied the developments in digital payments to close a knowledge gap between researchers and the Nepalese public. The goal of this study is to close that gap. Finding the factors that might affect consumers' inclination to use digital wallets in Nepal is the goal of the study. The study examines significant factors that impact a decision to adopt e-wallets in Nepal.

CHAPTER: III

RESEARCH METHODOLOGY

This chapter contains the procedures used to conduct the study. It describes all of the many actions and processes that were needed to finish the study. It explains the techniques and strategies used for gathering, processing, and analyzing the data. There are sections on the research design, population, sample size, sample design, data collection, and various flavors of data analysis

3.1 Research Design

Finding a response to the study question and managing variation are the two main objectives of research design. It comprises the investigation's strategy, plan, and organization. (Kerlinger, 1980). The plan refers to the primary program or design of the investigation. A study design outlines the structure of the problem and the line of inquiry that will be utilized to collect information or make links between the challenges. A research design is a strategy for gathering and using data that helps a researcher to collect the necessary data accurately such that they can sufficiently test the desired hypothesis. This study employed a number of strategies to guarantee that the data was complete and correct like that of Wetherbe (2012). The investigation was conducted using both descriptive and analytical methodologies.

3.2 Description of Sample

i. Population

Since this research was done to explain the adoption of digital wallets. The target population for this study are the avid digital wallet users from Nepal.

ii. Sample Size

The researcher made and distributed a total of 380 sets of questionnaires, making the sample size of 380. This sample represents the population.

iii. Sampling Techniques

The research questions were given to persons of various ages in order to gather data. However, the age groupings of people who use digital wallets were the most desired ones. In a similar vein, this technique was suited for the study because of time and resource constraints. Respondents with known email addresses were given questionnaires in person and via social media platforms like Facebook, Instagram, and Viber.

3.3 Instrumentation

Data were collected via a self-administered questionnaire. Researchers utilise questionnaires, which are collections of written questions, to collect and record the data necessary for their investigations. In response, respondents answered inquiries designed to gauge important aspects of the study. After data has been gathered, various measurements are used to assess the standard of the information. The study's questionnaire that was distributed was based on the questionnaire from an article of Falahat (2019). Additionally, the same questionnaire was further used in the article of Arsiwala (2020). The questionnaire was inspired from a variety of other articles relating to digital wallets.

The questionnaire was divided into two pieces. The demographic characteristics of the respondents—including their gender, age, level of education, and occupation—are covered by the questions in the first part. The remaining section consists of questions that measure the independent and dependent variables. Respondents received the questionnaires via Facebook, Instagram, and emails. Respondents were given a clear explanation of the study's purpose on the questionnaire page.

Five-point Likert scale rating questions were included in the survey. The Likert scale, named for its inventor Rennis, is a widely used rating system that asks participants to indicate how much they agree or reject a series of claims. Each scale item response is categorized, ranging from 1 for "Strongly Disagree" to 5 for "Strongly Agree".

3.4 Organization, Management and processing of the Data

Data will be managed as per the need of the study. Presentation and the analysis of the available data is the major task of the study.

3.5 Tools and Method of Data Analysis

The study used both descriptive and analytical approach of data analysis. Under descriptive analysis of the data different graphs, tables and figures will be used to analyze trend/ distribution of digital payment instruments.

For data analysis, the responses were pumped into Excel and then transformed into Stata software as data. Stata will be used, to perform complex statistical data analysis. It is an easy-to-use software, which is very popular for its data reporting and visualization capabilities. Stata software is used for various in-depth statistical data analysis calculations such as Cronbach's alpha test, Correlation Analysis and Multivariate OLS Regression applied in this study.

3.5.1 Descriptive Analysis

Descriptive analysis was used to describe the demographic characteristics of the respondents, the factors impacting the adoption of digital wallet and the other independent variables. The variables in the use were described by medians, standard deviation, frequencies, and percentages.

3.5.2 Correlation Analysis

One way to ascertain the kind and strength of a relationship between a group of variables is through correlation analysis. Pearson Spearman The correlation coefficient was used to explain the link between the independent and dependent variables.

3.5.3 Regression Analysis

A statistical technique called regression analysis is employed to look at the connection between one or more independent variables and a dependent variable. As The link between one independent variable and one dependent variable is examined using simple linear regression. This kind of study may be expanded upon with multi-linear regression. Multi-linear regression involves one dependent variable and several

independent variables. The goal is to model the linear relationship that exists between the independent and dependent variables. The recommended multivariate regression model is as follows:

$$Y = \alpha + \beta 1X1 + \beta 2X2 + \ldots.. + \beta pXp + ei \qquad (i)$$

where, Y = the predicted value of the dependent variable

X1,X2….Xp = the exact value of independent variables of the study

α = value of Y when all of the independent variables (X1through X2) are zero (the Y-intercept)

β1,β2, ,βp= the estimated regression coefficients (gradients)

ei= Error Term

Based on the above equation (i), the required multi variate regression equation-based model is

$$ADOP = \alpha + \beta 1PU + \beta 2PEoU + \beta 3PCRED + \beta 4C + ei$$

Where, Dependent Variable:

Y = ADOP (Adoption of Digital Wallet)

Independent Variables:

X1= PU = Perceived Usefulness

X2= PEOU = Perceived Ease of Use

X3= PCRED = Perceived Credibility

X4 =CONV = Convenience

CHAPTER IV

RESULTS AND DISCUSSIONS

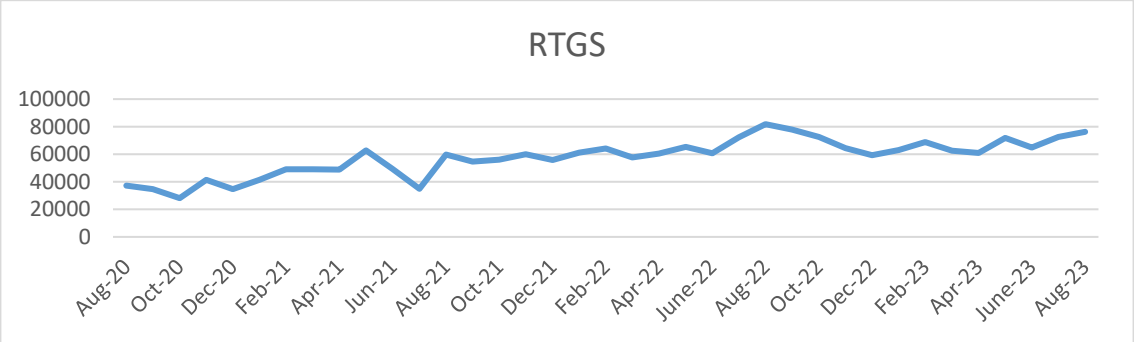
This chapter includes a discussion of the study's significant findings and data analysis. The data from the respondents will be examined in Stata using statistical techniques like frequencies, charts, percentages, averages, standard deviations, correlations, and regression analysis. In a similar vein, the results are summarized to aid in the comprehension of the research. The study's theories were tested through data analysis. To meet the goals of the research, data analysis was also done.

4.1 Trends of Various Payment Instruments

i. RTGS – Stands for Realtime Gross Settlement System:

The RTGS system is run by Nepal Rastra Bank (NRB). All Nepalese commercial banks and financial institutions can utilize the system to electronically transfer money between accounts. Through the BFIs, the facility is open to the general public. From Sunday to Friday, from 9:00 AM to 3:00 PM, the RTGS system in Nepal is open for business (except public holidays). Depending on how much money is being transferred, different fees apply in Nepal while using the RTGS system. The fee is NPR 500 for transactions up to NPR 10 million (about USD 84,000), approximately USD 4. Banks and other financial institutions in Nepal utilize the RTGS technology extensively for electronic payment transfers between accounts, especially.

Fig 4.1: Trend on Monthly Number of Transactions of RTGS

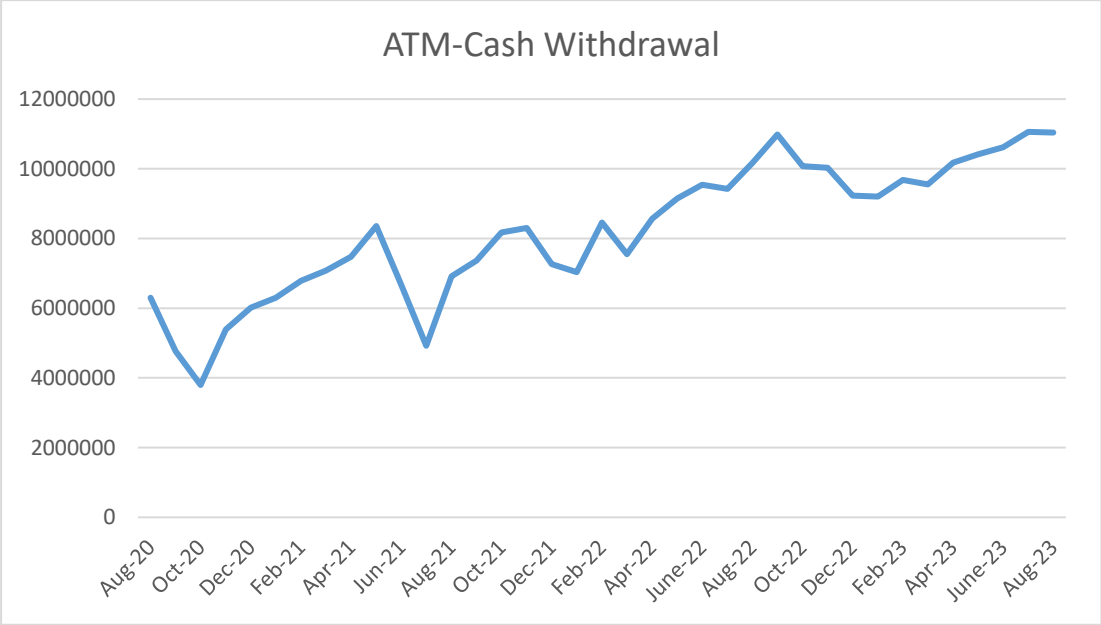


Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

ii. ATM-Cash Withdrawal

ATM withdrawal is a transaction made at an automated teller machine to receive a cash advance. People can carry out simple financial transactions using an automated teller machine (ATM), an electronic banking facility, without the assistance of a branch person or teller. In 1990, Himalayan Bank Limited unveiled Nepal's first Automated Teller Machine (ATM) (2052 B.S.). If we use an ATM from another bank to withdraw cash, there is a specific amount of fee; however, there would be no fee if we used our own bank. ATM In Nepal, 33% of people use ATMs. The Daily ATM withdrawal Limit from Nepal (Own ATM & Others) is NRP 1,00,000 and for Monthly is 10,00,000. Where as NRP 25,000 is maximum withdrawal limit for one time.

Fig 4.2: Trend on Monthly Number of Transactions of ATM Cash Withdrawal



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

iii. ECC

The ECC system, stands for Electronic Cheque Clearance System is an image-based approach to processing checks that transfers original paper cheques between participating member banks and financial institutions via a protected media after

being converted into an image for electronic processing. At the level of the presenting bank branch, the physical movement of the checks is cut off or stopped. The processing of cheque transactions is sped up and made easier because the actual cheque does not need to travel to the clearing house or the paying bank. NCHL operates the ECC in Nepal.

For standard (MICR encoded) cheques, NCHL-ECC now enables the clearing of cheques in the following four currencies: NPR, USD, GBP, and EUR. The presentment cut-off time is at 15:00, the paying bank response cut-off time is at 17:00, and the final settlement is at 17:15. For Winter, the deadline for responses is 16:00. There is other shorter-duration clearing options like Fast Clearings and High Value Clearing.

Various clearing services in the NCHL-ECC system and their features are as follows:

Regular Cheque Clearing

This is an electronic check clearing service for checks in NPR, USD, GBP, and EUR. To use this service, participating members must have a settlement account with Nepal Rastra Bank in the appropriate currency. Cheques up to NPR 200 million can be cleared electronically through regular NPR check clearing. Cheques up to $2 million can be cleared by regular FCY electronic check clearing for checks in USD, GBP, and EUR.

