ROLE OF DIGITAL BANKING ON FINANCIAL INCLUSION IN NEPAL

A Dissertation submitted to the Office of Dean, Faculty of Management in partial fulfillment of the requirements for the Master's Degree

by

Sarita Simkhada

Exam Roll No.: 24050/20

Campus Roll No.:439/076

T.U Regd. No.: 7-2-500-51-2014

Shanker Dev Campus

Specialization: Finance

Kathmandu, Nepal

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CERTIFICATE OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **"Role of Digital Banking on Financial Inclusion in Nepal**". The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees, or it has been proposed and presented as part of requirement for any other academic purpose.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information source and literature used are cited in the reference section of the dissertation.

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Sarita Simkhada:
August, 2024

REPORT OF RESEARCH COMMITTEE

Ms. Sarita Simkhada has defended research proposal entitled **"Role of Digital Banking on Financial Inclusion in Nepal"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestion and guidelines of Supervisors Asst. Prof. Keshar Singh Khati and Dr. Dipak Mahat and submit the thesis for evaluation and viva voce examination.

……	**Dissertation Proposal Defended Date:**
Asst. Prof. Keshar Singh Khati	……
Dissertation Supervisor	
……	**Dissertation Submitted Date:**
Dr. Dipak Mahat	……
Dissertation Supervisor	
……	**Dissertation Viva Voce Date:**
Asso. Prof. Dr. Sajeeb Kumar Shrestha	……
Head of Research Department	

APPROVAL SHEET

We have the dissertation entitled **"Role of Digital Banking on financial Inclusion in Nepal"** presented by Sarita Simkhada a candidate for the degree of Master of Business Study (MBS Semester) and concluded the Viva voce examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

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Asst. prof. Keshar Singh Khati
Dissertation Supervisor

……

Dr. Dipak Mahat

Dissertation Supervisor

……

Internal Experts

……

External Expert

……

Asso. Prof. Dr. Sajeeb Kumar Shrestha
Chairperson, Research Committee

……

Asso. Prof. Dr. Kapil Khanal
Campus Chief

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The research paper titled **"Role of Digital Banking on Financial Inclusion in Nepal"** has been developed as partial fulfillment of the Degree of the Master of Business Studies (MBS) of the Faculty of Management at the Tribhuvan University. It is based on research models, which use quantitative methods to examine the contribution that the different types of digital banking have towards the achievement of financial inclusion in the context of Nepal.

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Sarita Simkhada

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ABBREVIATION

PSPs	:	Payment Service Providers
POS	:	Point of Sale
JASP	:	Jefferey's Amazing Statistics Program
MB	:	Mobile Banking
IB	:	Internet Banking
EW	:	E-Wallets
E-Wallets	:	Electronic Wallet
AG	:	Agent Banking
FI	:	Financial Inclusion
NRB	:	Nepal Rastra Bank
BFI's	:	Automated Teller Machine
%	:	Percentage
IFC	:	International Finance Corporation
nBank	:	Nabil Bank
TU	:	Tribhuvan University
USSD	:	Unstructured Supplementary Service Data
QR Code	:	Quick Response Code
PU	:	Perceived Usefulness
PEOU	:	Perceived Ease of Use
VIF	:	Variance Inflation Factor

ABSTRACT

The paper evaluates the role of digital banking in supporting financial inclusion in Nepal with the following five services purposed, such as mobile banking, internet banking, automated teller machines (ATMs), e-wallets, and agent banking. The study will employ a quantitative method in this context with a descriptive and inferential statistical instrument such as correlation or regression analysis to assess the association between these services and financial inclusion. Employees across different parts of Nepal were sampled to acquire a variety of user experiences.

The findings indicate that all five variables of digital banking have a statistically significant positive relationship with financial inclusion. Most of the respondents responded positively indicating that mobile banking, internet banking, and e-wallet services were very effective and useful, especially in some provinces where the services were most appreciated. It shows that they are being widely used and do play a major role in promoting the accessibility of financial services. ATM services had a moderate and significant association with financial inclusion and agent banking had the lowest association, indicating that there might be low coverage or usage within rural under-served places. The study concludes, digital banking services significantly contributes in enhancing financial inclusion in Nepal, particularly through mobile and internet-based platforms. It recommends additional investment on digital infrastructure, user education, and specific policies to boost the underperformance areas in financial inclusion like the agent banking system, hence creating equitable access to financial services to every part of the country.

Keywords: *Financial Inclusion, Mobile Banking, Internet Banking, ATMs and Agent Banking service, Digital Banking*

CHAPTER I
INTRODUCTION

1.1 Background of the Study

Ensuring access to financial services is fundamental in the reduction of poverty and in growing the economy in general. Financial inclusion is a process of providing affordable, timely and adequate financial services without any discrimination against all individuals and businesses, especially the underserved and disadvantaged. Financial inclusion involves making certain that low-income populations with marginalized backgrounds can obtain economic services at reasonable prices promptly through secure facilities. In Nepal, financial exclusion has remained a persistent issue, particularly in rural areas where geographical challenges, lack of awareness and limited infrastructure have traditionally hindered access to formal banking services (International Finance Corporation, 2023). Over the last few years, however, the digital banking has been seen as a far more significant contributor to financial inclusion through leveraging of mobile platforms, fintech solutions and digital payments, and thus reaching underserved and remote communities who typically are unable to access mainstream banking services (Mohammed and Japee, 2025).

Kunwar and Chhetri (2025) noted that financial technology and the financial infrastructure are important to increase financial inclusion considering Nepal as a whole-including underserved regions such as the Madhesh Province whose traditional access to branches is not satisfactory. Physical branch-based banking in Nepal had been a serious issue as it had taken many years to have most physical bank branches set up in the urban areas and the overall situation in the rural areas and those which were remote has been a poor one in terms of coverage by the banking services.

People who did not live close to these branches had significant difficulties in accessing financial services as they had to travel extensively and fill in bulky documents-which was a big burden to individuals who did not have a high level of education. This has been the reason why many citizens in Nepal were, and still are, unbanked or underbanked over the years (Chaulagain, 2015). In response to this gap, Nepal has been showing significant proliferation of digital banking which can be defined as a use of digital platforms and technologies, including mobile banking, internet banking, digital

wallets, ATMs, and QR payments in providing banking services without the need of physically visiting the concerned branches (Nepal Rastra Bank, 2025b). These services allow the users to make financial transactions without travelling long distances, specially making payments or getting payments conveniently and safely with the use of electronic devices. Recent years have seen significant Nepalese investments in IT infrastructure in the endeavor to advance digital banking and enhance the quality delivery of services to various parts of the nation and to increase financial inclusion of the general population, especially in remote and underprivileged areas (Pradhan et al., 2021). Modern times have initiated transformations in this area. During the past decade Nepal experienced a substantive growth of mobile phone usage and internet accessibility together with digital literacy that has mostly affected younger Nepalis. Digital banking through mobile phones and internet platforms and electronic means has become practical against conventional banking because of these modern developments. Mobile banking applications together with SMS banking features and eSewa and Khalti digital wallets coupled with branchless banking agents make it possible for individuals to obtain banking services without leaving their homes or nearby local retailer locations (Adhikari and Shrestha, 2022). Further, recent reports by the central bank of Nepal confirm that the use of mobile banking and e-wallets has exploded in 2024, with 23.5 million mobile banking customers and more than 21.1 million e-wallet users, a sure sign of increasing adoption of digital financial services nationally (Poudyal, 2025).

Digital banking has been an asset to eradicate most of the historical financial inclusion hindrances in Nepal. It enables users to conduct bank transactions without any physical presence of the bank branches, complete minimal paperwork, save on the transaction costs and have immediate access to the payment and transfer facilities. All these are advantages that make banking easier and friendly particularly to individuals in rural or underserved communities. Digital banking is an emerging phenomenon in Nepal with a very steep upsurge during the past couple of years. Nepal Rastra Bank (2025a) has stated that users of mobile banking score higher than 19 million and presently the numbers of digital wallets customers have surpassed 8 million. The COVID-19 pandemic was one of the drivers behind the changes in the shift toward digital finance that started to scale immensely, making contactless payments the baseline of daily life, allowing one to buy groceries, pay utility bills, or transfer money to relatives. This

digital revolution has been the much-needed move towards ensuring more people and within a shorter time are benefiting the move towards inclusive banking.

The government and regulatory institutions in Nepal acknowledge the use of digital finance is undergoing changes and are making several decisions to promote the scenario of digital banking services in the country. A shift toward the use of digital payments has resulted in a slow but steady decline in using cash and physical infrastructure with opportunities to offer more targeted, inclusive and timely access to financial services to more people (Alliance for Financial Inclusion, 2025). Additionally, the country has experienced the explosive emergence of infrastructural technology startups and online payment services such as eSewa, IME Pay and Khalti that are creating financial densities and increasing penetration to contemporary banking facilities. This is facilitated through progressive attitude toward regulation by NRB, which promotes stable innovation and protecting consumers of this system (Bhusal, 2025). These developments are indications of a strong institutional level involvement of making sure that digital banking is one of the major forces that is required for enhancing financial inclusion as well as economic growth in Nepal.

Despite the progress that digital banking has achieved in Nepal, there are significant problems to ensure universal financial inclusion. A significant part of the rural communities is left out because they do not have enough smartphones in use because of poor internet connection levels and poor digital literacy levels. Ethnic minorities, women, and older adults are among the most vulnerable groups, as they are underrepresented in digital means of money transfer even when they lack accessibility, trust, or even confidence regarding the application of digital financial tools. Besides, the issue of cybersecurity, fraud and user-friendliness also acts as a deterrent in the adoption, mostly in new or low-income users. In the same way, an International Financial Corporation (2023) indicates that although 90 percent of adults can access financial services in Nepal, there is a small proportion that applies digitally on a regular basis, indicating great disparities regarding consequential use and confidence. Such concerns highlight the necessity of special policies and digital literacy initiatives to make sure that the advantages of digital banking can be broad, democratic, and accessible to everyone.

The accelerated digitalization of Nepal requires a reconsideration of the alleged financial inclusion role of the digital banking system in rural and marginalized groups or whether they are merely improving convenience levels to its tech-savvy inhabitants of the urban centers. Despite the increase in registration as well as the use of the wallets, the important question which needs to be addressed is that are those male and female in the remote areas, the elderly and the minority people fully utilizing these services or is the increase just at the surface level? Pradhan et al. (2021) evaluated mobile banking, the Automated Teller Machine (ATM), internet banking, agency banking, and the point of service (POS) terminal as statistically significant in contributing to the positive effect of greater financial inclusion in Nepal. As an example, Mookerjee et al. (2025) outlined the lack of access to internet, poor digitization levels, and digital literacy, as well as risks to online security and unreliability of digital systems as one of the key barriers to the use of digital financial services by stages residing in the countryside and exposure to various risks.

Although digital banking is becoming more and more popular in Nepal, there is variation in its usage and effects based on the communities, in the rural and underserved areas. A recent survey focusing on the usage experience and perceptions of the digital banking users in Nepal found out that the former refers to people in their middle age, have bigger education, and are connected to their profession as their main characteristics, whereas people living in rural areas and not very literate are underrepresented (Kandel et al., 2024). According to the study by Khera et al. (2021) conducted worldwide, the evidence is normal on the power of digital banking in enhancing economic growth and seeing that the many developing countries are financially included through sheer support, but the support would not be achieved without a solid infrastructural background, educative programs, and policies that are encompassing to the needs of the marginalized groups of people. In their absence, digital finance may increase already existing disparities instead of redressing them.

This research seeks to enhance knowledge about digital technology's ability to serve beyond convenience for improving both financial empowerment and equity and inclusive development in Nepal. In this respect, the contributions of digital banking services towards the financial inclusion in Nepal should be evaluated critically. Since digital financial services have the power to create big changes, it's important to check whether they are helping the most vulnerable and marginalized people. This paper, thus,

attempts to examine the effect, scope, and constraints of digital banking to enhancing financial inclusion in Nepal, and helps to highlights some of the main obstacles and the adoption trends along with relevant policy concerns in establishing a more inclusive online financial system.

1.2 Problem Statement

The development of financial sector in Nepal has failed to break the ceiling of providing organized banking to a significant proportion of the population. There are also several structural challenges that hinder healthy financial inclusion despite expansion of the digital banking in Nepal, Geographical issues are persistent because the country has mountainous terrains and isolated rural settlements, causing providing both physical and digital financial infrastructure in outlying locations in the country to be expensive and logistically challenging. Gender gaps also feature prominently, in that most women, especially in rural areas, where many do not have access to personal mobile phones, digital illiteracy, and financial independence, which restriction them in formal banking (Nepal Rastra Bank, 2021). Adoption is also influenced by age aspects; youths and urban populations which are tech-savvy are more inclined in using mobile banks and e-wallets whereas the older adults are reluctant because digital tools are new to them and they fear getting defrauded (Kandel et al., 2024). Traditional banking organizations encounter limitations when expanding into remote areas because their operations face high expense and transportation barriers. In this regard, digital banking has been considered as one of the possible ways to minimize the financial divide by the provision of convenient, low-cost, reachable financial services with the help of mobile phones, internet banking and digital wallets. Customers receive multiple benefits through digital banking services although this system encounters several obstacles which include persistent traditional banking behaviors and security problems as well as technical glitches and payment problems together with restricted promotional funding (Mastran, 2021).

Financial inclusion represents a necessary requirement to create economic development that includes all social groups and to fight poverty. Nepal has significant portions of population who do not receive access to formal financial services though the government and financial providers focused their combined forces in it. Rural areas together with remote locations and economic-social inequality along with financial illiteracy have traditionally created obstacles that prevent people from using banking

services across Nepal and other underserved regions. The latest studies have established that the digital banking mechanisms, which includes mobile banking and online banking, which indicate statistically significant implications towards financial inclusions, are not in use among the underbanked group. This is mostly because there is a set of behavioral, technical, and institutional barriers that deprive underserved populations of accessing and using these digital banking services (Pradhan et al., 2021).

Digital banking technology creates a powerful avenue to unite underbanked and banking institutions. Through mobile banking along with internet banking and digital wallets, banks can extend their financial services outside their physical location using affordable and accessible tools. The International Financial Corporation (2023) shows that formal financial service utilization rose from 61% in 2014 to reach 90% in 2022 and digital channels took a major part in this expansion, a huge jump that can mostly be attributed to the diffusion of digital financial platforms like Khalti, eSewa, IME Pay, digital payment platforms provided by commercial and development banks through phone banking.

The fast growth of digital banking produces a need for attention to equal access for all people. The populations of busy urban areas and those with technological proficiency quickly accept digital financial platforms but rural areas together with disadvantaged populations face obstacles that include poor digital skills and minimal internet access and low confidence in digital systems. The financial accessibility research from Nepal Rastra Bank showed throughout June 2020 that 67.3% of Nepalese population maintained one deposit-based banking account yet approximately 32.7% was not connected to any bank (Prasain, 2021). In addition, the statistics also show that urban territories and the male gender profile own huge preponderance of accounts-urban municipalities show approximately 953 accounts to 1000 people, in opposition to only roughly 251 accounts to 1000 in the country regions, stating an immense urban-rural dichotomy in financial accessibility and outreach. Access to a bank account does not mean that the country has engaged in the meaningful financial inclusion of its individuals, and indeed when substantial proportions of the population still use cash, informal lending, and non-digital money, it becomes a significant issue.

The research paper studies the inequity between the accessibility and equitable use of digital banking services to various groups in the Nepalese population. It attempts to

assess the degree of importance of digital banking in respect to financial inclusion and whether there is a risk to prolonging the current existing disparities into a digital context. This gap will prove instrumental in decision-relating to policies, product design, and implementation strategy that will facilitate the harnessing the potential of digital finance as an inclusive development tool.

In this case, the study would explore the role that digital banking services play in enhancing to financial inclusion in Nepal especially to the underserved population and challenges that still hinder full integration in the official financial system, focusing on the following key issues:

- In what extent has the digital banking improved access of financial services?
- What are the key obstacles to the digital banking adaptation in Nepal?
- How can digital banking be leveraged to further promote financial inclusion?

1.3 Objectives of the Study

In recent years, digital banking has presented itself as a powerful tool for promoting financial inclusion, especially in developing countries like Nepal. By offering banking services through mobile apps, digital wallets and various online platforms, it is helping people in remote or underserved areas, get easier access to essential financial services. This shift has the potential to support economic growth and make financial systems more inclusive. However, it is important to understand how effective digital banking has truly been in reaching people who were previously left out of the formal financial system.

The Primary goal of this study is to examine how digital banking helps to improve financial inclusion in Nepal. It also tries to understand the challenges faced by users, banks and financial institutions, understand the effect of digital literacy in usage of digital banking and provide relevant suggestions to make digital banking even more user-friendly and accessible for general people. The objectives of study are

- To assess financial inclusion and digital banking.
- To analyze the relationship between financial inclusion and digital banking.
- To examine the impact of digital banking on financial inclusion.

1.4 Hypothesis of the Study

H1: There is significant relationship between Mobile Banking and financial inclusion in Nepal.

H2: There is a significant relationship between Internet Banking and financial inclusion in Nepal

H3: There is a significant relationship between ATM's and financial inclusion in Nepal

H4: There is a significant relationship between E-Wallet's and financial inclusion in Nepal.

H5: There is a significant relationship between Agent banking and financial inclusion in Nepal.

1.5 Rational of the Study

As digital banking continue to show itself as a powerful tool for expanding financial services to people who have been excluded from the formal system. This is especially relevant for Nepal, majority of its citizen still lacks access to basic banking facilities due to geographical, economic and infrastructure challenges. With the increasing availability and use of smartphones, internet access, and mobile financial services, digital banking plays a vital role in solving problems and helps to enhance financial inclusion.

The motivation behind the study is to study the extent to which digital banking services are penetrating the underserved and underbanked communities in the country of Nepal, and if at all the services are helping to alleviate financial exclusion. NRB has implemented various strategies to enhance payment inclusion using financial digital services and payments, advocating the utilization of internet banking, mobile banking, wallets, corporate and interbank payment systems and QR code-based payments and transfers with some customer and MSMEs still resorting to conventional payment systems (Alliance for Financial Inclusion, 2025). Academic research about the actual grass-roots effects of these initiatives is scarce. Limited academic research exists regarding the actual outcomes of government-sponsored social projects because studies focus mainly on diverse populations outside rural communities. Research has found

that increased mobile and internet access can lead to many more people having deposit accounts, as it shows higher financial inclusion rates (Niraula and Adhikari, 2019).

In a country like Nepal, where geographical and infrastructural barriers have affected financial inclusion in long way, digital banking offers a significant opportunity. This study therefore seeks to explore not only the reach and usage of digital banking but also find out the barriers faced by people due to low digital literacy, lack of awareness, and trust issues. And helps to understand how these factors influence adaptation of digital banking services. Therefore, these dynamics should be well understood by the banks, financial institutions, policymakers, and development agencies. The findings of the study aim to offer practical, evidence-based insights that can inform more inclusive, effective and sustainable digital banking strategies that respond to Nepal unique economic, cultural and technological environment.

1.6 Limitations of the Study

Every research study has certain limitations which can influence how findings should be interpreted. In this study, several factors may have affected the scope, accuracy, and reliability of the results related to digital banking's role to promote financial inclusion across Nepal. The study benefits from awareness about these limitations because of its fundamentals on how to locate its place and underscores specific research directions for upcoming investigations. This investigation has the following main restrictions:

- The findings may become outdated quickly due to the rapid evolution of digital banking technology.
- The rural respondents might have less knowledge of the concept of digital banking and therefore may not respond reliably.
- Economic, political, and regulatory changes during the research period may influence the findings but are not directly covered in the study.
- Only selected financial and statistical tools are used in this study.