Express Cheque Clearing

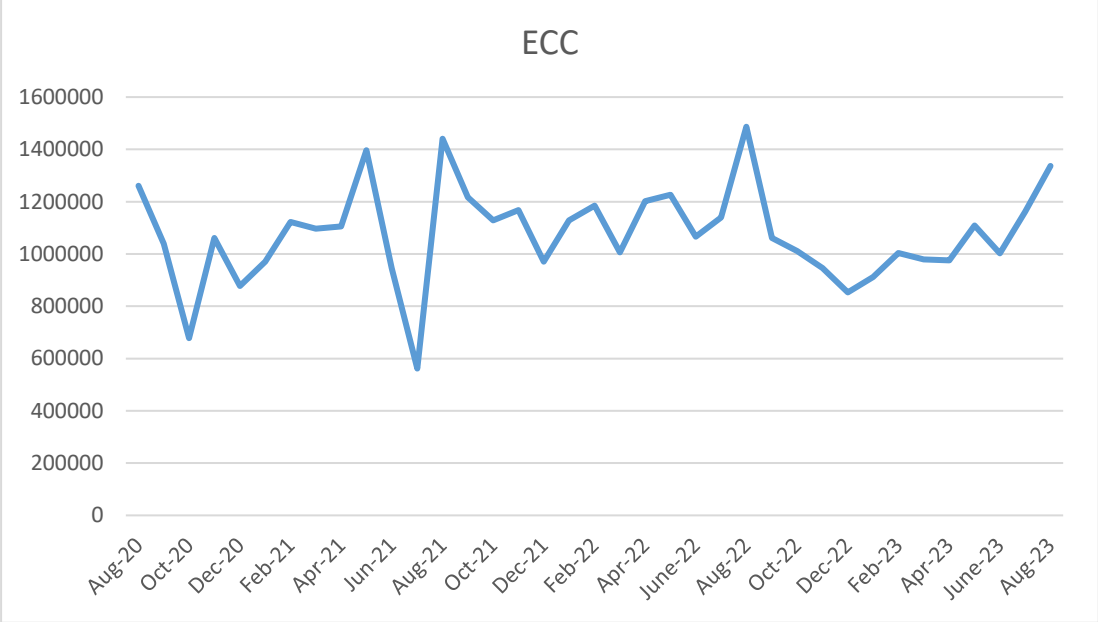
The express check clearing service is a unique, quick-acting system for the presentation, response, and settlement of checks. Its 2-hour presentment to final settlement window enables BFIs and their clients to present and realize checks more quickly. Four express clearing sessions are currently available for the four currencies NPR, USD, GBP, and EUR. First, second, and third express sessions are available for FCY and NPR from Monday through Friday (USD, GBP and EUR). NPR and FCY are scheduled for the 4th express session from Sunday through Thursday,

respectively (USD, GBP and EUR). The fourth express clearing session, however, is not currently active.

High Value Cheque Clearing

This is a special clearing session for processing big value checks with checks totaling more than NPR 200,000,000 and up to NPR 300,000,000 for NPR checks and more than NPR 2,000,000 and up to NPR 3,000,000 for USD, GBP, and EUR checks. There are two high value check clearing sessions going on right now. The first high value session is offered from Sunday to Friday, while the second high value session is offered from Sunday to Thursday. NPR high value sessions start on Sunday, and FCY (USD, GBP, and EUR) sessions start on Monday.

Fig 4.3: Trend on Monthly Number of Transactions of ECC (Electronic Cheque Clearance)



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

iv. IPS

The NCHL-IPS system for large-volume transaction clearing gives participating members a way to quickly and safely transfer money from one account to another account maintained at any other participating member bank or financial institution

(BFI) on behalf of their clients or for their own use. On a deferred net settlement basis, it facilitates account to account payments (direct credit) and collection (direct debit) related processes. One-to-one, recurring, or bulk transactions (up to 10,000 transactions) are all possible for these transactions. The underlying transaction may be for a variety of things that are classified as products. Exchange sessions are automatically provided to the earliest available exchange session and are mapped to the NCHL-IPS products.

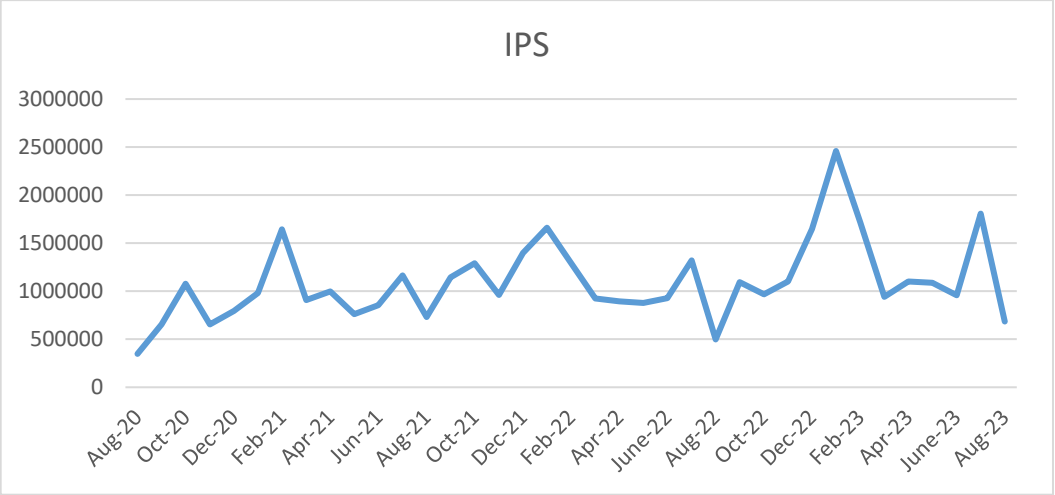
Table 4.1: Charges of IPS (Interbank Payment System)

S.No.	Price Scheme	Transaction Amount Based Slab		
		Upto 500	>500-50,000	>50,000
1	NPR Transactions	2	5	10
2	NPR Transactions (Fee in NPR) PFDS and PFSA	10		
3	FCY Transactions (Fee in NPR)	10		

Source: NCHL Annual Report 2023

Currently, NCHL-IPS enables transactions in the following four currencies: NPR, USD, GBP, and EUR. Transactions processed up until the cutoff time of 17:00 and the reply cutoff time of 17:30 are settled on the same day in NCHL-(T+0) IPS's settlement model. There are now 6 debit category reasons and 25 direct credit category purposes available in the system. NPR Exchange Sessions are available from Sunday to Thursday and FCY Exchange Sessions are available from Monday to Thursday with presentment up to 17:00 and last settlement on 18:00. However, foreign currency sessions are not available on Sunday. Similarly, Exchange Sessions 10 (funding) are available from Sunday to Thursday for both NPR and FCY except that FCY sessions are not available on Sunday. Exchange Session for both NPR and FCY for Friday are available with presentment up to 13:00 and last settlement at 14:00. The transaction sessions of shorter durations are also available for specific products (purposes) that provides near-real time settlements of the transactions. The cut-off timings set by the member BFIs could be different depending on their internal operational arrangements for NCHL-IPS system.

Fig 4.4: Trend on Monthly Number of Transactions of IPS



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

v. ConnectIPS

Designed as a standardized, single payment platform for real-time retail purchases, the connectIPS e-Payment System is a quicker payment system. It offers numerous channels, including a web portal, a mobile app, a payment gateway, and open APIs, for clients of BFIs to start and complete real-time transactions. Using the Bank Central Module, the system has also been expanded in a branch assisted model for payment initiation from bank branches, allowing the bank branches to carry out such transactions in response to instructions from their clients.

Table 4.2: Charges on Connect IPS Services

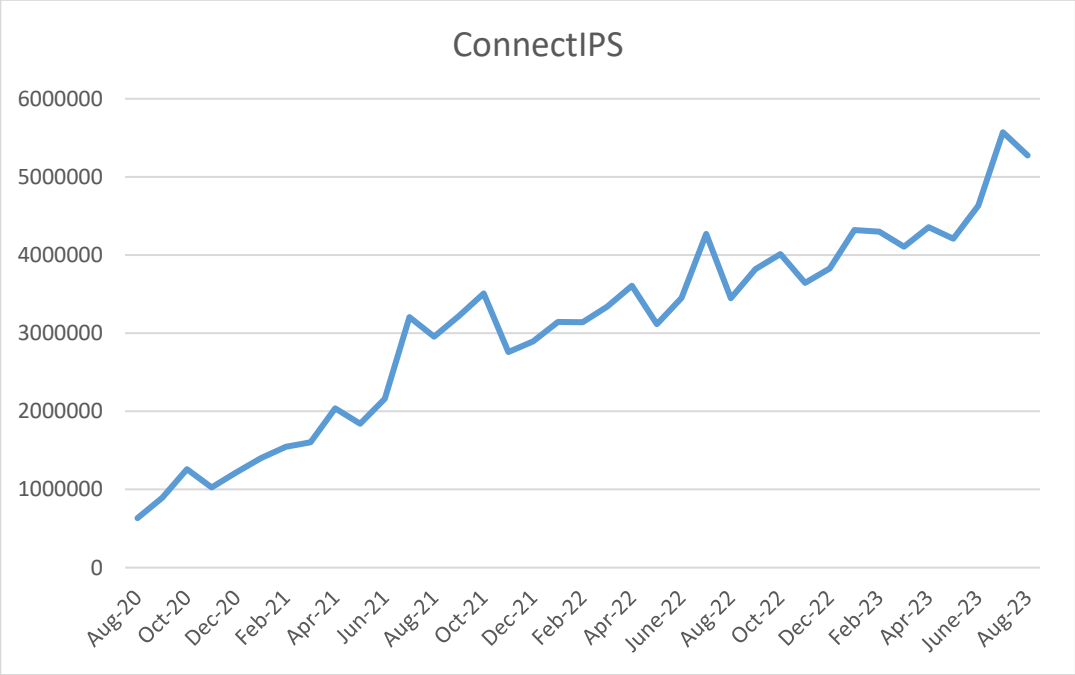
S. No.	**Particulars**	**Transaction Amount Based Slab**		
		Up to 500	**>500-5,000**	**>5,000**
1	Fund Transfer	2	4	8
2	Special Creditors/Merchants	2	4	8

Source: NCHL Annual Report 2023

For a user to link several bank accounts, they must enroll in the system and submit each bank with a one-time verification request (either manually from the bank or voluntarily from the user). It is accessible through www.connectips.com as well as

an iOS and Android mobile app. The connectIPS e-Payment transaction cap is NPR 2,000,000 via web channel and NPR 200,000 via mobile app. Fund transfers and service payments are handled through the platform. The majority of e-commerce portals have connectIPS' payment gateway connected, and the APIs are integrated with BFIs' alternative delivery routes and wallets for cashing in and out and transferring funds. A total of 896,341 customers of the BFIs were registered with 1,322,330 linked bank accounts with connectIPS by the end of the Financial Year 2078/79.

Fig 4.5: Trend on Monthly Number of Transactions of Connect IPS



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

vi. Debit Cards

When a debit card is used, money is immediately taken out of the user's checking account. They are also known as "check cards" or "bank cards," and they may be used to make purchases of products and services, as well as to withdraw cash from an ATM or a business that will allow you add more money to a transaction. Debit cards often don't incur any additional fees. They don't always let you totally avoid expenses, though: You can be charged an ATM transaction fee if you use an ATM that is not owned by or connected to the bank that issued your debit card to withdraw cash. The

daily cap on transactions is NPR 100,000. According to the Department of Statistics' 2021 Census report and a study released by Nepal Rastra Bank, 33.76 percent of Nepal's population now has debit cards.

Table 4.3: Debit Card Subscription and Transaction fees

Card Service Fees

	SCT – UPI Card / VISA Card	
Card Issuance Fee	Option 1: If upfront Payment	Rs. 1500
Card Replacement Fee	Option 2: If Payment on installment	Rs. 400/- every year for four years
Card Re-Issuance Fee		
PIN Re-Generation Fee	100	100

Transaction Fees

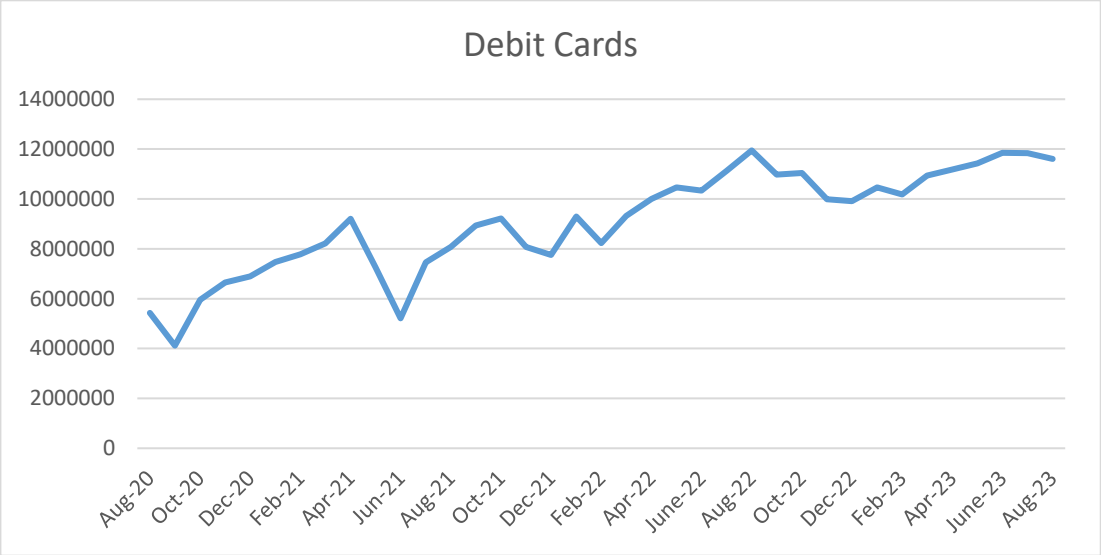
Sr. No.	Transaction	SCT-UPI Card / VISA Card	
		ATM / POS Type	
1	Cash withdraw	EBL ATM	–
		ATM, Nepal	15
		ATM, India	300
2	Balance Inquiry	EBL ATM	–
		Nepal	15
		India	50
3	Purchase (POS)	NIL	

** Exchange Trading @ 0.15% of transaction amount is applicable for transaction done in India.

Source: Everest Bank, Fees and Services, 2023

The debit card functions as an electronic check, giving direct access to bank account so the user can meet your everyday cash and payment needs. It is a substitute for cash and checks that enables withdrawal of money from ATMs or to pay directly at POS Outlets when making purchases of goods and services.

Fig 4.6: Trend on Monthly Number of Debit Card Transactions



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

vii. Credit Cards

Table 4.4: Fees related to Credit Card

Card Service Fee & Charges

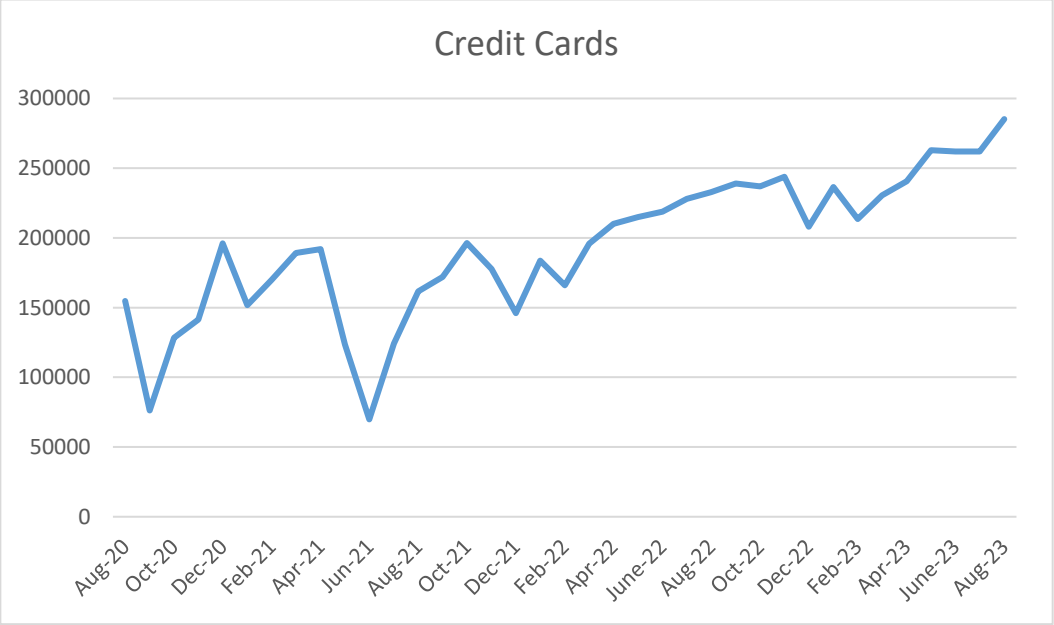
Card Issuance Fee	NPR 300
Card Annual / Renewal Fee	NPR 500
Card Replacement Fee	NPR 300
Card Re-Issuance Fee	NPR 300
PIN Re-Generation Fee	NPR 100
Dispute management Fee	As per Visa Rule
Late Payment Charge	NPR 250
Over Limit Fee	NPR 500 per month
Auto Pay Failure Fee	NPR 250
Statement Copy Fee	NPR 100 per copy (First Statement Free)
Limit Enhancement Fee	NPR 200

Source: Everest Bank, Fee and Services, 2023

A credit card is an electronic check that you can use to pay for purchases made at retail stores and to withdraw cash from ATMs. The cardholder receives a line of credit from the bank that can be used to make cash advances or build revolving accounts to pay for goods and services from merchants. In general, Visa Worldwide-affiliated ATM & POS Networks may be found all over Nepal and India and accept credit cards.

A credit card enables its holder to borrow money to pay for products and services at businesses that accept credit cards. Credit cards impose the need that cardholders repay the borrowed funds, plus any applicable interest and any other agreed-upon charges, in full or over time, either by the billing date or later. Limit on Credit Cards: NPR 20,000 to 5,000,000. In Nepal, 1.87 percent of individuals use credit cards. 750 is the standard charge for making credit card.

Fig 4.7: Trend on Monthly Number of Credit Card Transactions



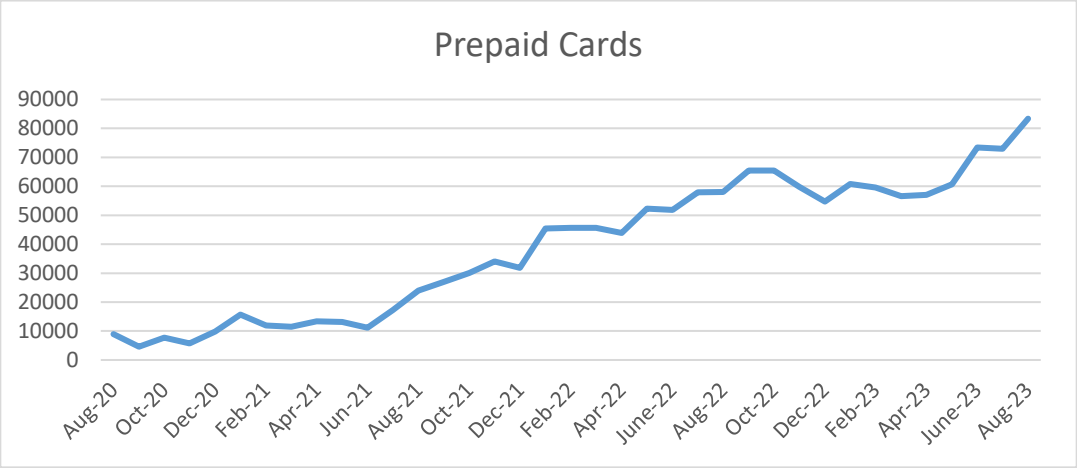
Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

viii. Prepaid Cards

A card with money preloaded on it is purchased, this resembles that of a debit card. And is similarly used in the machines that accept such. However, the key difference is that a debit card is linked with a Bank Account, while the Prepaid Card needs to be

separately topped up, once the preloaded money is exhausted while making transactions through the same.

Fig 4.8: Trend on Monthly Number of Prepaid Card Transactions

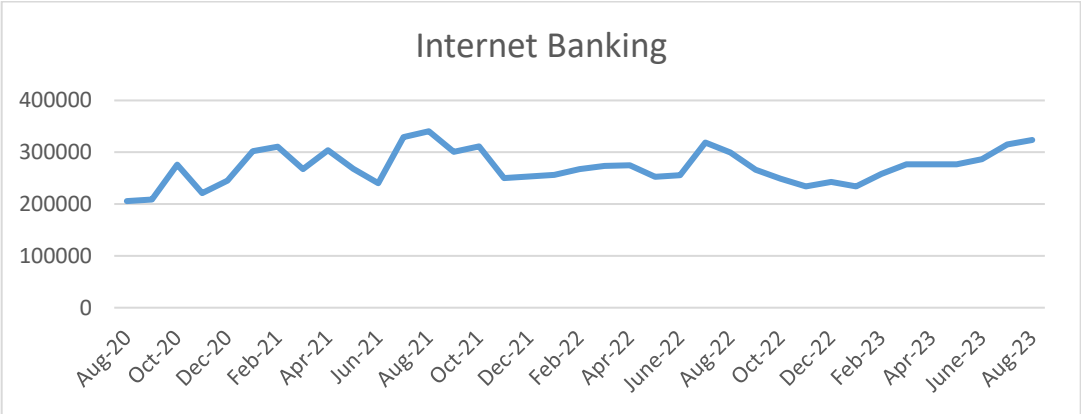


Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

ix. Internet Banking

This is a service that makes it easier to do bank transactions online from a computer, laptop, mobile device, etc.

Fig 4.9: Trend on Monthly Number of Internet Banking Transactions



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

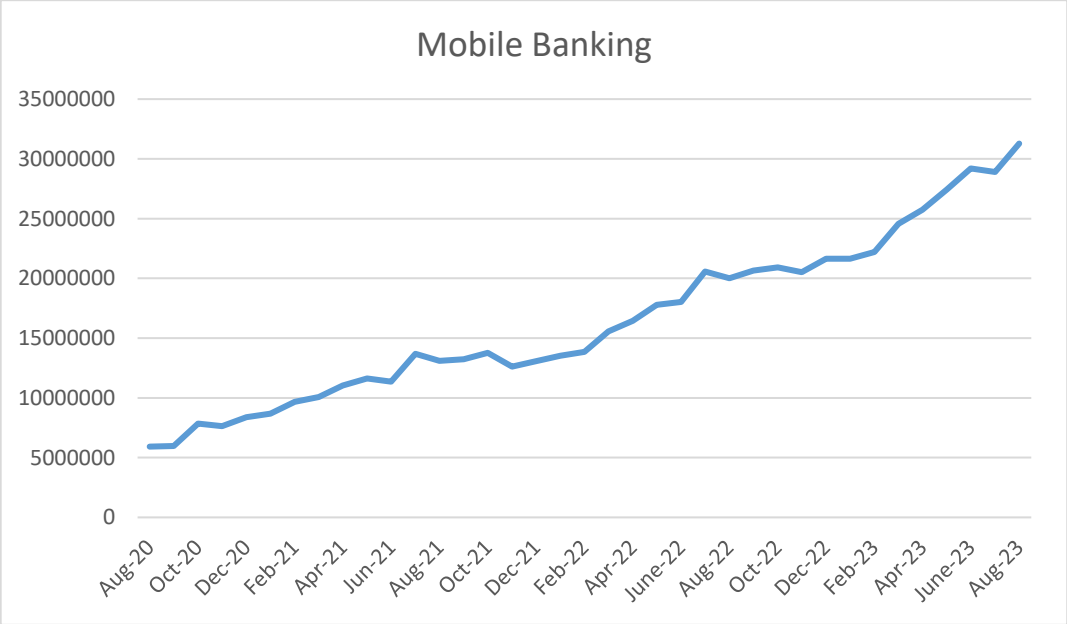
Customers can see information related to their bank accounts, make funds transfer between accounts, and pay for any utility and other bill payments offered by the bank.