CHAPTER II
REVIEW OF LITERATURE

Literature review is one of the essential and very significant aspects of any research project; it becomes a basis on which all rests. It involves systematic examination of existing theories, research findings, policy documents, and academic publications related to the chosen topics. This chapter examines the national and international literature that addresses digital banking, financial inclusion, and technological factors influencing their growth and adaptation.

By analyzing existing knowledge, this chapter not only justifies the need for the present study but also helps in designing the research methodology, setting objectives and interpreting findings in a Broder context. It also considers the role of policies from institutions like Nepal Rastra Bank and the influence of the digital literacy in shaping user behavior. This research is not only a contribution to the current knowledge but also a contribution to existing discussion among people working in the academic and practical field of widening financial access to all Nepalese.

2.1 Conceptual Review

The conceptual review contributes to the comprehension of the key ideas and theories regarding the digital banking and financial inclusion in Nepal. Digital banking refers to the provision of bank services by using digital platforms such as mobile banking, internet banking, ATM and other digital wallets. The future of digital payments and banking in Nepal is bright as ICT investments, online payment promotion efforts, as well as other major initiatives such as the Nepal Payment Switch deployment, online payment VAT exemptions, QR codes in passports, expansion of broadband internet via Rural Telecommunications Development Fund (RTDF), free SIM cards to students above 16, countrywide 4G internet coverage, online e-learning portals, and government services in the Nagarik app are just some of the initiatives being done (Nelito, 2023). Digital banking combines technology with banking services to simplify and safeguard the customer's journey. It merges automation, artificial intelligence, and strong security protocols to deliver an adaptable banking experience (DECTA, 2024).

Financial inclusion may be considered as the utilization of the State of affordable and responsible financial products and services that the people and the business entities

require, including payments, credits, savings and insurance. They will also include individuals which may not necessarily have proper access to the traditional financial services such as the poor, the female folk and the other types of socially excluded population. Financial inclusion is the process of making the formal financial system accessible, utilized and made comfortable to everyone in the economy. The point of view of policymakers. This is one of the ways to increase economic development, minimize poverty and maximize the quality of lives of people.

2.1.1 Forms of Digital Banking

Digital banking is one of the most powerful digital transformations in the contemporary banking sector in Nepal over the past decade and a half the technology, consumer demands and policies. Here is analysis in recent years the race to adopt digital banking in Nepal escalating rapidly:

2.1.1.1 Mobile Banking

Using mobile apps or USSD codes to phone is the most widely used digital channel in Nepal. Customers can go into a bank's app to check balances, transfer funds, pay bills or even scan QR codes at merchants. NRB data shows mobile banking customer numbers grew from about 21.4 million in mid-2023 to 24.65 million by mid-2024.Indeed, mobile banking is the most popular access platform for payments in Nepal (Nepal Ratra Bank, 2025). This reflects both broad smartphone uses and strong industry support: for example, major bank such as Nabil, global IME, NIC Asia and Nepal SBI Bank all offer feature-rich mobile apps (often with dashboards QR payment and bill-pay modules). Even basic phone users can access mobile banking via USSD codes. The pandemic greatly boosted adaptation, NRB states that mobile users more than doubled between mid-2020 and 2024 (Paudel, 2025). In practice, mobile banking is used for fund transfers person to person, merchant payment, utility payments, mobile top-ups and more effectively replacing many cash transactions.

2.1.1.2 Internet Banking

Internet banking, which is also known as electronic or online banking, refers to the practice of conducting banking transactions and managing bank accounts through the internet, instead of physically visiting a bank branch. Nearly every commercial bank in Nepal offers web-based services enabling customers to make interbank transfers, pays fees or taxes and view account statements. Users using internet banking in Nepal grew

to 1.9 million at mid-July 2024, compared to 1.8 million in mid-July 2023 (Nepal Rastra Bank, 2025a). The growth rate shows that many customers prefer mobile apps or local branches for daily use. However, internet banking is popular for large-value payments and formal transactions: for example, the national clearing houses connetIPS system (an online funds-transfer getaway) is accessed via bank websites. The bank says it's good because you can use them anytime, it's also tricky. Making things easy for people online is super important, but some users still think websites are harder to use than mobile banking. Internet banking is essential of Nepal's digital system, facilitating everything from e-commerce payments to interbank fund transfers.

2.1.1.3 Digital Wallets (E-Money)

Digital wallets or e-wallets are phone-based payment accounts issued by Payment Service Providers (PSPs) and regulated by NRB as e-money. The leading examples include eSewa, Khalti, IME PAY, Prabhu Pay, Fone Pay and Nabil Bank (nBank). Users upload funds into these wallets through bank accounts or cards and make payments to merchants, transfer funds, top up their mobile phones, or pay bills. Wallets supports QR payments and online checkouts, often interoperating with the bank system. According to NRB report, user of digital wallets increased to 23.46 million by mid-July 2024. This is about 4x higher than the 6.27 million reported in 2020. Transaction volumes are large, e-wallets handled about NRP 302.7 billion in FY2023/24 (Nepal Rastra Bank, 2025a). NRB and government have promoted wallets to boost inclusion. Digital wallet services often reached the unbanked; agents of PSPs can go onboard with customers with minimal KYC. Customers use wallets for street-level payments (such as Nepalese tea stalls, local shops), online shopping, and recurring payments (utilities, insurance). Many wallets integrate with bank networks too. E-wallets have become a core part of Nepal's digital finance, bridging users and merchants in cash light economy.

2.1.1.4 QR Code Based Payments

QR code based digital payments are increasing in popularity in Nepal, allowing customers to pay using their own mobile banking apps installed in smartphone by scanning a QR code displayed by merchant. Nepal adopted a standardized QR framework in 2021, allowing customers to pay by scanning a merchant’s QR code with their mobile banking app or wallet app (Nepal Rastra Bank, 2020). Multiple service providers (Fone pay, eSewa, Khalti etc.) and banks support QR payments. Over the past

three years QR volumes grew on average 230% per year (*The Kathmandu Post*, 2025). According to NRB report QR is now “the most widely preferred instrument "in Nepal. Customers as well as merchants prefer QR because of cheaper and instant instruments. Government programs and banks encourage QR in rural areas too. In practice, QR payments have become the most demanded instrument from street vendors and grocery stores to toll booths and educational fees. Other than this, the use of QR code payments as shown in the Payment Insight Report 2023-24 released by the central bank has adversely impacted the popularity of traditional debit cards (Nepal Rastra Bank, 2025a). ConnetIPS, interbank fund transfer, cardless withdrawal and payment portal are other inventions that have decreased reliance on the conventional banking product.

2.1.1.5 Branchless Banking

The delivery of financial services by banks without having a physical branch or location is known as branchless banking. This means that clients can use ATMs (Auto-mated Teller Machine) and other online platforms to access banking services like deposits, withdrawals, and transfers. Branchless Banking refers to the system of delivering banking services to the targeted customers and shunning the process of putting in place the physical networks of bank branches or business correspondents. Banks will be allowed to engage authorized agents (local shops, kiosks, and mobile vans etc.) under NRB regulations, equipped with point-of–sale (POS) machines to offer basic financial services like account opening, deposits, withdrawals, remittances and bill payments. The main objective of branchless banking is to promote financial inclusion in rural areas where the services of banking easily cannot be reached. Branchless banking was actively promoted by central banks in recent years, and banks have set up networks of agents (for example NIC Asia banks agent outlets or Rastriya Banijaya Banks vehicle-based banking). In Fiscal year 2023/24 branchless banking in Nepal recorded 0.88 million worth NPR 18.05 billion (Nepal Rastra Bank, 2025a). In qualitative terms, agents often serve low-income, rural customers, but limitations like low literacy, digital awareness, and intermittent connectivity have slowed adaptation. Branchless banking is a targeted tool for financial inclusion.

2.1.1.6 Automated Teller Machines (ATMs)

Automated Teller Machine is referred to by its acronym ATM. An ATM machine (Automated Teller Machine) is a computer-based system which allows people to carry out different kinds of banking transactions that are carried out without the help of a human teller. It provides an efficient way of monitoring and checking our bank accounts even when we are not doing business with banks during normal working hours. In Nepal ATMs are operated virtually by all banks and financial institutions (BFIs). Nepal Rastra Bank (NRB) statistics shows that ATM deployments have steadily increased, the total number of terminals grew from 2791 in mid-2018 to 4325 in mid-2021 (Nepal Rastra Bank, 2025a). The Payment System Oversight Report 2023-24 by the Nepal Rastra Bank shows that between fiscal years 2018-19 and 2019-20, the number of ATM users in Nepal has risen to 6.70 million representing a 21 increase over the period. ATMs facilitate quick withdrawals and deposits without teller cheque and often allow interbank transactions via national switching. With the help of ATMs, financial access increases to cities but not in remote areas. Because it requires reliable power, network connectivity, and high maintenance costs. Security challenges like physical vulnerabilities, card fraud schemes, outdated technology, and customer distrust hinder the adaptation of ATMs in Nepal. Overall, ATMs are essential access point in Nepal, providing emergency cash services when branches are closed and in rural communities where digital payments haven't yet replaced physical currency.

2.1.1.7 Debit Card

A debit card, which is known by its alternative name of bank card or cheque card, is one of the payment cards that can be used to complete transactions in place of cash. Debit cards are account-linked payment cards that allow holders to perform transactions directly from their bank accounts. Most of the cards these days include a chip with Near Field communications (NFC) capabilities that enables touch (contactless) use while also supporting traditional swipe and insertion using PIN to complete any transactions by users. In Nepal bank issue domestic and international cards such as SCT, Visa or Mastercard's. The scale of debit card uses in Nepal has grown rapidly. NRB reports show issuance of debit cards rising from 5.5 million in mid-2018 to 12.2 million by mid-2023 (Nepal Rastra Bank, 2025a). This growth underscores their significance; debit cards have become the dominant non-cash payment instrument in Nepal. The use of debit card facilities for transactions without requiring physical cash. Debit cards

enable direct payment from the user's account. By linking payments to the bank account, debit cards help to bring underbanked customers into the formal system. NRB regulates debit cards within a broader payment systems framework. The Payment and Settlement Act of the year 2019 and its associated bylaws gives the power to monitor the operations of cards to Nepal Rastra Bank (NRB). In short, the debit card eco-system in Nepal operates under strict NRB oversight to ensure reliability and customer protection.

2.1.1.8 Credit Cards

A credit card (or charge card) is a kind of financial tool routinely offered by banking institutions which allow its users to withdraw cash with some limits upon credit or to buy items or services. It is a kind of credit facility by means of which customers can borrow the money up to an amount to which they have been approved. The card can be used by the credit cardholders to pay technicians who offer different services and supplies. Credit-cards use in Nepal is limited to remote area, foreign travelers and online shoppers. Nepali Visa/Master credit cards work at merchant and ATMs worldwide. Many cards offer reward points, cash back, or insurance. To get a credit card, a customer requires documented income or collateral. NRB strictly regulates credit cards. All credit card issuance and features must comply with NRBs directives and banking laws.

2.1.2 Relationship between financial inclusion and digital banking

Advances in digital banking have greatly helped more people in Nepal to gain access to financial services. Using mobile devices and the internet, digital banking makes it possible to serve areas that were not reached before. The term digital finance has become universally understood as a key instrument that could be used to progress financial inclusion, since it utilizes novel technologies to broaden access to financial services and simultaneously reduce the costs involved in their delivery by multiples (Verma and Shome, 2025). Digital tools have helped millions of people throughout the world to start using formal financial services online (Demirgüç-Kunt et al., 2018). The ease and fact that digital banking is available at any time and from anywhere helps more people start using it (Ozili, 2018). Mobile money and microfinance products designed for low-income populations make them more able to stand financial difficulties (Donovan, 2012). Moreover, having helpful digital services and educational tools with

banks helps people be more financially literate and trustful of their bank (Aron, 2018). New technology is revolutionizing finance by improving how, when, and where people can use financial services. It fills the gap between banks and people from underserved groups. Higher levels of financial participation because of digital banking help the poor and encourage the growth of all members of the economy.

2.2 Theoretical Review

Digital banking is an explanation for financial inclusion through financial expansion of financial services for underserved populations supported by existing theories. Digital banking theories creates foundational concepts about improving access to financial services and removing barriers that helps to boost economic growth in Nepal. The digital transformation in financial services can be understood through several key theories and models. The study relies on the following models:

2.2.1 Financial Intermediation Theory (Gurley and Shaw, 1960)

John Gurley and Edward Shawcame up with a Financial Intermediation Theory in 1960 that discusses the functions of financial institutions serving as intermediaries between suppliers of funds and borrowers (Gurley and Shaw, 1960). This theory suggests that financial institutions are middle agents in that they mediate the exchange of funds between the people that are saving and the people in need of credit or loans. It discusses the principal role of financial intermediaries, namely, banking and non-banking financial institutions in ensuring mobilization of savings and distribution of credit in an economy. Lack of infrastructure blocks certain communities from financial services, so digital banking reduces physical barriers by providing easy financial facilities. For this the Digital banking services play an intermediate role in the growth of financial services. Processing financial transactions through digital banking made it more accessible and cost lower for users. Mobile banking, internet banking, and digital payment systems facilitate customers execute fast and lower cost financial transactions. The types of digital banking like Mobile banking, internet banking, and branchless banking provide advantages to people who live in rural areas. In Nepal digital wallets named as eSewa, Khalti, branchless banking and QR payments system deliver financial services at lower cost in rural areas as well as city area. The financial intermediation process receives enhancement through digital banking because it expands financial

services to all segments, operates efficiently and remains accessible for everywhere which ultimately boosts financial inclusion in Nepal.

2.2.2 Diffusion of Innovation Theory (Rogers, 1962)

Diffusion of Innovation Theory was first presented by a communication theorist E.M. Rogers of the University of New Mexico in the year 1962. The theory describes the process through which innovations, i.e., either new technologies or ideas, slowly circulate among people. The theory has described the phases (or phases) that take place when innovation is being rolled out among the members of a social system, i.e., the early adopters followed by the majority, and even the laggards. The theory suggests five key beliefs that influence the adaptation of any innovation: advantages, complexity, compatibility, trialability, and observability. These qualities, in the context of digital banking in Nepal (mobile banking, internet banking, QR payment and e-wallets), will determine the rate at which underserved, and the rural population will begin accepting and adopting financial services that will make the biggest contribution towards financial inclusion. Rogers (1995) suggested five keys beliefs that affect the adaptation of any innovation. Relative advantage is the first aspect in diffusion of innovation theory; it is the perception that an innovation is greater than the current idea or practice that it is replacing. According to this concept, the adopters consider the economic and social costs and benefits of utilizing the innovation. Speed, cost, and convenience are the relative advantages of digital banking in the case of Nepal. Nepal Rastra Bank stated that digitization facilitates safe online payment and the cheap faster services.

The second one is the complexity that describes how much innovation is hard to comprehend or operate. This is the idea pertaining to physical or mental exertion that people need to employ and utilize the new technology. More complicated or counter intuitive a system is going to be, the more it will disappoint one to use it, especially with those having low digital literacy skills or exposure to technology resources. In Nepal complexity hamper the use of digital banking services in remote areas where people think digital services like mobile banking, internet banking difficult to use. Old age and uneducated people from city areas also face difficulty understanding concept of digital banking. Third is Compatibility and this has been defined as the extent to which the innovation is perceived as compatible with the values that people have in their lives such as the socio-cultural values, the previous experiences and previous ideas used and the need of the customers to get the innovation. Compatibility in Nepal helps

to provide depends on how good digital banking fits general public's lifestyle. As people use digital payment through mobile banking, internet banking and ATMs to their day-to-day transactions, this shows how Nepalese people fit in with digital transactions.

Trialability is another belief stated by Rogers, which refers to the degree to which an innovation may be experimented on a limited basis. In Nepal, Digital banking technologies allows some level of trial, mobile wallets like eSewa or Khalti allow users to start transactions through small balance and explore features.so the trial phase can expand users to adopt digital banking system. The last one is Observability, which refers to the results of innovation that are visible to others. Today's young people no longer carry cash, the use of bank notes decreased as digital transactions dominate buying, selling and payment.

Rogers (1962) explained that the people within the social system were divided into five categories according to their readiness to adopt an innovation. These groups are early technology adopters, early and late majority, laggards and the innovators. Innovators are eager to try new innovations and new technologies. Innovators are also the risk takers. In Nepal innovators in digital banking include tech entrepreneurs, urban youth and early users of platform like eSewa, Khalti and mobile banking. Early adapter refers to senior or respected opinion leader. They adopted new technologies and ideas earlier, so they influence others with their past experiences. In Nepal they are banking professional, educators, middle class urban users and progressive merchant, who uses digital banking earlier to influence. Another is The Early Majority, the group of people who adopt digital banking after the early adaptation. Salaried employees, Urban and semi-urban merchants are examples of the early majority. They observe and then only use digital banking like QR payment and mobile banking. The new ideas and technologies adopted just after the average member of society are categories in the Late majority. In Nepal rural households, older adults and small-scale traders fall into this category. Illiterate people from urban and rural areas, old age and people who don't have any internet or mobile phone access are categories in the laggards' group.

Rogers Diffusion of innovation theory helps to provide a roadmap to understand how digital banking and new technologies are adopted by different groups of people in Nepal. By understanding the innovation attributes and adopter categories banks, policy

makers and fintech providers can develop targeted strategies to expand financial inclusion all over the country.

2.2.3 Technological Acceptance Model (TAM)

Technological Acceptance Model (TAM) was developed by Fred Davis in the 1980s. The Technological Acceptance Model is one of the most influential theoretical models explaining how customers or users come to adopt or accept and use technology. This model is founded on the Theory of Reasoned Action and the Theory of Planned Behavior (Aljarrah et al., 2016). In case of Technology Acceptance Model (TAM), the two main factors, which shape the attitude towards a technology, are Perceived Usefulness (PU) and Perceived Ease of Use (PEU). Perceived Usefulness as defined by Davis (1989), describes the perception an individual has about the effectiveness of using a certain technology to improve his or her work, whereas Perceived Ease of Use reflects how an individual perceives using the technology to be, that is, an effortless process.

Research conducted and published by Alsamydai et.al (2014) establishes a positive impact on perceived usefulness on attitudes, behavioral intention, and actual usage of mobile banking services by the users. Specifically in relation to Nepal, customers view digital banking as a useful instrument in handling financial activities efficiently hence their overall financial experiences (Kandel et al., 2024). A positive perception of mobile banking usefulness can overcome users' intrinsic resistance to changing established behaviors and drive them to adopt technology (Kelly and Palaniappan, 2023). Adaptation of digital banking services such as mobile banking, internet banking and e-wallet helps to remove physical transaction problems in the context of Nepal. Perceived ease of use means simple and user-friendly mobile banking and e-wallets are to operate transactions. Users adopt digital banking not because of any experience, but the desire to choose such a level of banking based on their current desire and needs (Venkatesh and Davis, 2000).

The Technological Model (TAM) helps to find valuable insights into the factors influencing the adaptation of digital banking services and enhancing financial inclusion. The degree of belief tends to adopt the available financial services provided by banks and financial institutions through digital platforms. Both perceived usefulness

and perceived ease of use play important roles in creating user attitudes and intentions towards adopting technologies and digital banking services.

2.2.4 Institutional Theory

Institutional Theory, primarily developed by John W. Meyer and Brian Rowan. And later extended by Paul Dimaggio and Walter Powell in 1983. Institutional theory attempts to rationalize why organizational practices tend to become alike with time occurring most of the time under coercive, mimetic, and normative pressures and how compliance fosters legitimacy that is pivotal to organizational survival (Kauppi, 2022). The main idea of this approach is that organizations adopt certain practices, structures or technologies not only for efficiency but to maintain and gain stability, and acceptance from external stakeholders such as regulatory bodies, professional networks and society. Scott (2008) describes Institutional Theory as a well-known paradigm that points to the influence of the institution on the actions of an organization and aims particular attention to such cases as legitimacy, ethical behavior, and efficiency.

Digitalization involves not just technologies but also new practices, norms and structures that can be seen as a shift toward a new institutional logic which shapes how individuals and organizations coordinate around digital initiatives (Schildt, 2022). The adaptation of digital technologies and ideas drives widespread change across societies, industries, organizations and individuals' routines by transferring human tasks and automating the process.

2.3 Empirical Review

Mookerjee et al. (2025) examined how digital banking initiatives can promote financial inclusion in remote areas. The researchers found that mobile banking services and digital wallets have made positive impact in financial access for people in rural areas by removing barriers such as distance from banks and few branches. The authors highlight that digital banking supports economic empowerment by offering secure transactions, credit access, and encouraging better savings. Yes, it highlights the fact that many people still have trouble using technology, face internet issues and aren’t sure they trust digital Apps. The study suggests that well-designed digital approaches, better network infrastructure, and favorable policies are essential for successful banking in rural areas.

Gakuru et al. (2025) investigated the implications of online banking on financial inclusion. The purpose of the study was to provide a comprehensive analysis of online banking influences on financial inclusion globally. The authors employed a literature review methodology and examined 563 documents systematically, sourced from academic databases such as JSTOR, Scopus, Google Scholar, Web of Science and ResearchGate. Relevant documents were selected for in-depth analysis. A study showed that online banking has the potential to promote financial inclusion by creating financial services more accessible and affordable. Although some factors such as lack of digital literacy, high transaction cost and poor distribution of infrastructure that are present in remote areas hinder the effectiveness of digital banking services. The study suggests that financial institutions should invest in simplifying online banking interface, reduce transactional costs, and accommodate users with low digital literacy and by increasing co-operating with financial institutions to create innovative solutions that expand service delivery.

Nnaomah et al. (2024) analyzed digital banking and financial inclusion in USA and Nigeria. The objective of this study was to analyze how digital banking influence financial inclusion in both countries. Utilizing secondary data, policy documents and stakeholders' interviews, the research highlights that digital banking has positively and significantly enhanced financial services for underserved populations. In United states, a robust regulatory framework and technological advancement have encouraged competitive digital environments which leads innovative solution to reduce barriers whereas in Nigeria rapid growth of mobile banking and digital payments services driven by necessity to reach remote area. The study points out that both have done a good job of pushing forward digital banking for inclusion finance. And success as well as scale of application varies due to different economic development, regulatory environment and technological infrastructure. It suggests collaboration and multi country learning and adaptation of best practices among each other so that it enhances the effectiveness of digital banking for promotion of financial inclusion.

Murrar et al. (2024) investigated banking sector and economic Growth in the digital transformation era. The purpose of the study was to determine the relationship between digital transformation and economic growth. Utilized both maximum like Hood and Bayesian structural Equation modeling (SEM), the study analyzed how digital banking influences economic indicators. The findings of this research suggest that the

development of digital banking has significantly increased bank deposits, and the use of loans and investments so this impacted economic growth positively. The study concluded that digital banking plays an intermediate role in the modern economy, which connects surplus and deficit units and facilitates economic growth.

Basnayake et al. (2024) examined financial inclusion with the help of modern digitalization, its availability and economic growth in Asia-pacific countries. The study analyzed the impact of digital financial inclusion on economic growth across 30 Asia-Pacific countries using panel data from 2014-2017 and 2021. The authors constructed a comprehensive DFI (Digital Financial Inclusion) index through a three-stage principal component analysis, incorporating both traditional and modern digital financial access and usage indicators. The fixed-effect regression models were used by the researcher and the investigation revealed that there was a statistically significant positive association between the financial inclusion with digital technology and economic growth. The study ends with the conclusion stating that it could be highly beneficial to use the improvement of digital financial services to achieve greater economic development when the initial rates of financial inclusion are lower and mentions the necessity of tailor-made policy instruments to facilitate inclusive economic progress.

The research article referred to as Exploring the effect of e-banking products and services on conventional banking transaction in Nepalese commercial banks by Adhikari (2024) researched on the impact of e-banking services on normal banking action in Nepal. The purpose of the study was to provide beneficial knowledge on the aspect of E-banking relationship with the traditional banking transactions in Nepal commercial banks about their complexity. The research applied a mixed-methods quantitative research method which helps to process the ideas on the adaptation and impacts of e-banking systems like ATMs, mobile banking, and internet banking in the Nepal based commercial banks. The results showed that the incorporation of e-banking services has had a tremendous impact on the traditional banking transactions, a change that attracted changes in customer activities and work processes. The research demonstrated that while e-banking offers numerous benefits, including increased efficiency and customer convenience, it also presents challenges. Additionally, recommendations are provided for banking institutions to effectively leverage e-banking technologies so that the performance of the banking enhances the financial landscape.

Menza, Jerene, & Oumer (2024) investigated the effect of financial technology (Fintech) for financial inclusion in Ethiopia during this digital economic era. The main purpose of the study was to examine the effects of financial technology on financial inclusion. Authors used secondary data, which was collected from nine commercial banks (panel units) from the year 2015 to 2020. The random effect model was employed to estimate the effect of explanatory variables on the variable of interest based on Hausman test results and after testing all possible assumptions of the model. The findings demonstrated that digital services such as ATM, mobile banking, POS, and agent banking were found to have statistically significant positive effect on financial inclusion.

Kavitha (2023) investigated digital banking and its impacts. The main objective of the study was to explore the influence of digital banking on customer behavior and satisfaction. Authors employed a descriptive research design; they gathered primary data structured questionnaire targeting bank customers. The focus of this research was to understand transaction patterns and customer perceptions regarding banking services. The department concerned should be aware of security, data breaches and potential service disruption due to internet connectivity issues that were prominent among respondents. Findings indicated that customers appreciated the convenience, time, efficiency, and 24/7 accessibility offered by digital banking platforms. The study concluded that for the sustained adaptation of digital banking it needs to offer streamlined services, addressing security concerns and ensure reliable internet infrastructure, which helps to enhance financial inclusion and customer satisfaction.

Varuni (2022) analyzed the impact of digital banking services on financial inclusion. The purpose of the study was to analyze the impact of digital banking on financial inclusion. Using qualitative research methodology based on secondary data sources including articles, books and journals, the study explores the role of digital banking in enhancing access to financial services. The study highlights that the ubiquity of mobile phones and internet connectivity facilitates unprecedented access to banking services, reducing dependence on physical branches. Moreover, digital banking also helps to provide educational vehicles, enhancing financial literacy through interactive platforms and resources. This innovation extends to alternative credit scoring, where digital banking leverages nontraditional data sources to assess creditworthiness, and opens avenues for those without established credit histories. Finally, the study concluded that

e-banking and digital banking have the potential to promote financial inclusion, improve digital literacy, infrastructure limitations and regulatory frameworks must be addressed to realize the benefits of it.

Gharbi and Kammoun (2022) investigated relationship between financial inclusion and digital banking in Tunisia. They examined digital banking influences on financial inclusion in Tunisia. Authors utilized a questionnaire survey to a Tunisian bank employee, the research assesses the impact of digital banking including ATMs, mobile banking, internet banking-wallets on dimension of access, usage, quality and efficiency of financial inclusion. The findings demonstrated that there is a significant positive relationship between digital banking services and financial inclusion. The research is done at the Tunisian environment, and it gives empirical data on the role that digital banking plays in creating a more financially inclusive system.

Osuji et al. (2022) explored the electronic banking platforms and financial inclusiveness index in Nigeria. Employing a correlation and ex-post facto research design, the authors analyze secondary data (2006-2020), utilizing multiple regression analysis via e-views 9 software. The authors also use the volume of transaction through ATMs, point-of-sale (POS) systems, web-based applications, and mobile devices as a proxy for electronic banking, while the ratio of adults with bank accounts to the total adult population serves as a proxy for financial inclusion. The results reveal that transactions via POS and mobile devices have a strong positive correlation with financial inclusion whereas ATM and web-based transactions do not exhibit a significant relationship. The conclusion of this research is that enhancing POS a mobile banking services can substantially improve financial inclusion in Nigeria. The study suggested that deposit money banks address obstacles related to ATM usage, educate customers on the benefits of web-based channels, reduce data costs, increase internet penetration and mitigate cybersecurity threats. The availability of POS system suggests promoting financial inclusion.

Gashi and Alili (2022) examined the impact of electronic banking on economic growth in Kosovo to find out the relationship between electronic retail banking services and economic growth in Kosovo. Authors utilized time-series data from the central bank of Kosovo spanning 2007 to 2019. They employed a linear regression model to assess how the adaptation of electronic banking products affects the country's real GDP. The

outcome of the study revealed that a positive correlation indicates the expansion of electronic banking services contributes to the expansion of economic growth by enhancing financial inclusion and provides improved access of financial products to households and businesses. The study concludes that promotion of electronic payment systems can yield significant macroeconomic benefits and recommends policymakers and financial institutions in Kosovo invest in the development of financial services to foster sustainable economic development.

Kenye and Kumar (2022) examined the role of digital banking on the financial system of the economy. The main objective of this study was to find out how digital banking contributes to economic growth. The study used descriptive methodology, drawing on secondary data collected from sources such as the Reserve Bank of India, bank websites and newspaper. According to authors digital banking services including ATMs, NEFT, PPIs, SMS banking-cheques and online fund transfers have significantly expanded access to financial services, particularly among previously remote areas. The result demonstrated that digital banking plays important role in promoting financial inclusion and economic development by providing affordable and accessible services.

Pradhan et al. (2021) investigated effect of E-banking on financial inclusion in Nepal. The purpose of this study was to identify the how various electronic banking systems influence the financial inclusion in Nepal. The study used 150 respondents who consume digital baking services as the primary source of data, and this was sampled via the standardized techniques of conducting questionnaires. The researchers used the regressions models to examine the effects of five significant factors including automated teller machines (ATMS), mobile banking, internet banking, agency banking and point-of-sale (POS) terminals. These results show that all these factors have a positive influence on financial inclusion or, in other words, greater access to digital banking that makes financial inclusion better in Nepal. The research lays great importance on the need to extend and market the digital financial services to fill in the gap of financial coverage in Nepal.

Mastran (2021) investigated opportunities and challenges of online banking in Nepal. This study was undertaken to answer the questions on how e-banking can be used to find a solution to the challenges and opportunities in the Nepal banking industry to achieve financial inclusion. The tool used to collect data is questionnaires, structured

interviews and desktop research. The results show that an emerging trend in banks is to incorporate e-banking to stay competitive, keep up with the changes in technology, cut down the cost of transactions and make life easier for their customers. This research finds that the banks would do well to invest in well-developed e-banking systems and implement a frequent customer education program to aid popularizing the digital banking practices.

Mahato and Goet (2021) investigated the impact of agency banking on financial inclusion in Nepalese commercial banks. The main purpose of the study was to examine the influence of agency banking services on the financial inclusion of Nepalese commercial banks. The researcher employed quantitative research methodology (regression analysis, mean, standard deviation and correlation), the primary data collected through well-structured questionnaire (252 respondent) distributed to banking staff and customers services to banking services. Data analysis was done with the help of JASP and Microsoft Excel to create quantitative reports. The result revealed that there was significant influence of digital/agency banking like ATMs, mobile banking, PÒS and IPS on financial inclusion in Nepalese commercial banks. The study concluded that agency banking offers as an effective strategy for commercial banks of Nepal to enhance their customer base and promote inclusive financial services within an economy.

Niraula and Adhikari (2019) studied the digital financial services as a possible approach to financial inclusion based on secondary data and Multiple regression analysis in Nepal. Their results showed that there is a significant positive correlation between availability of mobile and internet and the count of deposit accounts and this means that digital connectivity would be an important factor to promote financial inclusion in Nepal. Based on the study, to eliminate the digital gaps in finance in remote areas, it is possible to improve the digital infrastructure and promote the use of digital banking. It will be excellent empirical evidence of the use of digital tools in the national financial inclusion plans of Nepal.

Pushkar and Gupta (2019) discussed what e-banking means in India, its impact, its growth, and the future. The goal was to show the history and development of electronic banking, and the outlook of the future with the subject being qualitative research based on secondary sources which include academic articles, books, and journals. The authors

point out that advancement in technology has greatly impacted on the working of the banks where technological changes have raised the quality of services, customer satisfaction, high productivity, and minimal operational cost. They also show the role played by the electronic payments in enhancing faster and increased volumes of settlements leading to the reinforcement of the banking industry in India. The analysis has concluded that with the further development of technology, e-banking will become a crucial aspect that will determine the future of financial services in India.

Watts (2017) used case study to analyze the influence of electronic banking on the growth of financial institutions in India. This study was conducted to compare India to the other nations in the electronic banking domain and evaluate how it has contributed to the development of the financial institutions. The results indicate that e banking has played a significant role in customer outreach broader area, low cost, innovation, competition, as well as in giving work. The analysis indicates that there is need to ensure the Indian government, and the Reserve Bank of India should continue to enhance electronic banking and mitigate the challenges that are associated with it. It summarizes that e-banking is a major contributor to institutional development in that

Regmi (2015) examined a study on scenario of mobile banking in Nepal. The main purpose of the study was to be analyzed the current state of mobile banking in Nepal. The primary objectives of the study were to assess the adaptation and utilization of mobile banking services among banking customers, and to determine the indicators that influencing their usage. Authors utilized a mixed-method approach, using both primary and secondary data. Primary data was collected from survey carried out by mobile banking users. Secondary data was collected from various online sources and articles. The findings of the study showed that mobile banking has significantly influences customers' banking behavior, leading to increased convenience and efficiency in transactions. The study concluded that when the perception of customers towards mobile banking changes as a fast and convenient service which is only for the wealthy and professionals, the adaptation of mobile banking declines. The banking sector should clearly communicate policies, minimize charges and promote inclusivity through targeted awareness campions to increase users towards mobile banking.

In a study conducted by Siddik et al. (2014), the researchers evaluated the effects of using e-banking on financial performance within a developing economy and in this case

the research was focused on Bangladesh. A study of 13 private commercial banks between 2003 and 2013 was taken and ordinary least squares (OLS) regression was implemented to evaluate the effectiveness of e-banking on the major performance indicators such as Return on Equity (ROE), Return on Assets (ROA), and Net Interest Margin (NIM). The findings show that e-banking improves ROE by more than two years, but it worsens the business performance in the first year after implementation. The impacts on ROA and NIM were not significant although they were in the right direction. The analysis indicates that give-up on profitability can be a short-term drawback in adopting e-banking, but profitability can be improved in the long run. The authors advise the bank management, as well as bank policymakers in the developing economies such as Bangladesh to increase the e-banking services and take note of their future profitability that may help the banks to make more profits in the economies in the long run.

Table 1

Review of Major literature

S.N.	Authors	Objectives	Methodologies	Major findings
1.	Gakuru et al. (2025)	To provide a comprehensive analysis of how online banking influences financial inclusion globally.	Review methodology and examined 563 documents systematically, sourced from academic databases such as JSTOR, Scopus, Google Scholar, Web of Science and Dimensions, relevant documents were selected for in-depth analysis	Online banking has potential to promote financial inclusion by making financial services more accessible and affordable.
2.	Mookerjee et al. (2025)	To explore the role of digital banking	Primary data and Secondary data (from	Mobile banking and

		in enhancing financial inclusion in rural areas.	case studies, policy analysis and empirical research)	digital wallets have increased financial access for people in rural areas by removing barriers such as distance from banks and few branches.
3.	Nnaomah et al. (2024)	To analyze the how digital banking influence financial inclusion in USA and Nigeria.	Secondary data, policy documents and stakeholders' interviews	Digital banking significantly enhanced financial services to undeserved population
4.	Basnayake et al. (2024)	To examine the impact of digital financial inclusion on economic growth.	panel data (2014,2017 and 2021) fixed-effect regression models	A significant positive relationship between digital financial inclusion and economic growth.
5.	Murrar et al. (2024)	To determine the relationship between digital transformation and economic growth.	like Hood and Bayesian structural Equation modeling (SEM)	The development of digital banking has significantly increased bank

				deposits, and use of loans and investments so this impacted economic growth positively.
6.	Menza et al. (2024)	To investigate the effect of financial technology n financial inclusion for financial inclusion in Ethiopia during this digital economic era.	secondary data, uses random model to evaluate results.	The finding revealed that ATM, mobile banking, POS, and agent banking were found to have statistically significant positive effect on financial inclusion.
7.	Adhikari (2024)	To provide effective insights on the dynamic interplay between, the E-banking and conventional banking transactions within the commercial banking in Nepal.	Mixed-methods research approach	The integration of e-banking services has significantly influenced conventional banking transactions, leading to shifts in customer behavior and

				operational processes.
8.	Kavitha (2023)	To explore the influence of digital banking on customer behavior and satisfaction.	Descriptive research design; primary data structured questionnaire	Customers appreciate the convenience, time, efficiency and 24/7 accessibility offered by digital banking platforms.
9.	Gharbi and Kammoun (2022)	To examined how digital banking influences financial inclusion in Tunisia	Questionnaire survey to a Tunisian bank employee.	There is a significant positive relationship between the adaptation of digital banking services and the enhancement of financial inclusion.
10.	Varuni (2022)	To analyze the impact of digital banking on financial inclusion.	qualitative research methodology based on secondary data.	The ubiquity of mobile phones and internet connectivity facilitates unprecedented access to banking services,

				reducing dependence on physical branches.
11.	Osuji et al. (2022)	To explore the electronic banking platforms and financial inclusiveness index in Nigeria,	Secondar data (2006-2020) correlation and ex-post facto research design, multiple regression analysis	Transactions via POS and mobile devices have a strong positive correlation with financial inclusion whereas ATM and web-based transactions do not exhibit a significant relationship.
12.	Gashi and Alili (2022)	To find out about electronic banking products services and economic growth in Kosovo.	Time-series data from the central bank of Kosovo spanning (2007 to 2019), linear regression model	The positive correlation between electronic banking products and economic growth enhanced economic growth as well as providing increased access to

				households and businesses.
13.	Kenye and Kumar (2022)	To find out how digital banking contributes to economic development.	Descriptive methodology, secondary sources (such as Reserve Bank of India, bank websites and newspaper.	Digital services including ATMs, NEFT, PPIs, SMS banking and cheque transfer have significantly enhanced access to financial services, especially in remote areas.
14.	Mahato and Goet (2021)	To analyze how the concept of agency banking services impacted the financial inclusion of Nepalese commercial banks.	Quantitative research methodology (regression analysis, mean, standard deviation and correlation), Primary data.	There is significant influence of digital/agency banking like ATMs, mobile banking, POS and IPS on financial inclusion in Nepalese commercial banks.