The majority of banks in Nepal provides online services. Approximately 9,92,724 people utilize the internet, according to Nepal Rastra Bank. The daily cap on transactions using mobile banking channels is NRs. 200,000.

x. Mobile Banking

Customers may use their mobile phone to do banking activities thanks to this service. It is possible to do so using both SMS and mobile applications. Mobile banking service often provides services including utility and other bill payments, mobile recharges, account information view, fund transfers, and contact with the bank. In Nepal, this service was originally introduced by Laxmi Bank Limited in 2004, and the majority of class "A" banks currently provide it. In the past two to three years, mobile banking has grown rapidly. In Nepal, there are 1,06,70,072 users of mobile banking as of mid-April 2020.

Fig 4.10: Trend on Monthly Number of Internet Banking Transactions

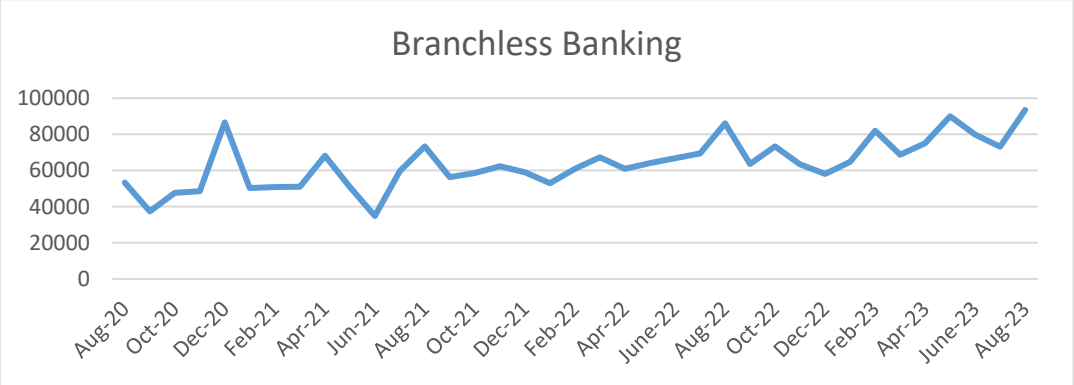


Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

xi. Branchless Banking

Customers who do not have access to the bank's branches can use the branchless banking service. It improves the unbanked communities' access to financial services. The bank's service is provided by the authorized agent using a registered tablet phone or EFTPOS device. Cooperatives and microfinance organizations are embracing Tablet Banking as a practical answer to the difficulties of operating and running branches in rural regions with few consumers.

Fig 4.11: Trend on Monthly Number of Branchless Banking Transactions



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

xii. Wallet

One of the most popular digital payment instrument in Nepal is the digital/mobile/ electronic wallet. Customers can use it to store money without having a bank account in their cellphone number. Customers of digital wallets have to load funds from their own bank accounts and utilize those funds to make purchases of products and services. Digital wallets are accessible to users with and without bank accounts. Additionally, it may be utilized to offer banking services to clients without a bank account. In Nepal, digital wallets are the same as digital payments. The Nepal Rasta Bank has granted licenses to a total of 10 Payment Service Operators (PSOs) and 27 Payment Service Providers (PSPs), as of Mid-October 2023. This can be a fantastic tool for financial inclusion given that the usage of cellphones is rising in Nepal and creating banks and bank offices is challenging owing to the country's physical topography.

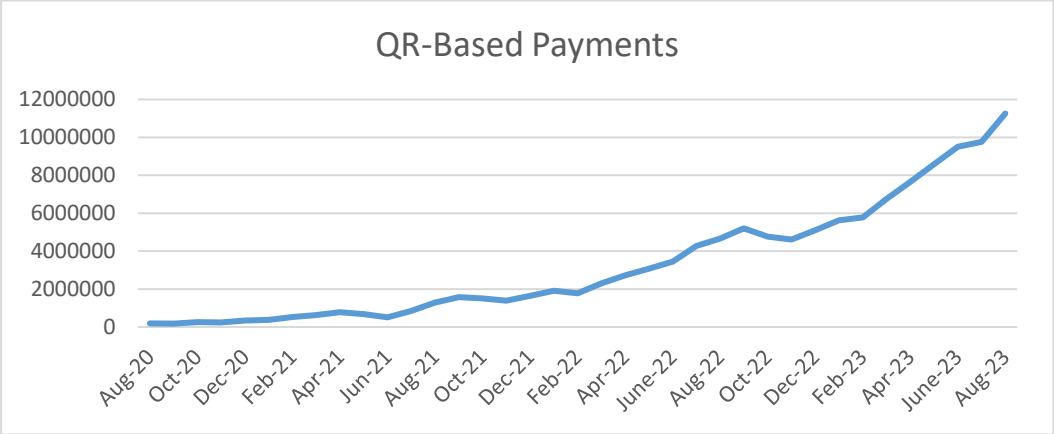
Fig 4.12: Trend on Monthly Number of Wallet Transactions

Source: Nepal Rastra Bank Database on Nepalese Economy, 2023

xiii. QR-Based Payments

Banks have made QR payment technology available through the mobile banking channel. With this technology, only a smartphone's camera can read a QR code, which is a digital picture with black and white dots that contains specific information. Customers may easily make mobile payments by scanning a QR code at a retailer

Fig 4.13: Trend on Monthly Number of QR Based Transactions

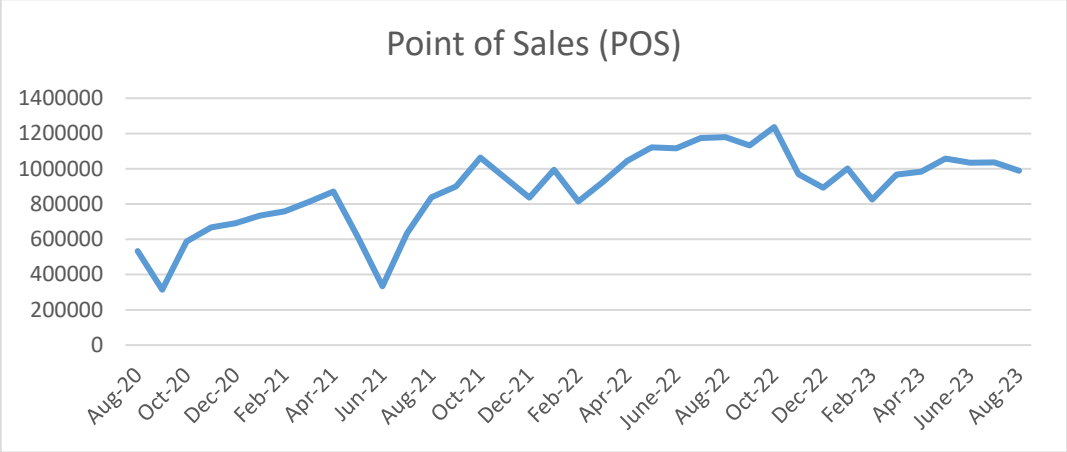


Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

xiv. Point of Sales (POS)

A point-of-sale (PoS) machine is an electronic device put at a merchant to process card payments and allow consumers to make cashless transactions. The primary function of POS is to automate the sales process and maintain an accurate record of all transactions. There are about 12-thousand machine in Nepal where it was first launched by Standard chartered bank. Banks typically charge between 1% and 3% on every POS transaction.

Fig 4.13: Trend on Monthly Number of POS Transactions

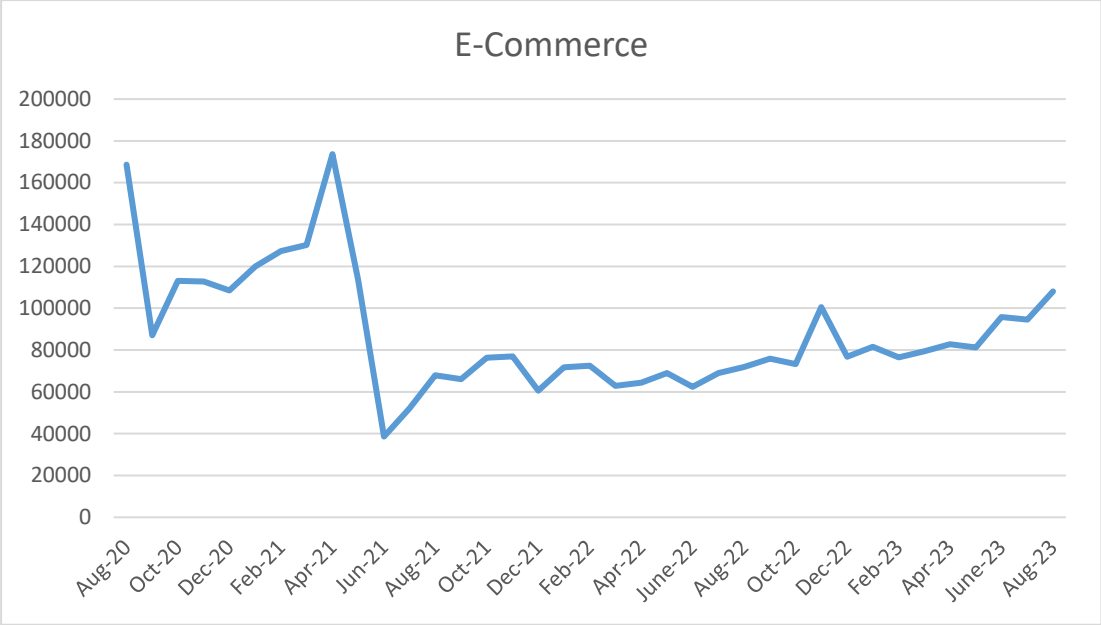


Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

xv. E-Commerce

E- Commerce is an emerging use case of digital payments in Nepal. Ecommerce, often known as electronic commerce or online commerce, refers to the purchase and sale of products or services through the internet, as well as the transmission of money and data to complete these transactions. E-commerce was developed in Nepal with the goal of allowing Nepalis living abroad to send presents to their family, friends, and relatives in Nepal. The transition from physical to virtual retailers began in the late 1990s. Online shopping sites in Nepal, such as Daraz, Hamrobazar, SastoDeal, and many others, grew their business during the epidemic, and it appears to be rising even now. Since the start of the epidemic, 70% of total transactions have been conducted online.

Fig 4.15: Trend on Monthly Number of E-commerce Transactions

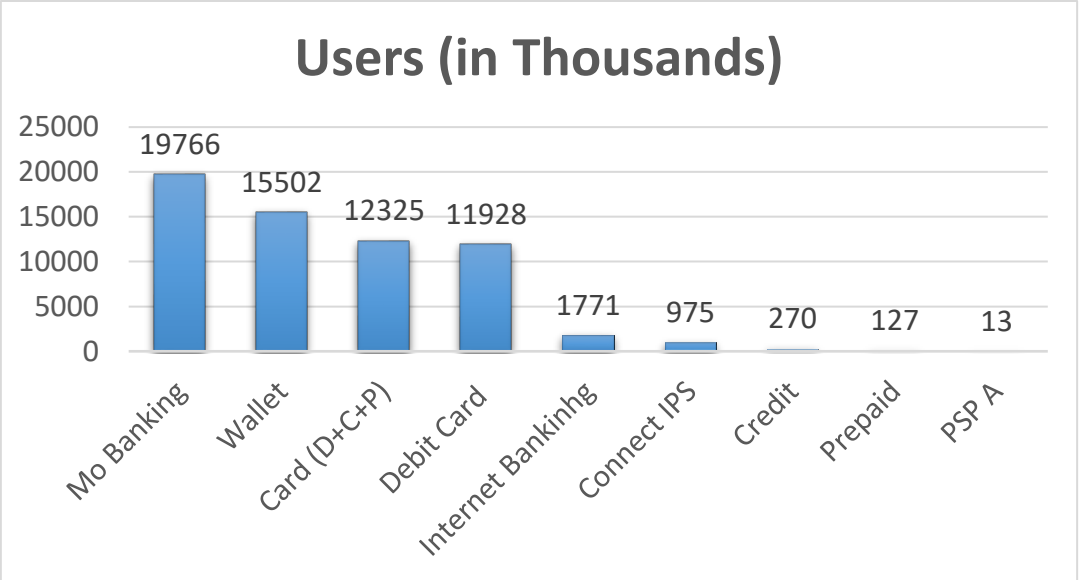


Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

4.1.1 Discussion on Digital Payment Trends

Bringing the information together with respect to various Payment instruments we can make the following inferences. The two most popular non-cash payment instruments are Mobile Banking and Digital Wallet, with 19,766 and 15,502 thousand users, respectively. This indicates that mobile-based payment methods are becoming increasingly popular among consumers. Card-based payments (Debit, Credit, and Prepaid) have a combined user base of 12,325 thousand. This suggests that card-based payments are still widely used but may be losing market share to mobile and digital wallet-based payments. Internet Banking and Connect IPS have relatively lower user bases of 1,771 and 975 thousand, respectively. This may be due to the increasing popularity of mobile-based payments, which offer greater convenience and flexibility. The number of users for Credit and Prepaid cards is relatively low at 270 and 127 thousand, respectively. This may be due to the limited acceptance of these cards, as they may not be as widely accepted as Debit cards.