15.	Pradhan et al. (2021)	To identify the how various electronic banking systems influences the financial inclusion in Nepal.	Primary data from questionnaire, employed regression analysis	The factors of digital banking have positive impact on financial inclusion and access to digital banking which has increased. financial inclusion.
16.	Mastran (2021)	To examine challenges and opportunities of e-banking in the Nepalese banking sector to promote financial inclusion.	Primary data collected through questionnaire, interview, and desktop research.	Banks are adopting online baking to stay competitive, keep pace with technological advancement, lower transaction costs, and enhance user convenience.
17.	Niraula and Adhikari (2019)	To analyze the relationship between digitalization and Financial Inclusion in Nepal.	Secondary data and multiple regression analysis.	Positive and significant relationship between digital banking and deposits account to promote

				financial inclusion in Nepal.
18.	Pushkar and Gupta (2019)	To examine the evolution and future of electronic banking in India.	Qualitative research methodology based on secondary sources	Digital banking has significantly improved service quality, enhanced customer satisfaction, increased productivity, and reduced operational costs.
19.	Watts (2017)	To compare India with other countries in the field of electronic banking.	Data collected from reserve bank of India and Government	Electronic banking has been instrumental in extending banking services to boarder customers at reduced costs, fostering innovation, competition

				and employment across various industries.
20.	Regmi (2015)	To assess the Adaptation and utilization of mobile banking services among Nepalese banking customers, determining the indicators influencing their usage	Mixed-method approach, incorporating both primary and secondary data.	Mobile banking has significantly influenced customers' banking behavior, leading to increased convenience and efficiency in transactions.
21.	Siddik et al. (2014)	To investigate the effect of e-banking on the financial performance of commercial banks in Bangladesh.	Collected data from 13 private banks over the period of 2003-2013, ordinary least squares (OLS) regression analysis, ROA, EOQ, NIM	Initial investment in e-banking may temporarily reduce profitability but enhance the long-term adaptation of digital services.

2.4 Research Gap

While various research is now taking place on financial inclusion and digital banking, there are some critical gaps. Studies such as Mastran (2021) highlight the increased adaptation of digital banking services such as internet banking and mobile banking among commercial banks in Nepal. Although most of these studies depend on descriptive methods and urban-centric samples, they offer limited importance to rural, low-income or digitally illiterate users. Some research only acknowledges technological and infrastructure barriers but ignores the user behavior, trust or digital divide across demographics. Although international literature, including the research of Gharbi and Kammoun (2022) in Tunisia and Basnayake et al. (2024) in the countries of the Asian-Pacific region, exists, demonstrating the positive effect of digital finance on economic growth, the conclusions made by the authors cannot be directly applied to Nepal without special customization. There is also no extensive research yet on whether the digital banking models in Nepal have been able to deliver long-term financial inclusion especially among such women, senior citizens and micro-entrepreneurs under the marginalized groups. Such critical concerns as the danger of cybercrimes, the unawareness of the services fees, and the fact that digital banking is perceived being accessible solely to the rich people have not been discussed in detail. Also, the financial efficiency of agency banking, especially based on the augmentation of digital financial services, remains poorly evaluated.

Besides, there is no extensive study concerning the effectiveness and long-term implications of the government and banking sector efforts to stimulate digital banking. The urgent necessity is the requirement of a detailed study that examines the strategies in which digital banking can impact demographic groups in Nepal, assesses the establishment of such policies in the country, and reviews major factors that either promote or detour the adoption. These aspects are the lack of education, little trust in digital systems, fears related to security, and low awareness of the general population.

CHAPTER III
RESEARCH METHODOLOGY

The purpose of research methodology is to apply systematic procedures to conduct the study. This chapter outlines the methods and techniques used in the present research. The research design is described first, then the population and sample, sampling design, types of data, collection instruments, data analysis methods, the framework used, and the variables included are all conveyed.

3.1 Research Design

This research has utilized both descriptive and causal comparative pattern of investigation to evaluate the relationship of digital banking and financial inclusion in Nepal. The descriptive part will attempt to explain the demographic profile and digital banking behavior across respondents, and it will create an accurate picture of the state of the financial inclusion. The descriptive part describes the variables and items by using means, standard deviation. The causal component aims to determine the certain digital banking services including mobile banking, ATM services, internet banking, e-wallets and agent banking contribution on financial inclusion. The duality of the approach adopted by the study allows it not only to describe the current situation, but also to examine the cause-effect connection between a chosen independent variable (Digital services) and dependent variable (financial inclusion).

3.2 Population and Sample, and Sampling Design

The sample in this study is the population segment in Nepal those who have access to mobile banking services before June 2025. Google Forms was used to collect data and can be defined as an effective online survey tool because it is an easy-to-use, rapid, and cheap assistance to collect the responses. The sample size of the study is over 400 participants to whom the questionnaire was sent with the help of Google Forms. There were 404 responses that were received. However, during the data cleaning exercise, it was observed that some of the responses were duplicates of others that probably happened due to a problem in the mobile internet connection whereby the form was submitted several times. The final list of 395 valid responses was attained after eliminating the duplicated answers and incomplete answers. The general Sample Size Formula for justification of the survey is

$$n = \frac{z^2 \cdot p \cdot (1 - p)}{e^2}$$

Where

n= required sample size
Z= Z-score (which is 1.96 for 95% confidence level)
p = estimated proportion of the population (In our case 0.5)
e = margin of error (which is 0.05 for ± 5%)

Since our valid response is 395 > 384, it can be used for generalization at a 95% confidence interval.

The researchers study how digital banking relates to financial inclusion through a convenience sampling approach. The method is cost-effective and time saving since the method chooses participants who are easily accessible and available thus suitable to a low-resource person like students and researchers.

The researchers selected convenience sampling in this research because the researcher would reach the study participants as part of his personal and professional networks. This non-probability method may not allow generalization to the greater population, but they are often used in exploratory research where there is limited time, budget and access.

3.3 Nature and Sources of Data and Instruments Data Collection

The research is conducted on primary information gathered first-hand through Nepal users of digital banking services. Data was gathered using a structured questionnaire, which included both normal questions and Likert-scale items to measure the frequency of usage, accessibility, and perceptions of various digital banking. The questionnaire was distributed to 395 respondents across different regions and demographics, ensuring diversity in age, gender, income level, occupation, education, and place of residence. The collected data provides reliable insights into how different digital channels influence financial inclusion. Through a well-structured survey tool, there is

consistency in the collection of data, and one could strong statistical analysis by using descriptive statistics, correlation analysis and multiple regression, using JASP software.

3.4 Method of Analysis

In this research, the quantitative research method will be applied in the attempt to investigate how digital banking facilitates financial inclusion in Nepal. This is the type of study where quantitative methods would be especially appropriate because they would make it possible to measure results objectively, analyze the results statistically, and generalize the findings based on numerical data. They used structured questionnaires to get information on a select number of respondents. To interpret obtained data appropriately, the researcher fits three main statistical methods: descriptive analysis, correlation analysis, and regression analysis. The above techniques allow converting raw data into interpretable knowledge. Microsoft Excel and JASP were used to analyze the whole situation, and the results were interpreted correctly and efficiently.

3.4.1 Descriptive Analysis

Descriptive analysis is a statistical tools that helps to explain the most important parts of a dataset clearly. It makes understanding the data easier and allows us to try advanced methods later. Experts in this field use descriptive statistics to present the profile of respondents and analyze how they use mobile banking services, internet banking, ATMs, digital financial services, and trust/security in digital banking. To do descriptive analysis, experts use mean and standard deviation.

3.4.1.1 Mean

Average, which is also known as the arithmetic mean, is an expression which is obtained by adding all values of a dataset and dividing the total with the number of values. It is universally employed as one of the most popular measures of central tendency that gives a single value and depicts the center of a set of data or a typical response. In this research, the average of participants about each Likert scale question is calculated based on the mean. The analysis defines the overall tendency or attitude of the respondents towards each statement, by taking mean scores of all items of the sample.

$$\text{Mean } (\overline{X}) = \frac{\sum X}{n}$$

Where,

$\overline{X}$ = Mean

$\sum X$ = Sum of all data values

n = Total number of responses

3.4.1.2 Standard Deviation

Dispersion, which indicates variation, is measured in a collection using a statistic called Standard Deviation (S.D.). It is commonly defined as the positive square root of the variance but unlike variance S.D. is expressed in the same unit as the original data which makes it easier to spread or disperse data points around the mean. Whenever data points move farther from the Mean, the deviation in the data set increases which results in a bigger standard deviation. Each sample in the study has a standard deviation computed using the Likert scale responses. Standard deviation is used to judge the reliability of participants' opinions about digital banking services. Having a high standard deviation for questions on trust/security may suggest that participants think about this topic in very different ways.

$$\textbf{Standard Deviation } (\textbf{S.D.}) = \sqrt{\frac{\sum(\mathbf{X} - \overline{\mathbf{X}})^{\mathbf{2}}}{\mathbf{n}}}$$

$\overline{X}$ = Mean of the values for each dependent or independent variable

X = Individual response value for each dependent or independent variables

n = Total number of data points (responses)

3.4.2 Correlation Analysis

Correlation analysis is a statistical tool that is used to measure the strength and direction of the relationship between two or more variables. For this research, correlation analysis is used to measure how different components of digital banking independent variables (Mobile banking services, internet banking services, ATMs, Digital financial literacy, Trust and security) are associated with the level of financial inclusion. Pearson's correlation coefficient(r) is used to show how strong and in which direction this

relationship exists. A value close to +1 indicates a positive relationship whereas –1 indicates a strong negative relationship and 0 indicates no relationship between variables. The aim is to find out if more people having and using these services results in higher financial inclusion. The Pearson correlation coefficient is calculated using this formula:

$$r = \frac{n\sum XY - (\sum X)(\sum Y)}{\sqrt{[n\sum X^2 - (\sum X)^2][n\sum Y^2 - (\sum Y)^2]}}$$

Where,

X = Value of independent variable Y = Value of dependent variable

n = Number of responses

3.4.3 Regression Analysis

In the study, regression analysis is used to examine the effects of digital banking services on financial inclusion in Nepal. Whereas correlation shows that they moved in sync, regression allows to identify how one or more independent variables (mobile banking, internet banking, ATM services, E-Wallets and Agent Banking) influences financial inclusion. It enables researchers to quantify the significance of determining how significant each variable of digital banking is, and to determine the services that contribute towards the financial inclusion. The most applicable model in the analysis is Multiple Linear Regression because there will be a single dependent variable that will determine the influence of various independent variables. Regression analysis has enabled the research to indicate the digital banking services instrumental in advancing financial inclusion and enabling policy makers and banks to focus on the regions where funding of financial services can be enhanced in Nepal. In the present research, the general multiple regression formula in this study is written as:

$$Y = \beta_0 + \beta_1 \text{ Mobile Banking Services} + \beta_2 \text{Internet Banking Services} + \beta_3 \text{ ATM} + \beta_4 \text{ E-Wallets} + \beta_5 \text{ Agent Banking} + e_{it}$$

Where,

Y = Financial Inclusion

β_0 = The Intercept Constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = The slope indicates the extent to which financial inclusion changes in response to a one-unit change in the digital banking service (independent variable).

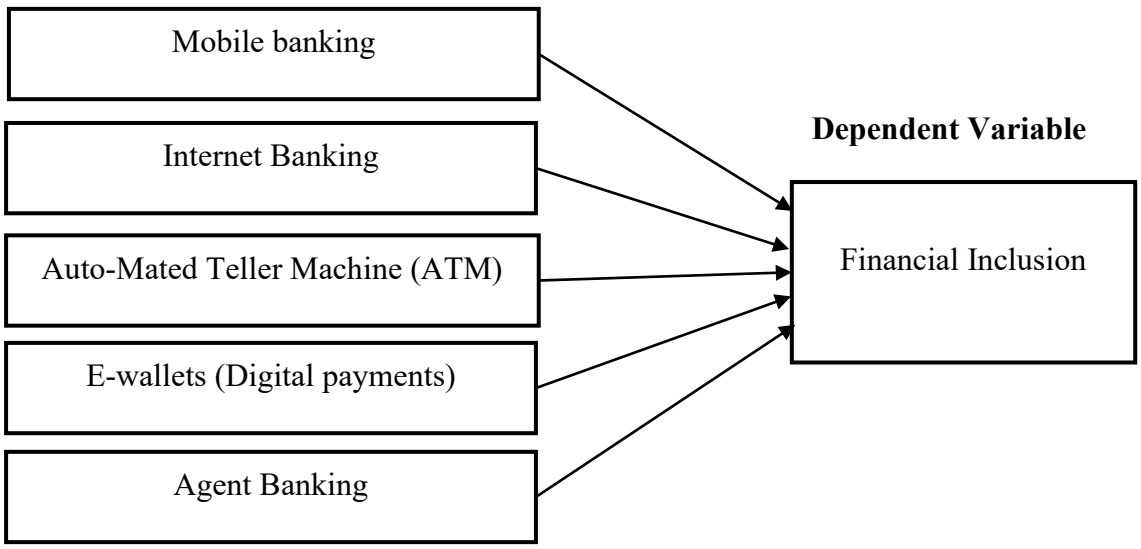
e = Error Component

3.5 Research Framework and definition of Variables

The study has its structure mainly in the research framework. It is on this hypothesis that all the other parts of the study are founded. The study establishes the kind of relationship that occurs between the variables, explains the theory behind such relationships, and elaborates the connectivity between the variables. The development of testable hypothesis involves the existence of a well-constructed research design. Among the independent variables, this study considers mobile Banking, internet banking, Automated teller machine, E-Wallets and Agency Banking and the dependent variable was Financial Inclusion.

Figure 1:

Research Framework of the study



Source: *Durai and Stella* (2019), *Pradhan and Dahal* (2021) *and Menza et al.* (2024)

Dependent Variable

Financial inclusion

The dependent variable in this research is financial inclusion which indicates how many people and businesses use reasonably priced, beneficial and responsible banking solutions such as savings, payment methods, credit and insurance offered for the long term. Achieving this is important for lessening poverty, increasing the economy and making the financial system stable (Demirgüç-Kunt et al., 2018). In Nepal, financial inclusion is important for supporting those who are usually excluded and for increasing the economy in rural and little-served areas. The study looks at financial inclusion as something that is shaped by mobile banking, internet banking, digital financial literacy, ATM services, and the trust/security of financial technologies.

Independent Variable

Mobile Banking

Mobile banking means using your mobile device for activities such as checking your balance, sending money, making payments, and recharging your phone. Mobile banking has become powerful for bringing financial services to people who live in remote and rural regions. Mobile banking services help encourage saving time and financial expenses, which makes services available to a greater number of persons (Loaba, 2022). The use of apps such as IME Pay, eSewa, Khalti, and mobile apps from commercial banks now makes it far simpler for Nepalese to interact with finance systems. Poudel et al. (2024) found that having strong trust when using mobile wallets encourages users to want to use them for payments and trust in these tools mainly depends on how secure and private they are. Mobile banking makes physical banking unnecessary and helps users take care of their finances whenever and wherever they are.

Internet Banking

With internet banking, commonly referred to as online banking, customers can take care of their finances, including transferring funds and paying bills, over the internet. Internet banking helps individuals from remote areas use financial services easily, with fewer trips to a bank and better chances of being included in the financial sector. It is shown that improved use of internet banking supports higher financial inclusion in

Nepal, emphasizing its usefulness in digital banking (Pradhan and Dahal, 2021). Relying on online banking helps higher numbers of people gain access to essential financial services (Gakuru et al., 2025). In its 2025 publication, the International Finance Corporation (2023) reports that NRB wants Nepal to become more inclusive financially and to rely less on cash, so they promote e-banking and QR-based payments. With such initiatives, domestic payment systems have become more efficient and the needed rules for digital payment providers have been developed to protect users and ensure their safety.

Automated Teller Machines (ATMs)

The existence of automated teller machines (ATMs) greatly contributes to increasing financial inclusion in Nepal. Making banking easily available, even in areas where banks do not exist, ATMs greatly assist in including unbanked people in formal financial services. Studies have pointed out that having ATMs available can improve financial inclusion for many. Pradhan and Dahal (2021) studied how electronic banking is impacting financial inclusion in Nepal. ATM usage research results show that more ATMs lead to more people having access to banking, proving the value of ATMs for people who were previously unbanked. ATMs serve a great purpose in financial inclusion as they give people a chance to use financial services and may become significant for helping unbanked and under banked individuals meet their monetary needs (Nayan et al., 2025). Bringing ATMs to underbanked areas helps more people safely, cope in emergencies and join the formal financial system, thus reducing poverty and promoting economic progress as ATM networks are widened (Atmaxina, 2024).

E-Wallets

E-wallet, also known as digital wallet, is a wireless or web application that allows users to hold digital money and make financial transactions using their smart phones or other internet devices. E-wallets give its users the capability to avail multiple services that include paying utility bills, mobile recharge, online purchases, QR-code payments, funds transfer, and remittance collections. Within the Nepalese context, online wallets like eSewa, Khalti, IME Pay, and Prabhu Pay have been instrumental in the process of increasing the availability and accessibility of financial services among both urban and semi-urban citizens. These services are governed by Nepal Rastra Bank (NRB) who issues license to individuals as Payment Service Providers (PSPs) through its payment

systems lawful system. To enhance confidence and security regarding online transactions the NRB has developed regulatory policies like limits on transactions, internet security procedure, as well as interoperability principles (`Rawal and Khadka, 2022). E-wallets have emerged as an essential means to create financial inclusion by lessening the reliance on notes and coins, shortening transaction time, and providing quip access to financial services to the unbanked and underbanked population.

Agent Banking

Agency banking is a system whereby any financial institution partners with other third parties, namely the agents, to provide the banking services. Agents are people, money transfer services and shops who have the right to provide simple banking services. This has given the banks an opportunity to reach a much more audience, and this can be particularly keen in rural areas (Finextra, 2024). These agents, typically local businesses, cooperatives, or individuals are authorized to conduct basic financial transactions such as deposits, withdrawals, fund transfers, loan repayments, account inquiries, and in some cases, account opening. The model has gained prominence in developing countries, including Nepal, to extend banking services to rural and remote areas where establishing a traditional branch is not feasible. Commercial banks in Nepal have been embracing agent banking due to the need to ensure financial inclusion of low-income and rural citizens and those in marginalized groups. Agent banking is one of the main options advocating the use of inclusive finance in bringing critical banking services near unserved people.

3.6 Validity and Reliability Testing

Collection of data in this study was done using a questionnaire which focused on the effect of digital banking services on financial inclusion in Nepal. There were 395 samples selected. The questions are only those in Likert scale-style, a total of thirty (30) questions is considered in the use of Cronbach alpha to assess reliability. Cronbach's alpha reliability check is used to establish the validity and the reliability of the claims incorporated in the survey.

Table 2

Cronbach Coefficient

SN	Variables	No of items	Cronbach's Alpha
1	Mobile Banking	5	0.808
2	Internet Banking	5	0.829
3	ATMs	5	0.823
4	E-Wallets	5	0.756
5	Agent Banking	5	0.754
6	Financial Inclusion	5	0.859
	Overall	30	0.804

Note. Data based on analysis of collected data using JASP (JASP Team, 2025)

Table 2 has the Cronbach Alpha values of internal consistency reliability of the six constructs in the study which measured Mobile Banking, Internet Banking, ATMs, E-Wallets, Agent Banking, and Financial Inclusion. Each construct was filled with five items on a Likert scale and thus the total items were 30. The value of Cronbach Alpha values of all variables was higher than acceptable range of 0.70 (Nunnally, 1978), which means that all the variables are reliable. Financial Inclusion showed strong internal consistency, highest alpha of 0.859 followed by Internet Banking (alpha = 0.829) and ATMs (alpha = 0.823). Reliability of Mobile Banking was also established (alpha = 0.808). E-Wallets and Agent Banking had even less but still acceptable reliability rates that were 0.756 and 0.754 respectively. The overall validity of the questionnaire was attested with the Cronbach area of 0.804 which means that items of the survey were well-designed and corresponded to each other within the constructs.