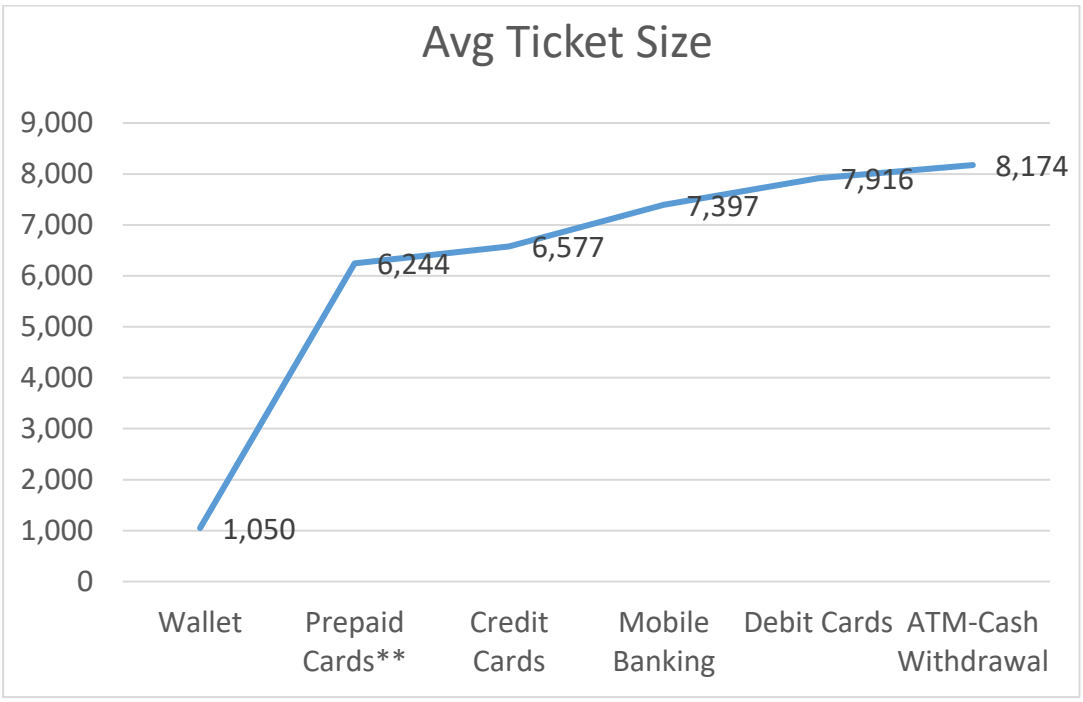
Fig 4.16: Numbers of Users across various Digital Payment Instruments



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

The highest average transaction size is for ATM-Cash Withdrawal at 8,174 units. This is not surprising since this payment instrument is typically used for larger transactions, such as withdrawing cash for major purchases or expenses. Debit Cards and Mobile Banking have the second and third-highest average transaction size at 7,916 and 7,397 units, respectively. This suggests that consumers are comfortable making larger transactions using these payment instruments. Credit Cards and Prepaid Cards have relatively lower average transaction sizes at 6,577 and 6,244 units, respectively. This may be due to the fact that consumers typically use credit cards for smaller purchases or to pay off recurring bills, while prepaid cards may be used more for budgeting purposes. The lowest average transaction size is for Wallet-based transactions at 1,050 units. This is not surprising, as wallet-based transactions are typically used for smaller purchases such as paying for coffee or snacks.

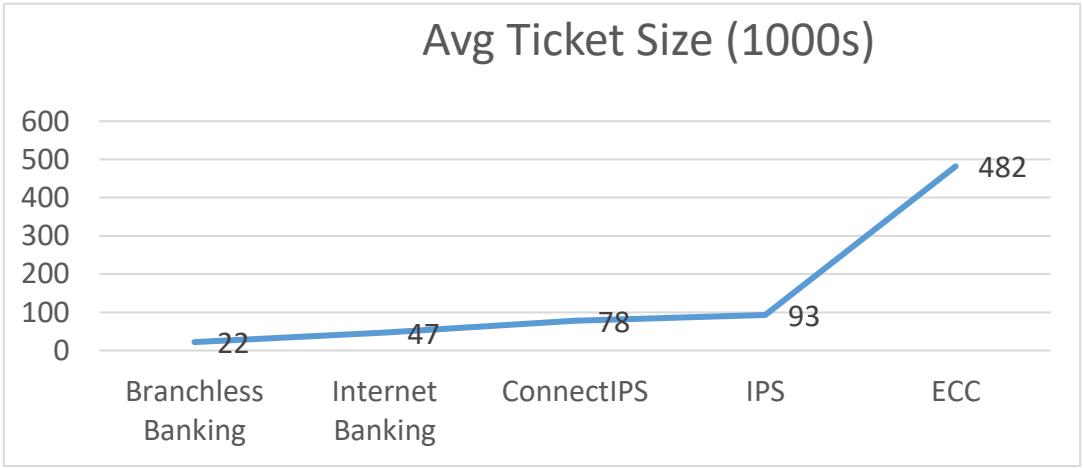
Fig 4.17: Average ticket (Transaction) amount across various Digital Payment Instruments



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

Overall, the data suggests that payment instruments such as ATM-Cash Withdrawal, Debit Cards, and Mobile Banking are being used for larger transactions, while credit and prepaid cards are more commonly used for smaller transactions. Wallet-based transactions, on the other hand, are used for the smallest transactions.

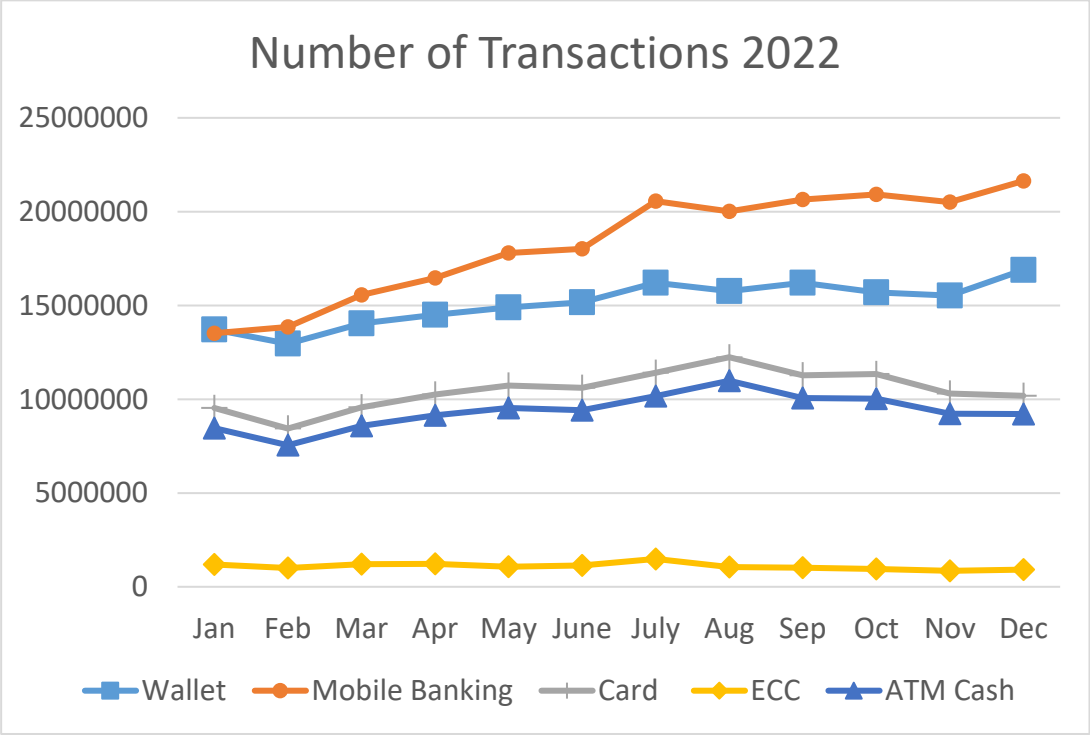
Fig 4.18: Average ticket (Transaction) amount across various Digital Payment Instruments



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

The highest average transaction size is for ECC (Electronic Cheque Clearing) at 482,000 units. This is likely due to the fact that ECC is primarily used for large transactions, such as business-to-business payments. IPS (Interbank Payment System) and ConnectIPS have relatively high average transaction sizes at 93,000 and 78,000 units, respectively. This may be due to the fact that these payment instruments are commonly used for fund transfers between banks or financial institutions. Internet Banking has a relatively moderate average transaction size at 47,000 units. This suggests that this payment instrument may be used for a range of transactions, including both small and large payments. The lowest average transaction size is for Branchless Banking at 22,000 units. This may be due to the fact that branchless banking is typically used in rural areas or by individuals with low-income, where smaller transactions are more common. Overall, the data suggests that different payment instruments are used for transactions of varying sizes. Payment instruments like ECC, IPS, and ConnectIPS are used for larger transactions, while internet banking and branchless banking are used for smaller transactions.

Fig 4.19: Number of Transactions across various Digital Payment Instruments

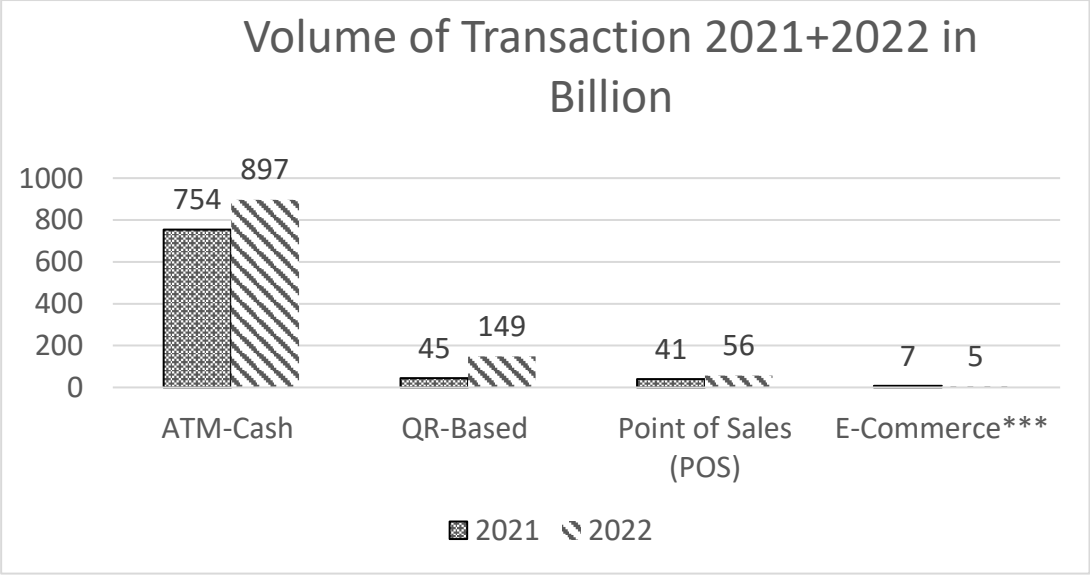


Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

Looking at the data, we can see that all payment instruments experienced an increase in the number of transactions from January to July, and then a decline from August to December. However, there are some interesting variations among the payment instruments. Wallet, mobile banking, and card-based transactions (debit, credit, and prepaid) all experienced a steady increase in the number of transactions throughout the year, with mobile banking showing the highest growth rate. This suggests that consumers are increasingly adopting digital payment methods, possibly due to the ongoing pandemic and the need for contactless payments. On the other hand, ECC and ATM cash transactions showed a decrease in the number of transactions from August to December, which could be attributed to the increasing use of digital payment methods. The peak in ATM cash transactions in May could be related to the Nepalese New Year, which falls during this month and may lead to increased cash withdrawals for spending on festivities.

Overall, the data suggests a shift towards digital payment methods in Nepal, with mobile banking and digital wallets showing the highest growth rates. This trend is likely to continue as consumers become more accustomed to digital payments and the convenience they offer.

Fig 4.20: Volume of Transactions across various Digital Payment Use Cases

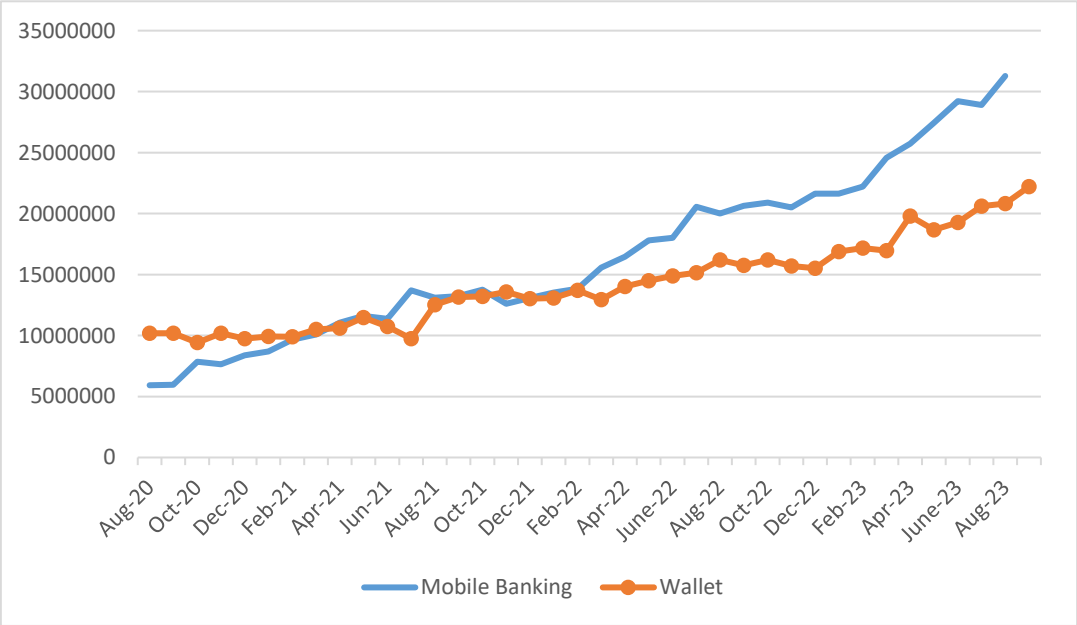


Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023)

The given data represents the volume of transactions for different payment use cases in 2021 and 2022. The number of ATM-Cash transactions increased from 754 in 2021 to 897 in 2022, indicating that cash is still widely used in transactions. The number of QR-based transactions increased from 45 in 2021 to 149 in 2022, indicating that QR-based payments are becoming more popular. The number of Point of Sales (POS) transactions also increased from 41 in 2021 to 56 in 2022, indicating that card-based payments are gaining more acceptance. The number of E-commerce transactions decreased from 7 in 2021 to 5 in 2022, which is a relatively small number. It may suggest that E-commerce is still at an early stage of development or not yet widely adopted in the given context. Overall, the data shows that the number of transactions is increasing for all payment use cases except for E-commerce. In summary, the data suggests that cash is still a widely used payment method, but digital payment methods like QR-based and card-based transactions are gaining popularity. While E-commerce is not yet widely adopted, there may be potential for growth in the future.

Comparing the number of transactions among Mobile Banking and Digital Wallets

Fig 4.21: Number of Transactions across Mobile Banking and Digital Wallets



Source: Nepal Rastra Bank, Database on Nepalese Economy, 2023

Comparing the services available across Mobile Banking and Digital Wallet

There is almost no difference in the payment services offered by Digital Wallets and Mobile Banking, however people could be unaware about this fact. Here we have compared payment service of 4 Mobile Banking Applications and 3 Digital Wallet Applications, which have more than 1 million Downloads in Google Play store, and from direct observation we could see the following:

Table 4.5: Service Availability Across Various Applications

Service	NICAsia	Global	NBL	Kumari	Esewa	Khalti	IMEPay
Topup	2	2	2	2	2	2	2
Landline	Yes		Yes	Yes	Yes	Yes	Yes
Recharge Card	Yes	N/A	N/A	Yes	Yes	N/A	Yes
Data Pack	2	2	N/A	Yes	Yes	Yes	Yes
Remittances	Yes	Yes	N/A	Yes	Yes	Yes	Yes
Electricity	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Khanepani	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISP internet	19	22	19	19	107	88	27
TVs	7	7	7	7	47	18	9
Movie	N/A	N/A	N/A	N/A	Yes	Yes	Yes
Bus Ticketing	Yes	N/A	Yes	Yes	Yes	Yes	Yes
Airline	Yes	Yes	Yes	Yes	Yes	Yes	Yes
International Airline	Yes	Yes	Yes	Yes	Yes	N/A	Yes
Government Payments	5	10	5	5	17	2	7
Insurance	27	29	19	27	Yes	Yes	Yes
Bank Transfer	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cooperative Transfer	N/A	N/A	N/A	N/A	Yes	Yes	Yes
Fonepay	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NepalPay QR	Yes	Yes	Yes	Yes	N/A	Yes	Yes
Smart QR	Yes	Yes	N/A	N/A	N/A	Yes	Yes
Events	Yes	Yes	Yes	N/A	Yes	Yes	Yes
School	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cable car	Yes	Yes	Yes	2	Yes	Yes	Yes
SIP	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dmat Renewal	Yes	Yes	N/A	Yes	Yes	Yes	Yes
Capital	Yes	Yes	Yes	22	Yes	Yes	Yes
Broker Payment	N/A	Yes	Yes	N/A	Yes	Yes	Yes
Wallet load	6	3	Yes	Yes	N/A	N/A	N/A
Credit Card	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author

4.2 Adoption of Digital Wallet

4.2.1 Demographic Analysis of Respondent

The study's demographic profile of participants includes their gender, age group, employment nature, and educational qualification. As previously mentioned, descriptive statistics provide an overview of the data that has been gathered. In addition to data like medians and percentages, the descriptive analysis includes graphs and tables. The demographic details of the users of digital wallets are summarized in the table.

Table 4.6: Demographic Characteristic of Respondents

Variable	Classification	Frequency	Percentage
Gender	Male	245	64.50%
	Female	135	35.50%
	Total	380	100%
Age Group	18-25 years	146	38.40%
	26-40 years	188	49.50%
	Above 40 years	46	12.10%
	Total	380	100%
Education	SLC	33	8.70%
	Plus 2	14	3.70%
	Bachelor	253	66.60%
	Masters	80	21.00%
	Above	0	0%
	Total	380	100%
Occupation	Government Service	34	8.90%
	Private Employee	223	58.70%
	Self Employed	62	16.30%
	Student	61	16.10%
	Total	380	100%

(Source: Field Survey, 2023)

35.5 percent of respondents are female and 64.5 percent of respondents are male. Accordingly, 245 of the 380 responders were men and 135 were women. According to the age group breakdown, 234 digital wallet users (61.6%) and 58 respondents

over 40, or 15.3% of the sample of 380 digital wallet users for this study, were among the respondents between the ages of 26 and 40. The age group breakdown of respondents revealed that 88 respondents (23.2%) are in the 18–25 age group. The table also displays the employment and educational attainment of the respondents. A bachelor's degree is held by 40.8% of the population, while 38.2% of respondents work in the private sector.

4.2.2 Descriptive Analysis

This section covers the descriptive analysis of the information obtained from the questionnaire during the research phase. One kind of statistical summary that lists and measures the features of the data collected is called a descriptive analysis. It aims to summarise the sample rather than use the data to comprehend the population the sample data represents. Descriptive analysis includes the computation of statistical measures such as median, standard deviation, and maximum and minimum values. For every question, there were 380 responses. A five-point Likert scale, with 1 denoting Strongly Disagree and 5 denoting Strongly Agree, was used to measure the four independent variables—Perceived Usefulness, Perceived Ease of Use, Perceived Credibility, Convenience, and Adoption of Digital Wallets—that were used in this study. Values of the median that are less than three suggest a tendency towards disagreement, while values that are more than or equal to three suggest a tendency towards agreement with the claims.

4.2.2.1 Descriptive analysis of Survey

The next section displays the respondents' responses regarding perceived usefulness, perceived ease of use, credibility, convenience of using digital wallets, and adoption.

The variables' lowest, maximum, median, and standard deviation (S.D.) are shown in the table. According to the respondents' perceived usefulness for adopting digital wallets, the median score is 4.00 (0.47), indicating more usefulness. The respondents view the adoption of digital wallets to be positive, as shown by the median perceived ease of use score of 4.00 (0.52). The respondents' credibility to use digital wallets is positive, as indicated by the median score of 3.50 (0.61), indicating that respondents

have a positive view on the use of digital wallets. Convenience has a median of 4.00 (0.57). Similarly, the respondents are strongly persuaded to embrace digital wallets, as indicated by the adoption median of 4.00 (0.53).

Table 4.7: Descriptive Analysis of Survey

Variables	N	Minimum	Maximum	Median	Std. Deviation
PU	380	1.00	5.00	4.00	0.47
PEOU	380	1.00	5.00	4.00	0.52
PCRED	380	1.00	5.00	3.50	0.61
CONV	380	1.00	5.00	4.00	0.57
ADOP	380	1.00	5.00	4.00	0.53

Source: Field Survey 2023

Perceived Usefulness

The variables' lowest, maximum, median, and standard deviation (S.D.) are shown in the table. The PU1 median is 4.00 (0.56), indicating that using a digital wallet speeds up transactions significantly. The respondents' time is being saved by using digital wallets, as indicated by the median PU2 of 4.00 (0.58). Out of all the median values, it has the highest median. The adoption of digital wallets improves payment efficiency, as indicated by the PU3 median score of 4.00 (0.58). The median of PU4 is 4.00 (0.82), indicating that respondents have control over their transactions when they utilize digital wallets. According to the PU5 median of 4.00 (0.97), the responder digital wallet provides all of the services they might possibly need. Out of all the values, it has the lowest median. Similarly, respondents considered digital wallet services beneficial, as indicated by the median PU6 of 4.00 (0.62).

Table 4.8: Perceived Usefulness

Code	Variables	N	Min	Max	Median	S.D.
PU1	The use of digital wallets makes my transactions very fast.	380	1	5	4	0.6
PU2	The use of digital wallets is saving time	380	1	5	4	0.6
PU3	Using the digital wallet system improves my payment activities	380	1	5	4	0.6
PU4	The use of digital wallet gives me control over my transaction	380	1	5	4	0.8
PU5	My digital wallet offers all the services I expect	380	1	5	4	1
PU6	I find digital wallet services useful	380	1	5	4	0.6

Source: Field Survey, 2023

Perceived Ease of Use

Table 4.9: Perceived Ease of Use

Code	Variables	N	Min	Max	Median	S.D.
PEOU1	Learning to us the digital wallet would be easy for me.	380	1	5	4	0.6
PEOU2	I would find it easy to get the digital wallet to do my payments	380	1	5	4	0.9
PEOU3	My interaction with the digital wallet application would be clear and understandable	380	1	5	4	0.7
PEOU4	I find the digital wallet system flexible to interact with	380	1	5	4	0.6
PEOU5	It would be easy for me to become skillful at using the digital wallet.	380	1	5	4	0.9
PEOU6	I would find the digital wallet application easy to use	380	1	5	4	0.6

Source: Field Survey, 2023

The descriptive statistics of perceived ease of use are displayed in the table. On a five-point Likert scale, each of the 380 respondents provided their response. The elements' median value is displayed in the table as 4.00. In a similar vein, the standard deviation number is likewise explained by the statistics. The code PEOU2 and PEOU5 are represented by the greatest range of value, 0.85, and the code PEOU1 is represented by the lowest range of value, 0.57.