CHAPTER IV
DATA COLLECTION

The Primary objective of this research is to investigate the role of digital banking in enhancing financial inclusion in Nepal. To realize this goal, this chapter has been organized into three major parts that include data presentation, data analysis, and data interpretation. The initial part is about the demographic status of the respondents. The second part will provide descriptive statistics of the main variables applicable in this study giving insights into how the respondents utilize digital and bank services and the state of financial inclusion. The third part displays the outcomes of the inferential statistical analysis, which involves correlation, regression analysis, and the ability to examine the research hypotheses and determine the connection between the independent variables (mobile banking, internet banking, ATM, Agent Banking, E-Wallets) and the dependent variable (financial inclusion).

4.1 Demographic Profile of the Respondent

In this section, we will report on the demographic analysis and interpretation of primary data that were gathered by means of questionnaires. Depending on their demographic profile, the respondents are categorized into different categories. The following section gives details regarding the demographic characteristics of the respondents who will be taken as a subject of study. The demographic characteristics of the study participants in this study are gender, age, education, occupation, income, residential and access to digital banking.

4.1.1 Gender of the Respondent

The respondents' gender distribution includes both male and female participants. The frequency and percentage of each gender category are presented in Table 3 below.

Table 3

Gender of the Respondents

Gender	Frequency	Percentage (%)
Male	224	57
Female	171	43
Total	395	100

Note. Data based on analysis of collected responses (n = 395)

Gender distribution of the respondents is presented in Table 3. With total respondents of 395, 224 were male and 171 were female; the percentage of the male respondents being 57% and female respondents 43% which demonstrates that more male respondents participated than female respondents in the sample size of 395. Although the main aim of the study was to ensure that the sample size was balanced and independent, selection showed that there were slight differences of the number of male and female participants. As can be concluded the number of the respondent was mostly male that is 57%.

4.1.2 Age

The respondent's age has been categorized into four different groups as below 20, 21-30, 31-40, Above 40. The percentage composition and frequency of different age groups is illustrated in Table 4 below.

Table 4

Age group of the Respondents

Age	Frequency	Percentage (%)
Below 20	21	5.32
21-30	114	28.86
31-40	141	35.70
Above 40	119	30.12
Total	395	100

Note. Data based on analysis of collected responses (n = 395)

Table 4 displays out of 395 respondents, large number of respondents i.e. 141 respondents comprising 35.70% belong to the age group 31- 40, 21 respondents comprising 5.32% were age group of below 20 years, 114 respondents comprising 28.86% were age group of 21-30 and 119 respondents comprising 30.12% were age group of Above 40. So, it can be concluded that most respondents were from the 31-40 age group.

4.1.3 Education Qualifications of the Respondents

The educational qualifications of the participants are categorized into five groups: Below SLC/SEE, SLC/SEE, +2/Intermediate, bachelor's degree and master's Degree or Above. The Frequency distribution and percent composition of respondent's education qualification is shown in Table 5 below.

Table 5

Education Qualifications of the Respondents

Education level	Frequency	Percent (%)
Below SLC/SEE	24	6.08
SLC/SEE	41	10.38
+2/Intermediate	100	25.32
Bachelor's degree	168	42.53
Master's degree/Above	62	15.69
Total	395	100

Note. Data based on analysis of collected responses (n = 395)

Table 5 shows that the highest number of respondents are of bachelor's level out of the total 395 respondents, was made up of 168 respondents i.e. 42.53%, +2/Intermediate level composed of 100 respondents i.e. 25.32%, master's degree or above that included 62 i.e. 15.69%, SLC/SEE included 41 i.e. 10.38% and below SLC/SEE amounted to 24 i.e. 6.08%.

4.1.4 Occupation

The occupation of the respondents is classified into four groups as students, employee, self-employed, housewife and others. The frequency and percentage breakdown of occupation of the respondent is illustrated in Table 6 below.

Table 6

Occupation of the Respondents

Occupation	Frequency	Percent
Student	50	12.66
Employee	143	36.20
Self-employed	112	28.35
Housewife	49	12.41
Others	41	10.38
Total	395	100

Note. Data based on analysis of collected responses (n = 395)

Table 6 shows that the highest proportion were the employees, who represented 36.20 percent (143 respondents) of the total. This implies that a considerable number of study subjects are formal workers. The second largest category was self-employed persons at

28.35 percent (112 out of the total respondents) in the second position, then students and housewives who were 12.41 percent (49 of the total subjects). The other 10.38 percent (41 respondents) was already under the others, which comprises the group of people in the occupation that cannot be in the stated groupings.

4.1.5 Income

The respondent's income level is categorized into five groups as below Rs.20,000, Rs.20000-30,000, Rs.30,001-40,000, Rs.40,001-50,000 and above Rs.50,000. The frequency and percentage breakdown of occupation of the respondent is illustrated in Table 7 below.

Table 7

Income of the Respondents

Income	Frequency	Percent (%)
Below Rs. 20,000	100	25.32
Rs.20,000-30,000	78	19.75
Rs.30,001-40,000	102	25.82
Rs.40,001-50,000	72	18.23
Above Rs.50,000	43	10.88
Total	395	100

Note. Data based on analysis of collected responses (n = 395)

Table 7 shows that on the sample size of 395 respondents, there were high numbers of respondents i.e. 102 respondents constituting 25.82 percent in the swift of income Rs.30,001-40,000, 102 respondents constituting 25.32 percent were in the swift of income of below Rs.20,000, 78 respondents comprising 19.75 percent were in the group of income of above Rs.20,001.

4.1.6 Place of Residence

The place of residence of respondents is categorized into three groups as Rural Area, Semi-Urban area and Urban/city Area. The Frequency distribution and percentage composition of respondent's place of residence is presented in Table 8 below.

Table 8

Place of residence of respondent

Place of residence	Frequency	Percent
Rural Area	116	29.37
Semi-Urban Area	171	43.29
Urban/City Area	108	27.34
Total	395	100

Note. Data based on analysis of collected responses (n = 395)

Table 8 shows that with the size of 395 respondents, large number of respondents from semi-urban area i.e. 171 respondents consisting of 43.29 percent, 116 respondents consisting of 29.37 percent from the group of Rural areas and 108 respondents consisting of 27.34 percent from Urban/City Area.

4.1.7 Access of Digital banking

Respondents were requested whether they had the Digital banking application on their mobile or not. Access to digital banking applications by the respondents is classified as Yes, Maybe and No. The Frequency distribution and percentage of respondent's access to digital banking is presented in Table 9.

Table 9

Access of Digital Banking of the respondents

Access of Digital banking	Frequency	Percent
Yes	368	93.17
No	10	2.53
Maybe	17	4.30
Total	395	100

Note. Data based on analysis of collected responses (n = 395)

Table 9 shows that with 395 respondents, 93.17 percent, i.e. 368 respondents were in group of "Yes", 2.53 percent i.e. 10 respondents chose "No" option and 4.30 percent (17) were in maybe group. Then it is evident that majority respondents uses or have digital banking.

4.1.8 Experience of using Digital Banking

Respondents were enquired whether they had any experience in the usage of Digital Banking. The experience of the respondents on QR payment is classified as Yes, maybe and No. Their responses are represented in Table 10.

Table 10

Experience of using Digital Banking of the Respondents

Experience	Frequency	Percent
Yes	356	90.13
No	16	4.05
Maybe	23	5.82
Total	395	100

Note. Data based on analysis of collected responses (n = 395)

Table 10 shows the experience of the respondents on digital banking. Most of them, i.e. 356 (90.13 percent) claimed to have used digital banking services meaning that there is a high adaptation of digital banking amongst the respondents. The few percentage (5.82) of respondents (23) were unable to provide response because they doubted it ("Maybe"), which can be related to less frequent or non-direct usage. A small percentage comprising 4.05 percent (16) of the respondents claimed that they had never used digital banking.

4.2 Descriptive Analysis of Research Variables

Descriptive analyses have been performed to give descriptive scores such as means and Standard deviation of all the variables to be utilized in the survey. The main aim or objective of the analysis provided is to explain the meaning of each variable as presented by the respondents in the survey. The descriptive statistics simply describe the sample and the measures of the observation which is, with reference to mean, standard deviation. The JASP outcome gave a few 30 items (questions) that had tangible mean scores. The descriptive statistics is utilized to verify data collected by the respondents. The study used a questionnaire as an instrument of gathering the data to be used and the questionnaire employed 5-likert rating scale of 1-Very strongly disagree to 5- very strongly agree.

The scale runs from 1 to 5, as follows:

1. Very Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Very Strongly Agree

The 30 opinion statements aimed at evaluating six variables out of which five variables are independent variables and remaining is dependent. To define independent variables, there were 25 various opinions, i.e., Mobile Banking, Internet Banking, Auto Mated Teller Machine, E-Wallets and Agent Banking. There are five opinion statements that were used to define dependent variables (i.e. Financial Inclusion). Descriptive statistics make use of simple statistical tools to obtain summaries of a given data set. Under the data collection phase when data is collected as a questionnaire, the data is summarized under each of the variables as the mean and standard deviation of the data collected.

4.2.1 Mobile Banking

In this research, mobile banking is regarded as an independent variable. To analyze the opinion of the users, this section uses five statements made in a structured manner about the use of mobile banking concerning aspects of usability, convenience and accessibility. The collected responses were studied based on a Likert scale and were analyzed by the mean and standard deviation. The findings in table and graphical form provide an insight into the general attitudes of the users towards mobile banking. Financial inclusion can be achieved through mobile banking that allows users of mobile access to financial services at anytime and anywhere. Giving questions to the respondents in the Mobile Banking Service, there were five questions.

Table 11

Descriptive study of Mobile Banking

Opinion Statement	N	Mean	S.D.
Using mobile banking is an easy method of doing a banking transaction.	395	3.853	0.931
In my opinion, it is worth considering using mobile banking.	395	3.777	0.972
It takes a lot of time and effort to work with M-banking.	395	3.757	0.957
I would transfer or collect money to or with any person with a mobile bank account.	395	3.727	0.972
Using mobile banking apps feels simple to me.	395	3.719	0.948

Note. Data based on analysis of collected data using JASP (JASP Team, 2025)

Figure 2:

Descriptive study of Mobile Banking

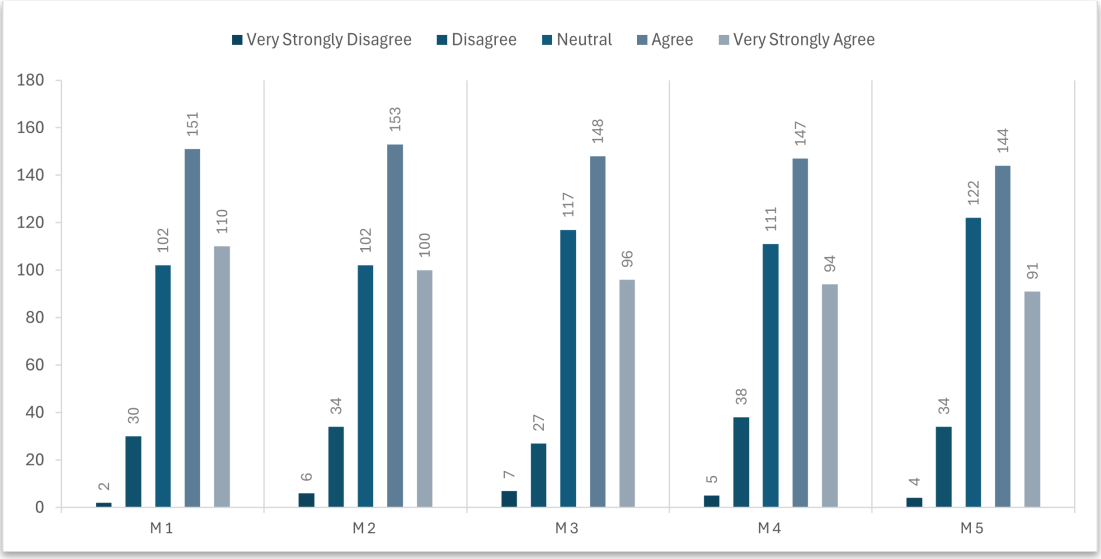


Table 11 and Figure 2 depict descriptive analysis of the opinion of respondents on Mobile Banking Service. The five statements in the section were meant to measure the users on perceptions and user-friendliness. The most favorable mean score obtained out of all the responses was the statement that "Using mobile banking is an easy method of doing a banking transaction." with mean score of 3.853 and standard deviation of 0. 931.Similarly, "Using mobile banking apps feels simple to me." Scored lowest 3.719 Mean and with Standard deviation 0.948, which indicates user finds mobile banking services are not easy and simple. The statement "It takes a lot of time and effort to work

with M-banking." Scored 3.757 mean value and 0.957 standard deviation. "In my opinion, it is worth considering using mobile banking.", Scored 3.777 mean value and 0.972 standard deviation. The statement read, "I would transfer or collect money to or with any person with a mobile bank account." its mean value was 3.727 with standard deviation of 0.972. In general, the attitudes toward mobile banking are rather positive but also cautious. Although it is simpler and saves time, some of its features and particular features related to financial transfers can be rather skeptical. These perceptions are further inclusive of insight on financial inclusion given that mobile banking provides an all-essential financial service to the users via friendly digital platforms especially those with less access to the conventional financial banking facilities.

4.2.2 Internet Banking

Internet banking can be defined as an independent variable working on this research. This segment examines the user opinions based on five logical statements of usability, convenience and accessibility of use regarding the assessment of financial inclusion. The questionnaires were done through Lickert scale, and the overall perception was understood through the mean and standard deviation of the scales. These findings, which is delivered in table and graph format, imply that there is a general acceptance of internet banking.

Table 12

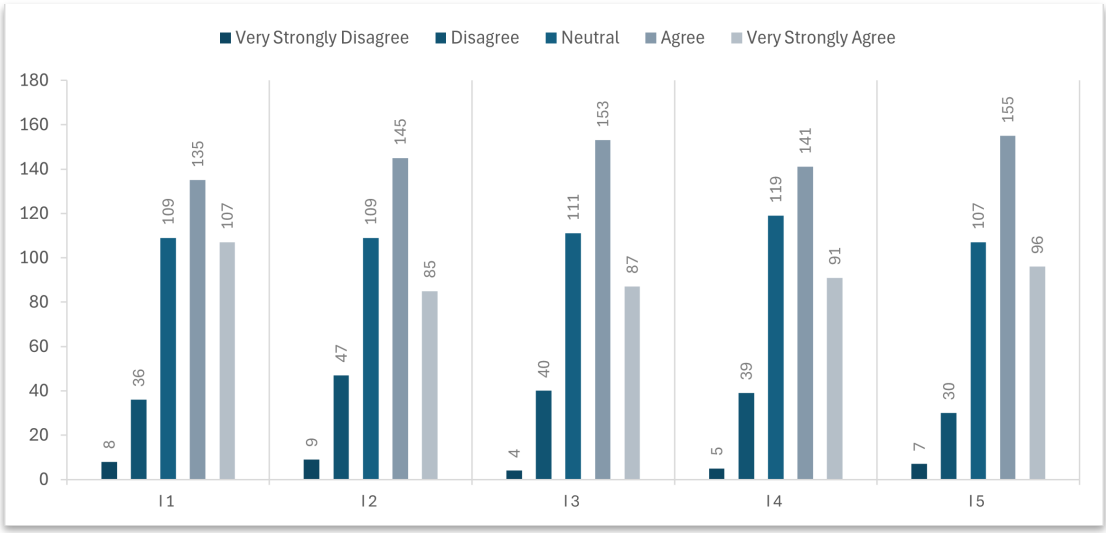
Descriptive study of Internet Banking

Opinion Statement	N	Mean	S.D.
Internet banking is time saving and hence this encourages me to use this concept frequently.	395	3.752	1.017
Access to financial services is offered by internet banking, which is more convenient.	395	3.633	1.02
I regularly check my balance and transactions using internet banking.	395	3.706	0.956
Internet banking saves time when paying bills or making payments.	395	3.694	0.974
I feel confident using internet banking services.	395	3.767	0.962

Note. Data based on analysis of collected data using JASP (JASP Team, 2025)

Figure 3:

Descriptive study of Internet Banking Acceptance



The descriptive analysis of the respondents' views towards their views on Internet Banking with reference to the five main statements was explained in Table 12 and Figure 3. The statement with the highest rating is "I feel confident using internet banking services" which scored mean value of 3.767 and standard deviation 0.962. Next in line was "Internet banking is time saving and hence this encourages me to use this concept frequently." with a mean level of 3.752 (Standard deviation of 1.017) which indicates that there is an overall belief by users that internet banking transaction is time saving. The statement that "I regularly check my balance and transactions using internet banking." Scored mean of 3.706 with standard deviation of 0.956. "Internet banking saves time when paying bills or making payments", got a mean score of 3.694 (S.D. 0.974). The mean of 3.633 (S.D. 1.02) was recorded in the statement that "Access to financial services is offered by internet banking, which is more convenient." It indicates that internet banking does not go down well with the majority as a way in which to access financial services easily or conveniently. Further, these results also underscore the effect of internet banking in improving financial inclusion in terms of providing digital financial services that are more secure and affordable to their consumers who otherwise might not be served by the mainstream banking system.

4.2.3 Automated Teller Machine (ATMs)

The ability to use ATM services is discussed as independent variable in this paper. In this area, a description of user opinion using five structured statements including ease

of use, security, accessibility, and transaction behavior will be presented to measure financial inclusion. The responses were recorded on a Likert scale, and their mean value and standard deviation were used to determine the overall perception. The results are presented in tables as well as graphs to signify the general views of the users using ATMs.

Table 13

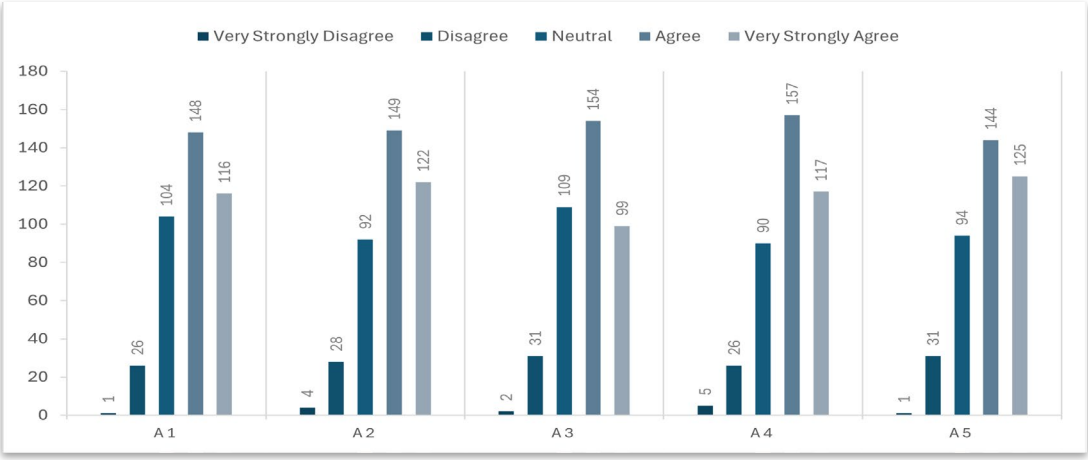
Descriptive study of Automated Teller Machine

Opinion Statement	N	Mean	S.D.
I have a large number of ATM points to which I have access very near to me.	395	3.891	0.913
I can use the ATM of other banks with my bank ATM card without difficulties.	395	3.904	0.954
I have the option to check my account balance at any ATM I use.	395	3.803	0.922
It is simpler to use an ATM than to visit the bank	395	3.899	0.945
Using ATMs makes me feel that my transactions are secure.	395	3.914	0.941

Note. Data based on analysis of collected data using JASP (JASP Team, 2025)

Figure 4:

Descriptive study of Automated Teller Machine Acceptance



In Table 13 and Figure 4, the first part illustrates the descriptive analysis of the opinions of respondents on the Automated Teller Machine (ATM) services using five structured statements. A mean score of 3.914 and standard deviation 0.941 was found to be the highest in the statement of “Using ATMs makes me feel that my transactions are

secure". This was rated as follows, "I can use the ATM of other banks with my bank ATM card without difficulties.", a mean of 3.904 and standard deviation 0.954. This statement, which reads that "It is simpler to use an ATM than to visit the bank.", had a mean value of 3.899 and standard deviation 0.945. The statement, "I have a large number of ATM points to which I have access very near to me.", had a mean score of 3.891 with standard deviation o 0.913 which indicates a satisfactory degree of familiarity and use of such a facility. The least scored was the statement, "I have the option to check my account balance at any ATM I use.", scored mean 3.803 and standard deviation 0.922, which indicates majority of people feel that they cannot easily inquire about their account balance in any ATM, they are not aware of this or do not trust or use ATM to inquire about their balance. Moreover, it is highlighted in the findings that the use of ATMs would promote financial inclusion by offering the necessary banking access, particularly those unable to access adequate banking services due to location constraints.