Perceived Credibility

Table 4.10: Perceived Credibility

Code	Variables	N	Min	Max	Median	S.D.
PCRED1	I don't notice any inconsistencies as I use digital wallet	380	1	5	4	0.8
PCRED2	Overall, I trust digital wallets	380	1	5	4	0.7
PCRED3	The digital wallet application is trustworthy	380	1	5	4	0.7
PCRED4	Whenever I make a mistake using the digital wallet, I recover easily and quickly	380	1	5	3	1.2
PCRED5	The digital wallet system gives error messages that clearly tell me how to fix problems	380	1	5	3	0.7
PCRED6	I am confident of using digital wallet even if there is no one around to show how to do it	380	1	5	4	0.8

Source: Field Survey, 2023

The descriptive statistics of perceived credibility are displayed in the table result. The Perceived Credibility is measured using six different factors. On a five-point Likert scale, each of the 380 respondents provided their response. The elements' median values, as displayed in the table, range from a minimum of 3.00 to a high of 4.00. According to the table, PCRED1, PCRED2, PCRED 3, and PCRED 6 have the greatest median values, at 4.00, while PCRED5, PCRED 4, and PCRED 5 have the lowest, at 3.00. The lowest agreed statement claims that whenever respondents encounter an issue when using the digital wallet system, it is simple to grasp, and the highest median shows the most agreed statement on the confidence of utilizing the digital wallet services when no one is there to assist.

Last but not least, the table also displays the standard deviation, which goes from highest to lowest. PCRED4 has the biggest standard deviation range, while PCRED2 has the lowest.

Convenience

The outcome in the table displays the convenient descriptive statistics. Six statements are used to gauge convenience. On a five-point Likert scale, each of the 380 respondents provided their response. According to the table, the items' median value is 4.00. Additionally, the standard deviation is displayed in the tables from highest to lowest degrees. On CONV6, the largest degree of standard deviation is 1.13, whereas on CONV5, the lowest degree is 0.49.

Table 4.11: Convenience

Code	Variables	N	Min	Max	Median	S.D.
CONV1	I do payments through digital wallet because it is convenient	380	1.0	5.0	4.00	0.50
CONV2	Digital wallet requires the fewest steps possible to accomplish what I want to do with it	380	1.0	5.0	4.00	0.69
CONV3	I can use digital wallet without written instructions	380	1.0	5.0	4.00	0.88
CONV4	Digital wallet does everything I would expect itto do	380	1.0	5.0	4.00	0.97
CONV5	Digital wallet makes payments easier to get done	380	1.0	5.0	4.00	0.49
CONV6	Digital wallet gives me more control over my payments	380	1.0	5.0	4.00	1.13

Source: Field Survey, 2023

Factors influencing the adoption

According to the table's result, the respondents agreed with the statement "Consider ease of use," with a median score of 4.00 (0.49). The respondents' relationship and level of trust with the adoption of digital wallets is shown by the statement's median value of 4.00 (0.67). The statement "Low service charge and rewards" has a median score of 4.00 (1.09), indicating that the respondents are in agreement with it. Convenience has a median rating of 4.00 (0.62), indicating that respondents generally agree with the statement. Statement: Security of transaction has a median rating of 4.00 (.84), indicating that respondents concur with the statement.

Table 4.12: Factors affecting Adoption

Code	Variables	N	Min	Max	Median	S.D.
ADOP1	Ease of use	380	1.0	5.0	4.00	0.49
ADOP2	Trust and relationship	380	1.0	5.0	4.00	0.67
ADOP3	Low service charge and Rewards	380	1.0	5.0	4.00	1.09
ADOP4	Accessibility	380	1.0	5.0	4.00	0.67
ADOP5	Convenience	380	1.0	5.0	4.00	0.62
ADOP6	Security of transaction	380	1.0	5.0	4.00	0.84

Source: Field Survey, 2023

4.2.3 Measurement of reliability

Cronbach's alpha was used in this study to evaluate the consistency of item scales for continuous dependent and independent variables. The information obtained from the questionnaire survey is shown in the table along with the reliability statistics. Cronbach's alpha values for perceived usefulness, perceived ease of use, perceived credibility, convenience, and adoption are 0.7561, 0.812, 0.8216, 0.7869, and 0.7932, in that order. The numbers demonstrate that the data from the questionnaire survey is trustworthy enough to continue with the analysis.

The following table displays the findings of the reliability test conducted on the alpha value of the Likert scale questions:

Table 4.13: Reliability Statistics

Variables	Cronbach's Alpha	No. of Items
Perceived Usefulness	0.7561	6
Perceived Ease of Use	0.8120	6
Perceived Credibility	0.8216	6
Convenience	0.7869	6
Adoption	0.7932	6

Source: Field Survey, 2023

4.2.4 Hypothesis Testing

In order to determine the effects of dependent and independent variables, we first analyse the variance between each variable in this section, discover the correlation coefficients, and then apply multiple regression to determine the correlations among usefulness, ease of use, credibility, convenience, and adoption variables.

Correlation Analysis

Correlation is a bivariate analysis that assesses the strength and direction of a link between two variables. A greater correlation value denotes a stronger relationship between the two sets of data. When the correlation is 1 or -1, a perfectly linear positive or negative relationship exists; when the correlation is 0, there is no relationship at all; when the correlation is greater than 0, a positive relationship exists; and when the correlation is less than 0, a negative relationship exists.

Correlation Matrix

The Pearson Correlation coefficient was used to examine the direction and magnitude of the association between the independent variables (PU, PEOU, PCRED, and CONV) and the dependent variable (ADOP).

Table 4.14: Correlation Matrix

	ADOP	PU	PEOU	PCRED	CONV
ADOP	1				
PU	0.7387	1			
PEOU	0.4883	0.4339	1		
PCRED	0.7864	0.5717	0.3061	1	
CONV	0.5402	0.598	0.4606	0.5906	1

Source: Field Survey, 2023

The results demonstrated a substantial correlation between all independent factors and the use of digital wallets at the 0.01% level. The Pearson correlation (r) value for the uptake and perceived utility of digital wallets was 0.7387 at a significance level of 0.01. This shows that there is a significant positive correlation between these two variables, suggesting that as digital wallets become more widely accepted, their perceived utility will grow.

The digital wallet's perceived ease of use and acceptance has a Pearson coefficient (r) value of 0.4883, with a significant r (2-tailed) value of p =.000. It suggests that these two variables have a less linear positive association.

For digital wallet usage and perceived trustworthiness, the Pearson correlation (r) value was 0.7864, with a significant r (2-tailed) value of p = 0.000. This is a substantial positive correlation between the usage of digital wallets and perceived

credibility. Convenience and acceptance of digital wallets have a substantial positive connection (r = 0.5402) at the 0.01 level, as expected. It implies that the usage of digital wallets will increase along with convenience.

Regression Analysis

Regression analysis can only ascertain whether two variables have a significant relationship. Regression analysis is a statistical method for determining the relationships between variables in statistical modelling. It includes a variety of methods for modelling and assessing multiple variables and focuses on the relationship between a dependent variable and one or more independent variables.

A correlation study can only reveal whether two variables have a meaningful relationship. It is hard to determine the precise nature of the link between two variables, even when a correlation coefficient indicates a significant one. In this case, regression analysis provides additional information on the slope of the relationship. It is employed to predict results and describe the characteristics of a partnership. The degree of dependent variable variability that is important (above other factors) in explaining dependent variable variability is determined in this section, along with the independent variable that best explains result variability.

The dependent variable (adoption of digital wallets) and independent variables (perceived usefulness, perceived ease of use, perceived credibility, and convenience) were compared using linear regression analysis. One benefit of using linear regression analysis was being able to assess several independent factors that influence the dependent variables at the same time. It gives us further insight about the relationship's incline. Multiple Regression Model

$$Y= \alpha + \beta 1PU + \beta 2PEOU + \beta 3PCRED + \beta 4CONV + ei \text{.....(i)-Model}$$

Where Dependent Variable: Y = ADOP (Adoption of digital wallet)

Independent Variables: X_1 = PU=Perceived Usefulness

X_2 = PEOU=Perceived Ease of Use

X_3 = PCRED=Perceived Credibility

X_4 = CONV=Convenience

a = Constant Ei= Error term

Multiple regression analysis was used to identify the key variables influencing respondents' adoption of digital wallets. The independent variables are perceived utility (PU), perceived ease of use (PEOU), perceived credibility (PCRED), and convenience (CONV); the dependent variable is the adoption of digital wallets (ADOP). The results of the multiple regressions used in this investigation are shown in the table below.

Adoption of Digital wallets (ADOP) = 0.215 + 0.4PU + 0.211PEOU + 0.504PCRED – 0.132CONV…. (ii)- Model 2

The equation in Model 2 illustrates the positive correlation between independent factors and dependent variables. The table provides sufficient evidence of the effectiveness of these models by showing that each model's p-value is less than 0.05 at the 1% level of significance. The fitted all- regression model helps to predict the value of the dependent variable within the range of potential values for the independent variables in the sample data. The data indicates that for every unit change in perceived usefulness for the adoption of digital wallets, there is a 0.4 unit change in other independent variables. Similar to this, when perceived ease of use increases by one unit, adoption of digital wallets varies by 0.211 units, while the other independent variables stay the same. Additionally, for every unit change in perceived trustworthiness, there is a 0.504unit variation in digital wallet usage, provided all other independent factors remain constant. Additionally, for every unit change in ease, the adoption of digital wallets varies by 0.132 units, while the other independent factors stay same.

Table 4.15: Regression Analysis

Coefficients Summary								**ANOVA**
Model	B	Std. Error	T	p-value	R Square	Adj. R Square	F	Sig. F
(Constant)	0.215	0.131	1.64	0.102	0.774	0.772	321.50	0.000
PU	0.400	0.033	12.11	0				
PEOU	0.211	0.030	6.98	0				
PCRED	0.504	0.028	17.7	0				
CONV	-0.132	0.035	-3.79	0				

(Source: Field Survey, 2023)

Perceived credibility (PCRED), with a value of 0.504, is shown in the table to have the biggest impact on digital wallet adoption. Then there are the coefficients for perceived utility (PU), perceived ease of use (PEOU), and convenience (CONV), which are 0.4, 0.211, and -0.132 respectively. Perceived usefulness, perceived ease of use, perceived credibility, and convenience all had p-values less than 0.05. Thus, the following factors affect the uptake of digital wallets: perceived utility, perceived simplicity of use, perceived legitimacy, and convenience. Adoption of digital wallets is positively correlated with having high perceived credibility. Likewise, the perceived simplicity of usage suggests a favourable correlation with the adoption of digital wallets.

Additionally, the model with no moderating variables has an adjusted R square (Adj. R2) of 0. 772 and a R square (R2) of 0.774, indicating that those independent factors can account for 77.4% of the dependent variable. The percentage of variance explained will increase with a greater correlation coefficient value. The ANOVA summary between the independent and dependent variables is also shown in the table. The ability to determine whether a link is statistically significant or not is provided

by the F value. Here, the significance value is 0.000 with a 0.01 threshold of significance, and the p-value for F in each model is 321.5. The study comes to the conclusion that each independent variable influences the adoption of digital wallets and that regression has explanatory power.