4.2.4 E-Wallets (Digital Payments)

In this study, the concept of e-wallet should be regarded as an independent variable. This part shows a descriptive analysis of the opinions of the users to e-wallets regarding the usage of five structured statements concerning usability, user preference, and transaction behavior. A Likert scale was used as a measurement of responses and analyzed in terms of mean and standard deviation to have a general perception on the responses. The findings, which are presented as both a table and graph, indicate the overall attitude to the adaptation of e-wallets. Another area of e-wallets that is observed in this analysis is how e-wallets could drive financial inclusion, mainly because these wallets offer proximity and convenience of digital financial services and their accessibility, particularly to those individuals who do not have access to conventional banking services.

Table 14

Descriptive study of E-Wallets (Digital Payments)

Opinion Statements	N	Mean	S. D.
E-wallets (eSewa, Khalti, Fone pay) have enhanced my access to financial services.	395	3.403	1.039
I believe that digital payment is more eco-friendly compared to the cash transaction.	395	3.41	1.015
E-wallets have enabled me to control my personal finances better.	395	3.425	1.001
Individuals with no bank account are largely excluded in the enjoyment of digital payments.	395	3.395	1.003
There should be more inclusion of everyone in digital payment policies and rules.	395	3.37	1.008

Note. Data based on analysis of collected data using JASP (JASP Team, 2025)

Figure 5:

Descriptive study of E-Wallets (Digital Payments)

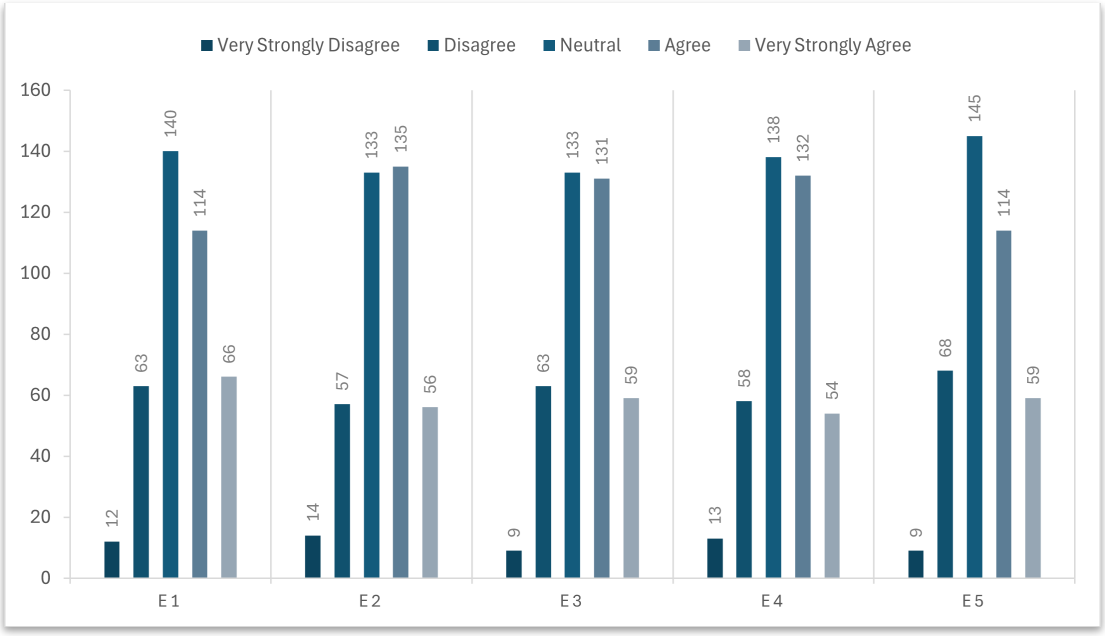


Table 14 and figure 5 shows the descriptive analysis of the opinions of the respondents concerning e-wallets (digital payments) based on five structured statements. The statement "E-wallets have enabled me to control my personal finances better." Scored the highest mean value of 3.425 and standard deviation 1.001, which indicates a relatively strong agreement among users. Similarly," I believe that digital payment is

more eco-friendly compared to the cash transaction." Scored mean value of 3.41 and standard deviation 1.015. The statement "E-wallets (eSewa, Khalti, Fone pay) have enhanced my access to financial services." Scored mean value 3.403 and standard deviation 1.039.". Similarly, "Individuals with no bank account are largely excluded in the enjoyment of digital payments" scored 3.395 mean and standard deviation 1.003, which indicates people without bank accounts may face difficulties accessing digital payment services. The statement "There should be more inclusion of everyone in digital payment policies and rules." Scored lowest mean value 3.37 and standard deviation 1.008, indicated digital payment systems should be developed to cover every stratum of the population. In general, the findings conclude in the direction of a relatively positive opinion toward e-wallets, which emphasizes their contribution to financial accessibility, sustainability and the necessity to expand the digital financial space.

4.2.5 Agent Banking

The concept of agent banking in this study is considered as an independent variable. This part includes a descriptive format of user opinion on agent banking using five constructed questions in terms of usability, access to service, confidence, and transaction pattern. Likert scale was used to measure the responses, and the mean and standard deviation review was carried out to have a general overview of the perception of users. The results, showing both in the tabular and graphical form, indicate the overall attitude to the adaptation of agent banking. Moreover, the analysis brings to light that agent banking has helped to create financial inclusion in accessing convenient and easy to reach financial services within underserved or distant localities which may not have direct access to conventional financial institutions.

Table 15

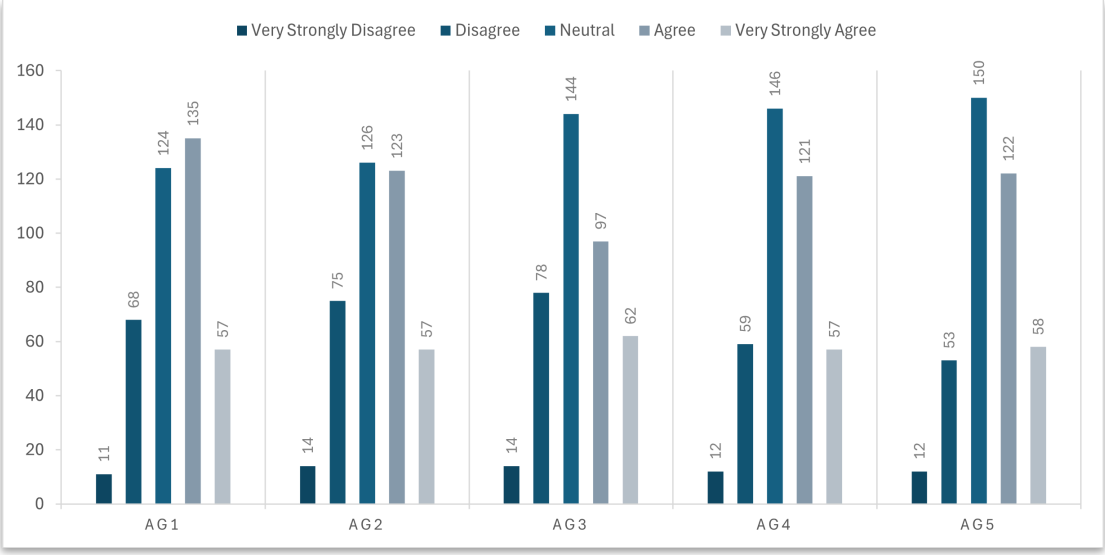
Descriptive study of Agent Banking

Opinion Statements	N	Mean	S.D.
I would use agent banking because I would be closer to the agent than the bank branch.	395	3.403	1.021
The agent user interface is available and easy to use.	395	3.339	1.053
Even when the charges of other channels are lower, banking transactions are preferred to be carried out through an agent.	395	3.291	1.063
Privacy issues do not allow me to believe fully in the use of agency banking services.	395	3.385	1.004
Agency banking has increased my independence from bank branches.	395	3.408	0.994

Note. Data based on analysis of collected data using JASP (JASP Team, 2025)

Figure 6:

Descriptive study of Agent Banking



The descriptive analysis of perceptions of the respondents is the agent banking is shown in Table 15 and figure 6. The mean value of the statement, which states that "Agency banking has increased my independence from bank branches" Scored mean value 3.408 and standard deviation 0.994, which indicates relatively positive perception of agent banking in promoting financial autonomy. Next highest was "I would use agent banking because I would be closer to the agent than the bank branch." 3.403 (SD = 1.021) indicating that closeness to agents is regarded as a moderately significant variable. The

statement scored an average of 3.385 (SD = 1.004) and it was “Privacy issues do not allow me to believe fully in the use of agency banking services.” Reflecting moderate concerns about trust and privacy. “The agent user interface is available and easy to use.” scored an average of 3.339 (SD= 1.053), and the lowest rated “Even when the charges of other channels are lower, banking transactions are preferred to be carried out through an agent. ” scored an average of 3.291 (SD= 1.063) indicating user maybe reluctant to choose agents when cheaper alternatives are available or they consider transaction cost before selecting a banking method. Overall, the responses indicate a moderate acceptance of agent banking, especially in terms of access convenience and autonomy, and show how the latter can be used to achieve financial inclusion by providing Agent banking services to rural and underserved populations.

4.2.6 Financial Inclusion

The dependent Variable in this research is Financial Inclusion, which is established by five structured questions on the access, usage, quality, affordability and efficiency of the digital services consumed by the users. Likert scale was used to collect responses, mean and standard deviations were used to analyze the responses. Results in table and figure formats indicate how the use of digital banking services such as mobile/internet banking, e-wallet, ATMs, and agent banking, affect the propensity of the participants in involvement in the formal financial program. This assists in assessing the effectiveness of these channels of promoting financial inclusion, especially to the underserved.

Table 16

Descriptive study of Financial Inclusion

Opinion statement	N	Mean	S.D.
The use of Digital services has widened my reach to financial products and services.	395	3.916	0.778
Digital banking services have enhanced my savings and investments in my funds.	395	3.937	0.729
The use of Digital services has simplified sending and receiving money.	395	3.944	0.738
The digital banking services have enhanced my access to credit and loans.	395	3.929	0.78
My overall financial life is better due to digital banking.	395	3.959	0.704

Note. Data based on analysis of collected data using JASP (JASP Team, 2025)

Figure 7:

Descriptive study of Agent Banking

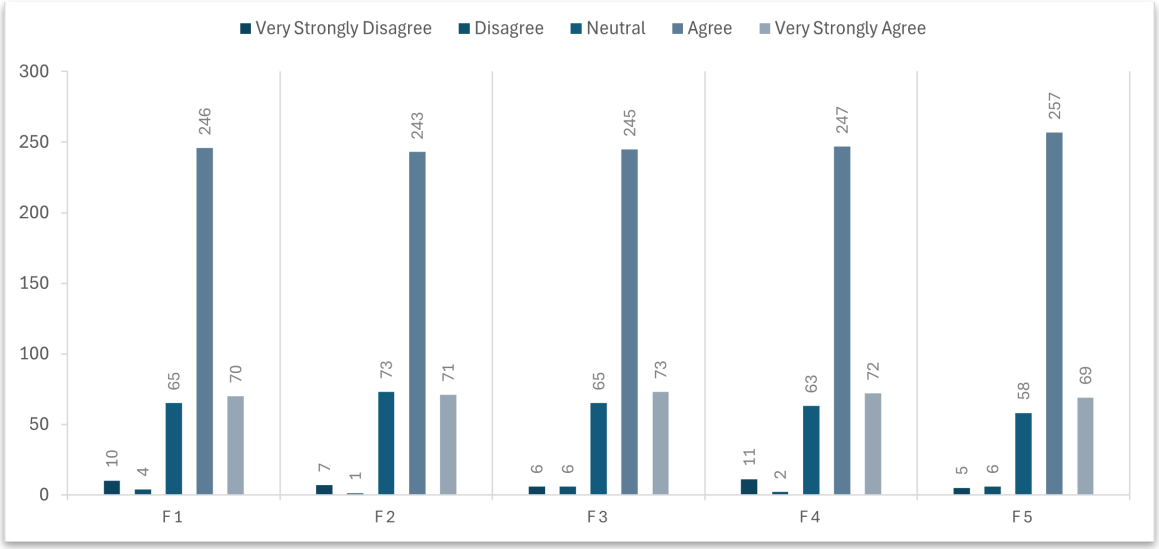


Table 16 and figure 7 shows the descriptive analysis of the financial inclusion, as a dependent variable, according to five opinion statements. The strongest rated statement, which was, “My overall financial life is better due to digital banking.”, scored mean 3.959 (SD = 0.704), which indicates good agreement that digital financial services are beneficial to the financial well-being of the users. This was seconded by “The use of Digital services has simplified sending and receiving money.” with a mean of 3.944 (SD = 0.738) and “Digital banking services have enhanced my savings and investments

in my funds." Scored mean of 3.937 and S.D. 0.729, which indicates the users find digital services useful for both routine transaction and managing finances. The minimum was 3.929 (SD = 0.780) in the statement, "The digital banking services have enhanced my access to credit and loans" indicates that while access to credits has improved, it may not be as impactful as other aspects. The lowest rated statements were "The use of Digital services has widened my reach to financial products and services." had a mean of 3.916 (SD = 0.778), through still relatively high indicating positive relationship. In general, the result showed that digital financial facilities play a pivotal role in financial inclusion, which allows consumers to access, manage, and enjoy financial services and products much faster. These results confirm that digital services significantly support financial inclusion, which is the core focus of the dependent variable in this study.

4.3 Summary of Descriptive Study

The main purpose of the research was to measure the role of digital banking on financial inclusion in Nepal. The mean value of each dimension and the standard deviation was taken. The use of reliable sources used by Creswel (2012) to extract the decision rule (cut-off point) on the mean values was reliable and explained. Creswel (2012) lists extremely low as a mean value lesser than 1.5; high between3.5 and 4.5; moderate between 2.51 and 3.5; and very high as greater than or equal to 4.5. According to this mean score assessment, the researcher assigned the mean score of the participants under each type of variable description.

Table 17

Summary of Descriptive Study

Study Variables	Mean	S.D.	Evaluation of Mean Scores
Mobile Banking	3.767	0.719	High
Internet Banking	3.710	0.759	High
ATMs	3.882	0.715	High
E-Wallets	3.401	0.719	Moderately high
Agent Banking	3.365	0.728	Moderately high
Financial Inclusion	3.937	0.597	High

Note. Data based on analysis of collected data using JASP (JASP Team, 2025)

Figure 8:

Summary of Descriptive Study

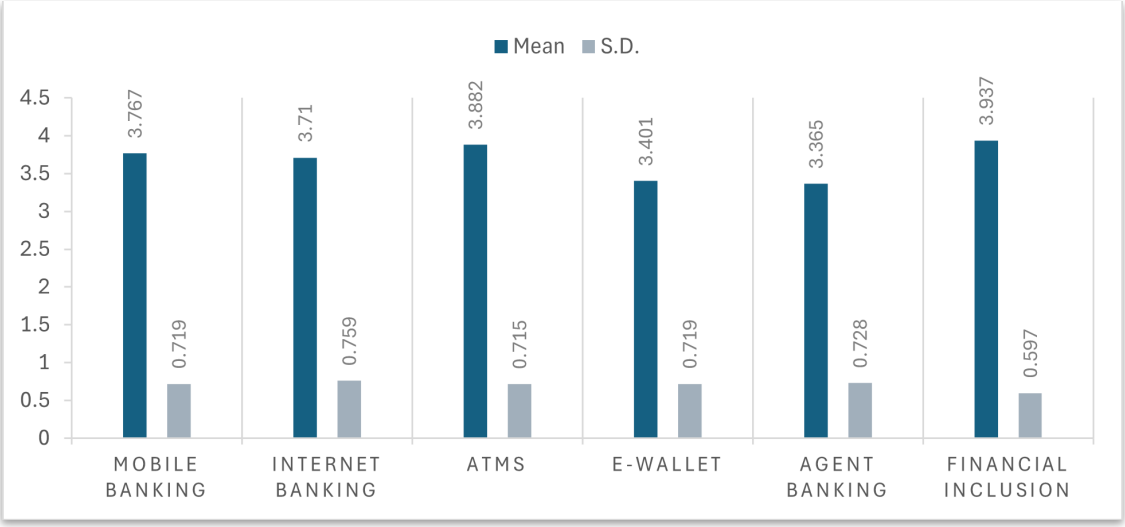


Table 17 and figure 8 showed results of the study, the dependent variable (financial inclusion) has a mean score of 3.937, which indicates a high level. Except for minor variations in the mean scores, it shows that all digital financial service components are at a high level. The element with the highest mean value 3.937 is financial inclusion, followed by Mobile Banking, internet Banking, and ATMs. The lowest-rated elements are E-Wallets and Agent Baking, with a mean score of 3.401 and 3.365 respectively, falling into the “moderately high” category. These results indicate that while e-wallets and agent banking are positively perceived, they are not regarded as strongly as the other digital services in promoting financial inclusion.

The highest mean value, 3.937, indicates that financial inclusion is a key focus of the investigation. The fact that the mean values of various digital financial services remained high in all of them indicates that people do tend to see them as useful and productive. This finding shows a broadly positive opinion of digital banking mediums that are increasing in significance to increase finance accessibility, convenience and engagement. At the same time, E-Wallets (3.401) and Agent Banking (3.365) were slightly higher but still in the moderate range, which means that they are also appreciated but might prove to be problematic in terms of credibility, acceptability, or accessibility. Overall, this research shows that digital banking plays a important role in the effort to bring about inclusive financial systems.

4.4 Correlation Analysis

In this Study Correlation analysis is used to investigate the role of digital banking on financial inclusion in Nepal. The relationship of the dependent and independent variables is shown in the following table. Correlation analysis was calculated using JASP Software to determine the connection between the variables and determine the coefficient value. The main focus of correlation analysis is to determine the connection between financial inclusion and digital banking.

Table 18

Pearson's correlation coefficients of study variables

		IB	ATMs	EW	AB	FI
MB	1					
IB	-0.017	1				
	(0.736)					
ATMs	-0.023	-0.006	1			
	(0.644)	(0.910)				
EW	−0.001	-0.022	-0.069	1		
	(0.991)	(0.662)	(0.169)			
AB	-0.018	0.060	-0.009	0.050	1	
	(0.728)	(0.232)	(0.854)	(.323)		
FI	0.394	0.379	0.160	0.311	0.118	1
	(<.001)	(<.001)	(<.001)	(<.001)	(0.019)	

Note. Figures in parenthesis are P-values. Data based on analysis of collected data using JASP (JASP Team, 2025)

Table 18 showed the results of Pearson's correlation analysis between financial inclusion (FI) and digital banking services. The analysis shows a statistically significant positive correlation between mobile banking and financial inclusion ($r = 0.394$, $p <. 001$), which means the higher the mobile banking is being used, the more positive the results in financial inclusion. Similarly, Internet Banking was found to be positively and significantly correlated with financial inclusion ($r = 0.379$, $p < .001$), which indicates users who frequently engage in internet banking tend to experience better financial access. ATM usage shows a positive but weaker correlation with financial inclusion ($r=0.160$, $p<0.001$), indicating a modest contribution to financial inclusion

outcomes. E-Wallets are positively co-related with financial inclusion as well ($r = 0.311$, $p < .001$), indicating their growing relevance in expanding access to digital financial services. Agent banking shows the weakest positive correlation ($r = 0.118$, $p = 0.019$). All digital services, i.e. Mobile and Internet Banking, ATM, and E-Wallet have positive as well as statistically significant associations with financial inclusion, and this means that the more individuals engage in these services, the more likely they are to embrace financial inclusion. However, although being statistically significant ($p < 0.05$) Agent Banking has shown a weak correlation and thus Agent Banking Market has currently less effect towards financial inclusion as compared to the other digital channels. In general, all the interactions between every variable in digital banking and financial inclusion (FI) are significant ($p < 0.05$), which indicates the relevance of digital banking in facilitating financial inclusion.

4.5 Regression Analysis

In our study this technique is used to determine relationship between dependent variables (Financial Inclusion) and independent variables (Mobile and Internet Banking, ATMs, E-Wallets and Agent Banking). It helps to find the impact of each independent variable on financial inclusion as well as overall strength and direction of these variables' relationship.

Table 19

Model summary

Model	R	R Square	Adjusted R Square	Square Std. Error of the Estimate
1	0.672	0.451	0.444	0.445

Note. Predictors: (Constant), MB, IB, ATMs, EW, AB. Data based on analysis of collected data using JASP (JASP Team, 2025)

The model seeks to predict dependent variables (Financial Inclusion) by defining the five independent variables (mobile banking, internet banking, ATMS, e-wallets, and agent banking). The fact that R value of the model is 0.672 meaning that there exists a moderate positive relationship between independent and dependent variable.

value of the R Square (0.451) implies that about 45.1 percent of the changes in financial inclusion may be attributed to five digital banking services that were incorporated in

the model. The rest of the 54.9 percent variation could refer to other causes that were not covered. The adjusted R Square denotes the number of predictors thus indicating that there is a consistent model fit. Standard error of the estimate (0.445) shows that mean difference between estimated and observed value of financial inclusion is 0.445. Overall, the model indicates that the effect of digital banking services on financial inclusion is strong and statistically significant, but they do not explain all the contributing factors.

Table 20

Analysis of Variance (ANOVA)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.36	5	12.672	64.01	<.001
	Residual	77.01	389	0.232		
	Total	140.36	394			

Note. Dependent Variable: Financial Inclusion. Predictors: (Constant), Mobile Banking, Internet Banking, ATMs, E-Wallets, Agent Banking. Data based on analysis of collected data using JASP (JASP Team, 2025)

Table 20 represents the model summary of the variables in the regression analysis, with a focus on the relationship between predictors (Mobile Banking, Internet Banking, ATMs, E-Wallets, Agent Banking) and the dependent variable (Financial inclusion).

The Regression sum of squares is 63.36, which indicates the portion of the total variance in the dependent variable (Financial Inclusion) i.e. explained by five predictors. This value presents the effects of the model explaining the variation in financial inclusion. The Residual Sum of Squares is 77.01, which indicates the unexplained variance. Together, these give a Total Sum of Squares of 140.36. The total represents the sum of both explained and unexplained variances.

The degree of freedom(df) for regression is 5. The residual degree of freedom is 389, which is calculated by subtracting the total number of predictors and one from the total number of observation (395). The mean square value for the regression is obtained by dividing the regression sum of squares by its degree of freedom, which is found to be 12.672. The model's F-value is 64.01, which measures the significance of the

regression model. Our associated p-value(sig.) is <0.001, which is less than commonly used significance level of 0.05. Which indicates that the regression model is statistically significant. This means that there is a positive and significant impact of the predictors on financial inclusion.

Multicollinearity Test (Variance Inflation Factor)

Multicollinearity among the independent variables was checked out prior to multiple regression analysis with the help of the Variance Inflation Factor (VIF) and Tolerance values. A VIF of 1 denotes absence of correlation to other predictors but a value above 10 suggests dangerous multicollinearity (Hair et al., 2010). Equally, any value of tolerance below 0.1 implies that there are problems in multicollinearity.

The values of VIF and tolerance of every independent variable in the model have been tabulated in Table 21. All the values of VIF are below 10, and tolerance values higher than 0.1, showing that multicollinearity is not an issue of concern in the study.

Table 21

Multicollinearity test of Variables

Variable	Tolerance	VIF
Mobile Banking	0.999	1.001
Internet Banking	0.995	1.005
ATM	0.995	1.005
E-Wallet	0.992	1.008
Agent Banking	0.993	1.007

Note. Analysis of Multicollinearity test. Data based on analysis of collected data using JASP (JASP Team, 2025)

As shown in Table 21, tolerance values and the values of VIFs are close to 1, so there is no multicollinearity among any of the independent variables. The fact that the predictors are independent implies that there will be no correlation between them and the regression estimates will be consistent and confident.

Coefficients

The regression Coefficients indicate the level of the change of the dependent variable per one unit change in an independent variable. They select in it the power and orientation of relationship of predictors to the outcome variable in the

regression model.

Table 22

Regression Analysis of Variables

Model	Unstandardized Coefficients	Standard Error	Standardized Coefficients	t-statistics	Sig. or p-value
(Constant)	-0.271	0.255		-1.062	0.289
Mobile Banking	0.338	0.031	0.407	10.831	<.001
Internet Banking	0.305	0.030	0.389	10.326	<.001
ATMs	0.163	0.031	0.195	5.182	<.001
E-Wallets	0.273	0.031	0.329	8.724	<.001
Agent Banking	0.072	0.031	0.088	2.326	.021

Note. Dependent Variable: Financial Inclusion. Data based on analysis of collected data using JASP (JASP Team, 2025)

Table 22 represents the results of a regression analysis examining the impact of various digital financial services on financial inclusion. This model includes five predictors: Mobile Banking, Internet Banking, ATMs-Wallets and Agent Banking.

Among the independent variables, Mobile Banking shows a positive unstandardized coefficient of 0.338 and standardized Beta 0.407 and t= 10.831, which indicates that it has a strong and statistically significant and positive influence on financial inclusion (< 0.001). Similarly, Internet Banking is as well very much influential with the coefficient of 0.305, Beta = 0.389, t = 10.326, $p < 0.001$, so there is a significant and positive relationship. ATMs present a coefficient of 0.163, a Beta of 0.195 and a t-value of 5.182, with a significance level of 0.001, which demonstrate a moderately positive and significant contribution to financial inclusion. The coefficient of E-Wallets is 0.273,

Beta = 0.329, t = 8.724, and $p < 0.001$ hence strong and significant contribution in financial inclusion. The coefficient of Agent Banking is smaller at 0.072, Beta = 0.088, t = 2.326 and p = 0.021. It may not be as strong as with the rest of the variables, but it is still statistically significant, meaning that agent banking indeed has an impact on increasing financial inclusion, although its role is limited. The impact of all the five digital banking services on financial inclusion in Nepal is quite considerable and the most powerful of them include Mobile Banking, Internet Banking and E-Wallets.

4.6 Hypothesis Testing

In this instance, hypotheses thus constructed are now tested in accordance with the outcome of the regression analysis, as shown below:

H1: There is significant relationship between Mobile Banking and financial inclusion in Nepal.

H2: There is a significant relationship between Internet Banking and financial inclusion in Nepal

H3: There is a significant relationship between ATM's and financial inclusion in Nepal

H4: There is a significant relationship between E-Wallet's and financial inclusion in Nepal.

H5: There is a significant relationship between Agent banking and financial inclusion in Nepal.

According to the above tests, the relationship between dependent and independent variables produced both positive and significant results with a p-value ranging between high and low significance value on an individual basis. Each hypothesis are fully tested and analyzed separately, and the analysis is carried out using free and open-source statistics analysis software, Jeffrey's Amazing Statistics Program (JASP). Therefore, each variable has been tested individually based on its specific test values. For better clarity, the predefined hypotheses, along with their calculated results and the corresponding acceptance or rejection status, are presented in the following table and explained in the subsequent section.

Table 23

Summary of the Hypothesis Testing

Hypothesis	Statement	p-value	Result
H1	There is significant relationship between Mobile Banking and financial inclusion in Nepal.	$p < 0.001$	Accepted
H2	There is a significant relationship between Internet Banking and financial inclusion in Nepal.	$p < 0.001$	Accepted
H3	There is a significant relationship between Automated Teller Machine (ATMs) and financial inclusion in Nepal.	$p < 0.001$	Accepted
H4	There is a significant relationship between E-Wallets and financial inclusion in Nepal.	$p < 0.001$	Accepted
H5	There is a significant relationship between Agent banking and financial inclusion in Nepal.	$P = 0.021$	Accepted

Note. Data based on analysis of collected data using JASP (JASP Team, 2025)

Table 23 shows the result of the hypothesis testing outcomes/results examining the relationship between digital banking services and financial inclusion in Nepal. The analysis presents that mobile banking (H1), Internet banking (H2) and E-Wallets(H4) had a strong and statistically significant positive relationship with financial inclusion with p -values of <0.001, <0.001 and less than 0.001(which are less than 0.005) respectively. Which indicates that these services are contributors to enhancing financial inclusion in overall areas of a nation. Similarly, ATMs service had a moderately positive and significant contribution to financial inclusion with p value of <0. 001.The p value of agent banking (H5) was 0.021, which is weaker but still statistically significant. So, all the five hypotheses are accepted.

4.7 Discussion

The primary objective of this study is to examine the association between digital banking and financial inclusion in Nepal. Areas of most significance in the research include mobile and banking, Automated Teller Machines (ATMs), e-wallets and agent banking.

The results of the study present very strong statistical evidence about the effect of digital banking on financial inclusion within the context of Nepal. The descriptive statistics (Table 17) reveal that the highest mean was related to financial inclusion (M = 3. 937), this is clear evidence to state that a substantial number of the population feels they have achieved access to the banking services. Among the digital banking service ATMs had the highest mean (M = 3.882) than that of mobile banking and internet banking with of 3.767 and 3.710 respectively which belonged to the high evaluation level. E-wallets (M = 3.401) and agent banking (M = 3.365) scored an average that was defined as moderately high, which means the tools are handy but still there is some barrier in perception or availability. These findings point to the popularity of a more institutionalized, tested and trusted service such as ATM and mobile/internet banking (as opposed to e-wallets and agent banking) among the user base. The obtained high scores of ATMs are in line with the results by Gashi and Alili (2022) in Kosovo as well as Kenye and Kumar (2022) in India which indicate that the widespread usage of ATMs helps to enhance financial inclusion.

In the correlation analysis (see Table 18), all five services involved in digital banking services had statistically significant and substantial correlation with the financial inclusion. The highest correlations were recorded in the case of mobile banking (r = 0.394) and internet banking (r = 0.379), meaning that both platforms contribute significantly to the promotion of financial accessibility, which also matches the findings of Demirguc-Kunt et al. (2018) and Ozili (2018), who explained the potential of digital banking to mitigate traditional financial problems. E-wallets (r = 0.311) showed a decently strong correlation rate due to a stronger application among the youth and those that practice in the informal sector, with technological illiteracy and the mistrust that exists in the rural areas limiting its use. The correlation of ATMs (r = 0.160) and agent banking (r = 0.118) was reasonably lower, thus having a slightly smaller effect on financial inclusion. Although Mahato and Goet (2021) highlighted the relevance of

agent banking in terms of reaching rural populations, the relatively low correlation indicates credibility and workability issues in the case of Nepal.

Multicollinearity test showed that all the tolerance and VIF values were approximated to 1 meaning that there was no multicollinearity among the various independent variables. This result shows that the predictors are statistically independent as the assumption is usually made that the small or no correlation among the predicates guarantees stable and unbiased estimates of regression relationships. As a result, the regression model applied in this research study may be reckoned as robust one, its coefficients are not affected by inflated variances owing to intercorrelation of variables.

The constant estimate of the model in the regression (Table 22) shows the value of the constant was not significant at p = 0.289, which implies that the level of financial inclusion would not significantly deviate from zero when there are no digital banking services. It indicated the contribution by digital banking service to financial inclusion as being at various degrees. Mobile banking (beta = 0.407) was followed by internet banking (beta = 0.389) which was further followed by e-wallets (beta = 0.329). Such results favor the Technology Acceptance Model (TAM) by Fred Davis (1989) that states that people use technology more readily when the technology is more helpful and painless to use. Mobile and internet banking applications are easy, fast and secure and thus more acceptable to the user. In equal measure, the Diffusion of Innovation Theory (Rogers, 1962) sheds light on why mobile and internet banking appeals to a broader swath of people (early majority) whilst e-wallets continue to be applied by early adopters in the rural, as well as semi-urban areas. On the other hand, ATM (beta = 0.195) and agent banking (beta= 0.088) had less influence on the financial inclusion. This is in line with Institutional Theory, which states that the old systems such as ATMs also persist due to rules and tradition, at a time when there are better alternatives. Even though the agent banking model was intended to benefit the rural and poor communities, so far it has not achieved much in Nepal because of lack of trust, support and infrastructure. As opposed to Tunisia (Gharbi and Kammoun, 2022) and Ethiopia (Menza et al., 2024), where agent and POS banking were achieved with strong success whereas Nepal has weak penetration and lesser impact with these service. The study validates the Financial Intermediation Theory by Gurley and Shaw (1960) which states that digital technology which includes mobile banking, internet banking, and e-wallets are capable of lowering transaction costs and bringing down any barrier between those

of unbanked citizens and formal finance. The success of these services is not only in their availability, but also the way they are simple to use and are perceived to be secure and genuinely incorporated into institutions, which are important components of the reality of financial inclusion.

Conclusively, all the five digital banking services have beneficial contributions to financial inclusion, but mobile and internet banking are the most efficient in Nepal. There is an e-wallet taking shape especially among youthful and urban consumers. Although ATMs continue to be in use, their marginal contribution is low, and agents banking, though with the right intentions, are already dawdling on the way to public perception and effect. These results indicate a necessity to pay attention to the mobile-first, digital-literate financial systems as well as emphasize the failure of physical and agent-based channels that must be reduced by policy and institutional changes.

CHAPTER V
SUMMARY AND CONCLUSION

In this section, the discussion of results, conclusions identified in the research, and practice and future research implications are brought forward. The conclusions are used to sum up the important findings and the implications give ideas on how the findings can be used in management setting and future research work.

5.1 Summary

This paper was meant to examine the impact of digital banking services on financial inclusion in Nepal. The investigation was inspired by the necessity to know how digital banking technologies provided better access to the financial services and how its scales began to rise among the population. ATM services, internet banking, mobile banking, e-wallets and agent banking were determined as independent variables and financial inclusion as a dependent variable.

The conceptual framework is drawn based on these aspects and hypotheses developed based on the significance of these aspects based on financial inclusion. The survey with the help of the social networking sites was done on 395 respondents who were from different occupation groups, income groups, resident and educational background. The questionnaire contained demographic questions and questions on the factors identified to affect financial inclusion. The statistical analysis was done with the help of JASP software, and such methods as descriptive statistics, Pearson correlation, and linear regression were applied.

The results indicate that the mobile banking, internet banking and e-wallets have the greatest influence on financial inclusion. These services were highly valued by the respondents in respect to usability, convenience and accessibility. Regression analysis has proved that mobile banking was found to most precisely determine financial inclusion, and it was followed by internet banking and e-wallets. Such findings prove the potential of the Technology Acceptance Model (TAM), where convenience and knowledge of use are vital technological adoptions. Likewise, the Diffusion of Innovation Theory explains why mobile and internet-based banking are adopted widely by the early majority, and e-wallets are yet to be adopted in those places in the early adoption stage: rural and semi-urban regions.

Further correlation analysis confirmed that financial inclusion has strong positive relationship with digital banking particularly mobile banking, internet banking and e-Wallets. Whereas ATMs and agent banking were revealed to have a relatively less significant effect. This implies that there is a paradigm between user preferences on physical infrastructure versus online platforms particularly with the young and tech-savvy groups. Though ATMs continue to participate in the processes of over-the-counter cash POS and balance, they lose their long-term strategy. Despite being aimed at serving the rural and marginalized population, agent banking has not reached its potential yet in Nepal because of the issues of trust, poor infrastructure, and lack of awareness. The research proves the Financial Intermediation Theory as it demonstrates the role of digital bank that can facilitate the reduction of costs and enhance the efficiency of financial services and thus become more accessible to other excluded groups.

In summary, the study has made it clear that digital banking had significant influence in enhancing financial inclusion in Nepal. Its ability to perform or support all services as well as all its user groups is not uniform. Mobile and internet banking has been particularly successful as far as the reach in urban and semi urban people is concerned. E-wallets have registered a moderate significant role especially among the young and semi urban users, but their use is constrained by the digital literacy and doubt. In the same breadth, ATMs remain a critical component in an open and comfortable banking avenue, particularly in cash dealings, where they are gradually leveling off in their increase. Conversely, agent banking has had minimal effects, especially in the rural areas. To support all Nepalese people and achieve equal inclusion, it is necessary to work on digital literacy levels, build trust in digital services, and raise the scope of such platforms as agent banking. This should involve collaboration between the government, banks and technology companies in developing a digital banking system that will be accessible, reliable and inclusive to all.

5.2 Conclusion

This research reaches the conclusion that in Nepal digital banking is an important tactic to achieve financial inclusion. Within the many online banking facilities, it is the use of mobile banking or the internet banking and e-wallets that have performed the best to drive access in financial services. They are convenient, fast, and easy to access and hence they are very helpful to people living in remote regions or with little time and few resources to spend traveling to banks. These services are increasingly being utilized, and it is a positive sign of increased inclusivity in the country in terms of the financial practices underway.

However, the study shows that there is also inequality in the usage and success of digital banking among various services and population. Rural communities, older adults, and people with low digital literacy have become an issue even though digital platforms have increased the accessibility of banking to everyone. The gap was meant to be filled by services such as agent banking, which have been underutilized due to lack of trust, poor levels of awareness and poor infrastructure. In a similar manner, ATMs have become popular, but they could not benefit inclusion in remote places greatly because of the maintenance issues and the lack of accessibility.

Overall, digital banking has enhanced the situation of financial inclusion in Nepal. Nonetheless, its positive aspects have not been equally distributed among all groups. There are still significant numbers of people in rural regions and older adults and those with inferior digital abilities who have some difficulties accessing and using digital financial solutions. To enable the digital banking industry to become truly inclusive, more effort is needed in infrastructure and more investment overall, as well as increased focus on education of its users, and specific policies catering to the needs of these underserved groups. To mitigate the gap in financial access is to improve digital literacy and the establishment of trust in the digital medium, as well as the expansion of agent banking services that can be relied upon. This paper indicates that even though Nepal has achieved significant gains in relation to the utilization of digital tools to expand financial access, targeted efforts are important to ensure that no one is left behind.