Summary of the hypotheses

The summary of each hypothesis tests has been presented:

Table 4.16: Hypothesis testing

Hypothesis	**p-value**	**Results**
H1: Perceived Usefulness has positive impact on the adoption of Digital wallets	0.000 (p<=0.05)	Accepted
H2: Perceived Ease of Use has positive impact on the adoption of Digital Wallets	0.000 (p<=0.05)	Accepted
H1: Perceived Credibility has positive impact on the adoption of Digital Wallets	0.000 (p<=0.05)	Accepted
H1: Convenience has positive impact on the adoption of Digital Wallets	0.000 (p<=0.05)	Accepted

Source: Field Survey, 2023

4.2.5 Discussion on Adoption of Digital Wallets

Major findings of the research show us that:

i. Of 380 respondents, 64.5% were men and 35.5% were women.
ii. The adoption of digital wallets is positively connected with perceived convenience, perceived utility, perceived ease of use, and perceived credibility.
iii. Because these factors suggest a propensity for adoption, respondents think that the features of perceived utility, perceived simplicity of use, perceived legitimacy, and convenience are valuable. Every variable has a median between 3 and 4.

iv. The median value of the respondents' perceptions of the usefulness, ease of use, and credibility to adopt digital wallets is 4, while the median value of their convenience towards adopting digital wallets is 3.5. These values indicate that most respondents agree that convenience is an effective variable for the study.
v. The findings of the correlation study indicate that the respondents' adoption of digital wallets is positively correlated with perceived utility (r=0.74), perceived ease of use (r=0.488), perceived credibility (r=0.7864), and convenience (r=0.54).
vi. The regression model's R-square is 0.774, indicating that it accounts for 77.4% of the variation in the dependent variable—the use of digital wallets.
vii. Regression analysis results indicate that the adoption of digital wallets is influenced more by perceived usefulness (p=0.000), perceived ease of use (p=0.000), perceived credibility (p=0.000), and convenience (p=0.000). Regression analysis results further show that all independent factors have an influence on consumers' adoption of digital wallets (p=0.000).
viii. The ANOVA result shows a probability of 0.000 for the F-statistic, indicating an excellent model fit in this instance, where the four independent variables are the most descriptive.

The findings show that an individual's propensity to use digital wallets may be predicted by a variety of attitude traits as well as other qualities like usefulness. Additionally, various methods such as perceived usefulness, perceived ease of use, perceived legitimacy, and convenience are used to forecast the attitudinal variables of consumers. The results demonstrate that customer intention is mostly predicted by the system's perceived ease of use and trustworthiness. One possible explanation is that when a customer perceives a system as being incredibly user-friendly for their daily needs or as making their lives simpler, their perspective on it improves and they are more likely to accept it readily (Kirsty, 2006). It's critical that every customer feels confident in the system and finds it easy to use in the case of the digital wallet.

CHAPTER: V

SUMMARY AND CONCLUSIONS

This chapter serves as an overview of the research, its conclusion, and its consequences. The presentation, data analysis, and literature research all lead to the conclusions.

5.1 Summary

The objective of the research was to take into account the legal and regulatory frameworks that are behind Digital Payment Systems, understand the various trends associated with different digital payment instruments, and finally, discuss the factors responsible for digital wallet adoption in Nepal.

The literature review was comprehensively done to understand the various legal and regulatory frameworks prevalent in the case of the Nepalese Payment System. Here the role of Nepal Rastra Bank's Payment System Development Strategy (PSDS) and the Payment System Department (PSD) is emphasized, which is responsible for the regulation of the Payment systems through two types of institutions, namely the Payment System Operator and Payment Service Provider. Various laws and regulations that were relevant were also discussed in brief in this literature review segment of this study.

Analysis of the secondary data regarding the monthly number of transactions of various digital payment instruments from Nepal Rastra Bank's Database on the Nepalese Economy was done. The discussion on the trend, observed various cross-cutting issues, like userbase, average transaction size, number, and volume of transactions across the years. The services available and the change in the monthly transactions of Mobile Banking and Digital Wallets were also discussed. Where it was found that though there is not much difference between the services available, Mobile Banking numbers have started to surpass the Digital Wallet numbers since the beginning of 2022. The user base of Mobile Banking is bigger, followed by Digital Wallets then by Cards. The average transaction size of Digital Wallets is almost 8 times smaller than that of Mobile Banking and that of Cards. Almost equal is the use of cards, as compared with the use of cards to withdraw cash.

Finally, primary research was done for the fulfillment of the third objective regarding the adoption of digital wallets, involving 380 respondents, via a self-administered questionnaire. As per the conceptual model of the study, the Adoption of e-wallet was explained by the medians of Perceived Usefulness, Perceived Ease of Use, Perceived Credibility, and Convenience. Descriptive and analytical studies were both employed in the research. Correlation matrix and regression analysis both suggested the interplay of the identified factors on the Adoption of Digital Wallets. The Ordinary Least Square Multiple Regression model used had a fit of 77.4 % of the data.

5.2 Conclusions

Perceived usefulness, perceived credibility, and ease of use are all strongly correlated, according to the research (Weaven, 2007). The most plausible explanation is that when users believe a service is helpful, safe, efficient, easy to use, and keeps its promises and commitments, they are more likely to have trust in it. Therefore, in a nation like Nepal, the payment system needs to provide the customer reason to trust it, which increases the consumer's attraction to digital payments. The majority of consumers are solely from urban regions, and most individuals in rural areas are still unaware of the existence of digital wallets or their purposes. Therefore, it can be concluded from this study as well that the most important factor influencing the adoption of a digital wallet is the consumer's attitude, which is shaped by the system's usefulness, ease of use, and trustworthiness. From a Nepalese perspective, this could mean that people are not aware of digital wallets, or they are not persuaded by the services they offer, their usefulness, or how to use the system. To illustrate, consider the numerous digital wallets that offer digital payment services and the ability to pay utility bills to the appropriate authorities (e.g., electricity, phone, and water bills). Even so, some tech-savvy individuals still choose to pay their utility bills in person rather than using digital wallets, demonstrating the lack of public awareness of these wallets and the reality that not everyone has a genuine trust in them (Rakesh, 2014).

We may draw the conclusion that many attitudinal characteristics, such as perceived convenience, perceived utility, perceived ease of use, and perceived legitimacy, are the primary predictors of digital wallet acceptance.

5.3 Recommendations

Adoption of digital wallets is influenced by Perceived Ease of Use, Perceived Credibility, Perceived Usefulness, , and Convenience, this has been explained well in the study. Thus, a simple recommendation to digital wallet practitioners can be made to create awareness about the ease of use, and usefulness of digital wallets. Further, focusing on making the system secure and robust would also increase the credibility of digital payments and in turn, would increase the adoption. TAM is also a recommendable model that could be applied in similar studies to understand the factors behind the acceptance of any new technology. A study like this could be a good source of knowledge for understanding how technology could be made more adaptive and thus put to the advantage of a lot of people. The author would like to recommend increasing awareness, which would improve the perception of technology in terms of usefulness, credibility and ease of use, and. However, systems need also be as convenient as possible for greater adoption.

5.4 Implications

This model makes use of every TAM factor. It is critical to ascertain the precise needs of customers as well as the variables that contribute to their skepticism of new services and technology. The majority of individuals in a country like Nepal believe that digital payments are novel and that digital wallets are unfamiliar to them. The investigation confirms that the attitude generated by usefulness, ease of use, credibility, and convenience are significant factors when it comes to adopting of new technologies and/or services.

In addition to adding to the theory, this research also has some applications in real life. This paper offers valuable insights for operators of digital wallets. Understanding customers is crucial before offering any services. It is quite simple to apply and receive the return from there if they comprehend the customer's objective. The following recommendations for digital wallet firms may be drawn from the aforementioned analysis:

According to the survey, the basic variables influencing the acceptance of digital wallets are usefulness, convenience, ease of use, and credibility. Therefore, digital wallets must offer services that are not only easy to use but also highly beneficial to users. When

creating applications, businesses should prioritize security and make the website and apps user-friendly by including interactive pages and a variety of supporting instructions. Offering a website that is both aesthetically pleasing and easy to use might draw in customers. For people, awareness is the most important thing. Therefore, designing is not enough; they should also include a few brief instructions explaining how to do other services and transactions correctly, as well as a variety of informational campaigns to persuade people to use the security system. By making the payment services easily accessible, an alternative promotional mechanism can educate individuals about digital wallets and support their efforts in the digital economy.

REFERENCES

Alaeddin, O., Altounjy, R., Zainudin, Z., & Kamarudin, F. (2018). From physical to digital: Investigating consumer behaviour of switching to mobile wallet. *Polish Journal of Management Studies*, 17(2), 18-30.

Alswaigh, N. Y., & Aloud, M. E. (2021). Factors affecting user adoption of e-payment services available in mobile wallets in Saudi Arabia. *International Journal of Computer Science & Network Security*, 21(6), 222-230.

Aryal, R. (2021). FACTORS INFLUENCING THE USAGE OF DIGITAL MOBILE WALLET IN NEPAL (Doctoral dissertation, Open University).

Chandio, S.A. (2011). Studying acceptance of online banking information system. *Writing Center Journal* , 78 (9), 56-70.

Chawla, D., & Joshi, H. (2019). Consumer attitude and intention to adopt mobile wallet in India–An empirical study. *International Journal of Bank Marketing*, 37(7), 1590-1618.

Davis F.D. (1993). Acceptence of TPC Scale -Validity and Reliability Study. Journal Article.

Davis, A. (1989). ”Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology”. *MIS Quarterly* , 13 (12), 66-70.

Davis, S. (1985). A Technology Acceptance Model for Empirically Testing New End-User Information Systems. 55 (7), 67-81.

Davis,F.D. (1993). Technology-Acceptance-Model-Davis-1993_fig3_269687959.

Falahat, M. (2019). Factors Influencing Consumers’ Purchase Intention Towards Online Group Buying in Malaysia. *International Journal of Electronic Marketing and Retailing* , 10 (4), 40-50.

Fred, D. (1989). Management Information Systems Research Center, University of Minnesota. Journal Article.

Gautam, S., Kumar, U., & Agarwal, S. (2020, June). Study of Consumer Intentions on Using Mobile Wallets Using TAM Model. In 2020 8th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions)(ICRITO) (pp. 203-207). IEEE.

Hasan, S. A. (2005). Toward a model for the acceptance of Internet banking in developing countries. 77 (4), 55-74.

Kamutuezu, E. U. (2016). The Adoption of Digital Banking in Namibia. Namibia.

Katsikas,N.S. (2005). The Challenge of Implementing InformArsiwala, P. N. (2020). Consumer Buying Behavior Towards Online Food Delivery Apps in North Maharashtra Region. *Journal of Business Management* , 22 (3), 8-11.

Kazi, A. K. (2013). Review of The Technology Acceptance Model (TAM) in Internet banking and Mobile banking. *Journal of Information Technology* , 21, 1-23.

Lichenstein, V. N. (2006). Understanding consumer adoption of internet banking. *Writing Center Journal* , 50 (33), 220-333.

Maharjan, P., Devkota, N., Mahapatra, S. K., Padda, I. U. H., Dhakal, K., Mahato, S., ... & Bhattarai, U. (2022). FinTech Adoption among Online Grocery Buyers during COVID-19 Lockdowns in Nepal. *Journal of Private Enterprise*, 37(2), 57-89.

McLeod, S. (2021). What is a hypothesis? Retrieved from SimplyPsychology:. https://www.simplypsychology.org/what-is-a-hypotheses.html , 65, 66-76.

Ming, K. L. Y., Jais, M., Wen, C. C., & Zaidi, N. S. (2020). Factor affecting adoption of E-wallet in Sarawak. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 10(2), 244-256.

Prasad, F. (1999). Examining the technology acceptance model in the adoption of social networks. *Journal of Research in Interactive Marketing* , 51 (22), 32-43.

Singh, C. (2012). A Study of Adoption Behavior for Online Shopping: An Extension of Tam Model. *Writing Center Journal* , 74 (43), 50-52.

Teo, S. C., Law, P. L., & Koo, A. C. (2020). Factors affecting adoption of e-wallets among youths in Malaysia. *Journal of Information System and Technology Management*, 5(19), 39-50.

Teoh Teng Tenk, M., Yew, H. C., & Heang, L. T. (2020). E-wallet Adoption: A case in Malaysia. *International Journal of Research In Commerce and Management Studies* (ISSN: 2582-2292), 2(2), 216-233.

To, A. T., & Trinh, T. H. M. (2021). Understanding behavioral intention to use mobile wallets in vietnam: Extending the tam model with trust and enjoyment. *Cogent Business & Managemen*t, 8(1), 1891661.

Wetherbe, S. (2012). The Adoption of SPSS: Testing Innovation Diffusion Theory in the Context of End-User Computing. *Information Systems Research* , 1 (2), 115- 143.

Williamson, L. A. (2006). Understanding consumer adoption of Internet banking: an interpretive study in the Australian banking context. 38 (5), 68-78.