5.3 Implication

Drawing from the study's summary and conclusion, the researcher outlines the following implications for the appropriate authorities.

- **For Government of Nepal and Nepal Rastra Bank:**
  They should lead the charge on increasing the digital infrastructure and telecommunications infrastructures in the rural and remote locations to provide equal access to digital banking services. They must create such inclusive financial policies where underserved populations remain a priority, control agent banking in a way that will not reduce the quality of its services and protection of consumers and lead national digital literacy and cybersecurity campaigns that will allow people to use digital finance platforms with confidence
- **For Commercial Banks and Development Banks:**
  This is anticipated to streamline their electronic equipment's offer local-language user interfaces, and to ease services to the literate, illiterate and rural audiences. They need to reinforce agent banking networks through adequate training, monitoring and branding so that it is reliable, and should also look to collaborate with the local governments and cooperatives to access the unbanked communities. Banks also need to increase the level of customer support and grievance redressal systems to earn user confidence.
- **For Fintech Companies and Digital Wallet providers (e.g. eSewa, Khalti, IME pay):**
  There is a necessity to create safe, convenient and inclusive digital banking operations that can be used by many people, irrespective of internet connections or the high ability of technical knowledge. The service providers should be able to make it easy to interoperate with the banking systems, they should become clear on their price structure, and they need to work in partnership with the regulatory authorities too to create an ecosystem of innovation that encourages broader financial inclusion.
- **For Local Government and Rural Municipalities:**
  They should collaborate in developing and delivering digital literacy programs in the community that focus more on women, the older adults, and marginalized

groups of the society. They play a vital role in capacity development to inform people how to use digital monetary tools without any risk.

- **For Telecommunication Companies:**

  They should ensure affordable and reliable mobile and internet connectivity in the rural areas to address the continuous connection to digital banking. It is important to note their infrastructure development and collaboration through banks and fintech companies to make last-mile connectivity possible.

- **For Future Researchers:**

  They Could understand the impact of use of digital banking on various groups such as rural users, women, elderly people, and so on, and how digital banking could be made accessible and inclusive to all geographical regions of Nepal.

REFERENCES

Adhikari, M., Ghimire, D. M., & Lama, A. D. (2024). FinTech and financial inclusion: Exploring the mediating role of digital financial literacy in enhancing access to financial services. *Journal of Emerging Management Studies, 1*(2), 117–136. https://doi.org/10.3126/jems.v1i2.71512

Adhikari, R., & Shrestha, P. (2022). Exploring the impact of convenience on mobile banking adoption in urban Kathmandu. *Journal of Digital Banking and Finance, 11*(2), 75–89.

Adhikari, S. N. (2024). Exploring the effects of e-banking products and services on conventional banking transactions in Nepalese commercial banks. *The Nepalese Management Review, 20*(1), 103–123. https://doi.org/10.3126/tnmr.v20i1.64743

Alliance for Financial Inclusion. (2025, March 21). Digital payments are driving financial inclusion in Nepal. *AFI Global News.* https://www.afi-global.org/news/digital-payments-are-driving-financial-inclusion-in-nepal/

Aljarrah, E., Elrehail, H., & Aababneh, B. (2016). E-voting in Jordan: Assessing readiness and developing a system. *Computers in Human Behavior, 63,* 860–867. https://doi.org/10.1016/j.chb.2016.05.076

Alsamydai, M. J., Yassin, S. G., Alnaimi, H. M., Dajani, D. M., & Al Qirem, I. A. (2014). Factors influencing customer usage of mobile banking. *International Journal of Business Management and Research, 4*(2), 63–78.

Amnas, M. B., Selvam, M., & Parayitam, S. (2024). FinTech and financial inclusion: Exploring the mediating role of digital financial literacy and the moderating influence of perceived regulatory support. *Journal of Risk and Financial Management, 17*(3), 108. https://doi.org/10.3390/jrfm17030108

Aron, J. (2018). Mobile money and the economy: A review of the evidence. *The World Bank Research Observer, 33*(2), 135–188. https://doi.org/10.1093/wbro/lky001

Atmaxina. (2024, July 13). Building a network of ATMs: Strategies for global growth. *Invest in ATM Machines.* https://investinatmmachines.com/blog/building-a-network-of-atm-global-growth/

Basnayake, D., Naranpanawa, A., Selvanathan, S., & Bandara, J. S. (2024). Financial inclusion through digitalization and economic growth in Asia-Pacific countries. *International Review of Financial Analysis, 89,* 103596. https://doi.org/10.1016/j.irfa.2024.103596

Bhusal, T. P. (2025, January 9). The importance of FinTech in the banking industry of Nepal: Opportunities and challenges. *NeBEU.* https://nebeu.org.np/importance-fintech-banking-industry-nepal-opportunities-challenges/

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Pearson.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

DECTA. (2024). What is digital banking and how it works. https://www.decta.com/company/media/what-is-digital-banking-and-how-does-it-work

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution.* World Bank. https://doi.org/10.1596/978-1-4648-1259-0

Donovan, K. (2012). Mobile money for financial inclusion. In *Information and communications for development 2012: Maximizing mobile* (pp. 61–73). World Bank. https://doi.org/10.1596/978-0-8213-8991-1

Durai, T., & Stella, G. (2019). Digital finance and its impact on financial inclusion. *Unpublished research article / ResearchGate preprint.* https://www.researchgate.net/publication/330933079_DIGITAL_FINANCE_AND_ITS_IMPACT_ON_FINANCIAL_INCLUSION

Finextra. (2024, October 24). What is agency banking? A comprehensive overview for banks: By Nikunj Gundaniya. *Finextra Research.* https://www.finextra.com/blogposting/27007/what-is-agency-banking-a-comprehensive-overview-for-banks

Gakuru, E., Adyanga, A. F., & Ocan, J. (2025). The implications of online banking on financial inclusion in banking institutions: A literature review. *International Journal of Finance and Accounting, 4*(1), 1–8. https://doi.org/10.37284/ijfa.4.1.2594

Gashi, F., & Alili, H. A.-. (2022). *The impact of electronic banking products on economic growth: The case of Kosovo.* Transition Academia Press. https://doi.org/10.14665/1614-4007-29-2-006

Gharbi, I., & Kammoun, A. (2022). Relationship between digital banking and financial inclusion: Evidence from Tunisia. *International Journal of Business Studies, 6*(3), 168–177. https://doi.org/10.32924/ijbs.v6i3.228

Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate data analysis: A global perspective.* Pearson.

International Finance Corporation. (2023, April 25). *Nepal financial inclusion report 2023.* https://www.ifc.org/content/dam/ifc/doc/2023-delta/2023-nepal-financial-inclusion-report.pdf

JASP Team. (2025). *JASP* (Version 0.19.3.0) [Computer software]. https://jasp-stats.org/

Kandel, M., Timilsina, J., Basnet, B. J., & Joshi, R. D. (2024). Adaptation of digital banking in Nepal: An analysis of customer perceptions and behaviors. *NPRC Journal of Multidisciplinary Research, 1*(9), 24–44. https://doi.org/10.3126/nprcjmr.v1i9.74143

Kauppi, K. (2022). Institutional theory. In *Handbook of theories for purchasing, supply chain and management research* (pp. 320–334). Edward Elgar.

Kavitha, M. (2023). *A study on digital banking and its impacts.* Vels University. https://doi.org/10.6084/m9.figshare.24781770

Kelly, A. E., & Palaniappan, S. (2023). Using a technology acceptance model to determine factors influencing continued usage of mobile money service transactions in Ghana. *Journal of Innovation and Entrepreneurship, 12*(1), Article 3. https://doi.org/10.1186/s13731-023-00301-3

Kenye, R., & Kumar, J. (2022). Role of digital banking in economic development. *ResearchGate.* https://www.researchgate.net/publication/360671786_ROLE_OF_DIGITAL_BANKING_IN_ECONOMIC_DEVELOPMENT

Khera, P., Ng, S., Ogawa, S., & Sahay, R. (2021). *Is digital financial inclusion unlocking growth?* (IMF Working Paper No. 2021/167). International Monetary Fund. https://doi.org/10.5089/9781513584669.001

Kunwar, K., & Chhetri, S. D. (2025). Role of fintech in driving financial inclusion: Evidence from Kaski. *The Batuk, 11*(2), 14–27. https://doi.org/10.3126/batuk.v11i2.82200

Loaba, S. (2022). The impact of mobile banking services on saving behavior in West Africa. *Global Finance Journal, 53,* Article 100620. https://doi.org/10.1016/j.gfj.2021.100620

Mahato, S., & Goet, J. (2021). Impact of agency banking on financial inclusion in Nepalese commercial bank. *Psychology and Education, 58*(2). https://doi.org/10.17762/pae.v58i2.4091

Mastran, S. (2021). Opportunities and challenges of online banking in Nepal. *The Batuk, 7*(2), 37–51. https://doi.org/10.3126/batuk.v7i2.39498

Menza, M., Jerene, W., & Oumer, M. (2024). The effect of financial technology on financial inclusion in Ethiopia during the digital economy era. *Cogent Social Sciences, 10*(1), 2309000. https://doi.org/10.1080/23311886.2024.2309000

Mohammed, M., & Japee, G. P. (2025). The role of digital banking in advancing financial inclusion: A systematic literature review. *Asian Journal of Economics, Business and Accounting, 25*(5), 335–342. https://doi.org/10.9734/ajeba/2025/v25i51805

Mookerjee, J., Bhuriya, K., Josphin, R., & Radhakrishnan, G. V. (2025). Digital banking and financial inclusion in rural economies. *South Eastern European Journal of Public Health, 26*(S1), 954–963. https://doi.org/10.52710/seejph

Murrar, A., Asfour, B., & Paz, V. (2024). Banking sector and economic growth in the digital transformation era: Insights from maximum likelihood and Bayesian structural equation modeling. *Asian Journal of Economics and Banking, 8*(3), 335–353. https://doi.org/10.1108/ajeb-12-2023-0122

Nayan, R., RandD, S., Varghese, S., & Gaikar, V. (2025). Investigating the role of ATM networks in increasing financial inclusion. *ResearchGate.* https://www.researchgate.net/publication/388678547_Investigating_the_Role_of_ATM_Networks_in_Increasing_Financial_Inclusion

Nelito. (2023, February). Digital banking in Nepal. https://www.nelito.com/blog/digital-banking-in-nepal.html

Nepal Rastra Bank. (2020, December). *NepalQR standardization framework and guidelines.* Payment Systems Department.

https://www.nrb.org.np/contents/uploads/2021/01/QR-Code-Guidelines-and-Framework-and-Specifications.pdf

Nepal Rastra Bank. (2021). *AFI member series: Nepal's financial inclusion journey* (Maha Prasad Adhikari, foreword). Alliance for Financial Inclusion. https://www.nrb.org.np/contents/uploads/2022/05/AFI-Member-Series-Document-of-Nepal.pdf

Nepal Rastra Bank. (2024, June 4). Nepal Rastra Bank (NRB) – The official site of the central bank of Nepal. *The Official Site of the Central Bank of Nepal.* https://www.nrb.org.np/

Nepal Rastra Bank. (2025, January 9). *Payment systems oversight report, FY 2023/24.* Nepal Rastra Bank. https://www.nrb.org.np/contents/uploads/2025/01/Payment-Oversight-Report-2023-24.pdf

Nepal Rastra Bank. (2025, March). *Bank supervision report: Fiscal year 2023/24.* Bank Supervision Department. https://www.nrb.org.np/contents/uploads/2025/03/Annual-Bank-Supervision-Report-2024-4.pdf

Niraula, A., & Adhikari, S. (2019). Examining digital finance service as an instrument for financial inclusion in Nepal. *Economic Review of Nepal, 2*(1), 212–227. https://doi.org/10.3126/ern.v2i1.53135

Nnaomah, N. U. I., Aderemi, N. S., Olutimehin, N. D. O., Orieno, N. O. H., & Ogundipe, N. D. O. (2024). Digital banking and financial inclusion: A review of practices in the USA and Nigeria. *Finance and Accounting Research Journal, 6*(3), 463–490. https://doi.org/10.51594/farj.v6i3.971

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.

Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review, 18*(4), 329–340. https://doi.org/10.1016/j.bir.2017.12.003

Paudel, D. (2025, April 6). Digital transactions surge at 210% annually. *myRepublica.* https://www.myrepublica.nagariknetwork.com/news/digital-transactions-surge-at-210-annually-58-68.html

Poudel, O., Khatri, B. B., Rijal, U., & Acharya, P. (2024). Adoption of mobile wallets in Nepal: Examining the influence of trust and the mediating role of security

and privacy. *International Research Journal of Management and Science, 9*(1). https://doi.org/10.3126/irjms.v9i1.72712

Poudyal, S. (2025). Digital banking adoption behaviour of Nepalese customers. *Nepalese Journal of Management Research, 5,* 78–88. https://www.nepjol.info/index.php/njmgtres/article/view/75875

Pradhan, R. S., & Dahal, P. (2021). Effect of e-banking on financial inclusion in Nepal. *ResearchGate.* https://www.researchgate.net/publication/371304736_Effect_of_E-Banking_on_Financial_Inclusion_in_Nepal

Prasain, K. (2021, August 20). Two-thirds of Nepalis have a bank account. *The Kathmandu Post.* https://kathmandupost.com/money/2021/08/20/two-thirds-of-nepalis-have-at-least-one-bank-account

Pushkar, B., & Gupta, A. (2019). Impact of e-banking: Its growth and future in India. *SSRN Electronic Journal.* https://doi.org/10.2139/ssrn.3308577

Rawal, N., & Khadka, D. (2022, November 11). E-wallets and operation of payment service providers. *Business 360°.* http://b360nepal.com/detail/7252/e-wallets-and-operation-of-payment-service-providers

Regmi, D. (2015). A study on scenario of mobile banking in Nepal. *Asian Journal of Management, 6*(4), 256–262. https://doi.org/10.5958/2321-5763.2015.00037.2

Rogers, E. M. (1962). *Diffusion of innovations.* Free Press.

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). Free Press.

Scott, W. R. (2008). *Institutions and organizations: Ideas and interests* (3rd ed.). Sage Publications.

Schildt, H. (2022). The institutional logic of digitalization. In R. Greenwood, C. Oliver, T. B. Lawrence, & R. E. Meyer (Eds.), *Research in the sociology of organizations* (Vol. 83, pp. 235–251). Emerald Publishing. https://doi.org/10.1108/S0733-558X20220000083010

Sharma, D. K. (2024). The use of digital payment methods and its implications on financial inclusion: A survey study. *European Economic Letters, 14*(1), 523–533. https://doi.org/10.52783/eel.v14i1.1056

Siddik, M. N. A., Sun, G., Cui, Y., & Kabiraj, S. (2014). Financial inclusion through mobile banking: A case of Bangladesh. *Journal of Applied Finance and Banking, 4*(6), 109–136. https://www.scienpress.com/Upload/JAFB/Vol%204_6_7.pdf

The Kathmandu Post. (2025, April 11). QR code drives Nepal's digital payment boom. *The Kathmandu Post.* https://kathmandupost.com/money/2025/04/11/qr-code-drives-nepal-s-digital-payment-boom

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science, 46*(2), 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926

Verma, S., & Shome, S. (2025). An empirical investigation on the relationship between digital finance adoption and financial inclusion of micro businesses in India. *Journal of Small Business Strategy, 35*(1), Article 124474. https://doi.org/10.53703/001c.124474

ANNEX I

Mobile Banking

Frequentist Scale Reliability Statistics

Coefficient	Estimate	Std. Error	95% CI Lower	95% CI Upper
Coefficient ω	0.808	0.016	0.774	0.837

Source (JASP Team, 2025)

Internet Banking

Frequentist Scale Reliability Statistics ▼

Coefficient	Estimate	Std. Error	95% CI Lower	95% CI Upper
Coefficient ω	0.829	0.015	0.799	0.856

Source (JASP Team, 2025)

ATM

Frequentist Scale Reliability Statistics ▼

Coefficient	Estimate	Std. Error	95% CI Lower	95% CI Upper
Coefficient ω	0.823	0.015	0.791	0.851

Source (JASP Team, 2025)

E-Wallet

Frequentist Scale Reliability Statistics ▼

			95% CI	
Coefficient	Estimate	Std. Error	Lower	Upper
Coefficient ω	0.756	0.021	0.713	0.792

Source (JASP Team, 2025)

Agent Banking

Frequentist Scale Reliability Statistics ▼

			95% CI	
Coefficient	Estimate	Std. Error	Lower	Upper
Coefficient ω	0.754	0.019	0.713	0.789

Source (JASP Team, 2025)

Financial Inclusion

Frequentist Scale Reliability Statistics ▼

			95% CI	
Coefficient	Estimate	Std. Error	Lower	Upper
Coefficient ω	0.859	0.020	0.816	0.894

Source (JASP Team, 2025)

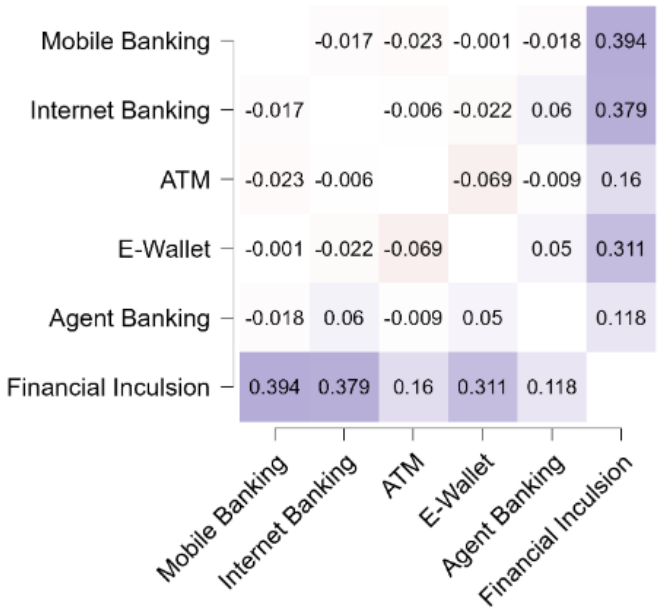
Correlation Analysis

Correlation ▾

Pearson's Correlations

Variable		Mobile Banking	Internet Banking	ATM	E-Wallet	Agent Banking	Financial Inculsion
1. Mobile Banking	Pearson's r	—					
	p-value	—					
2. Internet Banking	Pearson's r	−0.017	—				
	p-value	.736	—				
3. ATM	Pearson's r	−0.023	−0.006	—			
	p-value	.644	.910	—			
4. E-Wallet	Pearson's r	-5.561×10^{-4}	−0.022	−0.069	—		
	p-value	.991	.662	.169	—		
5. Agent Banking	Pearson's r	−0.018	0.060	−0.009	0.050	—	
	p-value	.728	.232	.854	.323	—	
6. Financial Inculsion	Pearson's r	0.394	0.379	0.160	0.311	0.118	—
	p-value	< .001	< .001	.001	< .001	.019	—

Pearson's r heatmap



Source (JASP Team, 2025)

Linear Regression

Linear Regression

Model Summary - Financial Inculsion

Model	R	R^2	Adjusted R^2	RMSE
M_0	0.000	0.000	0.000	0.597
M_1	0.672	0.451	0.444	0.445

Note. M_1 includes Mobile Banking, Internet Banking, ATM, E-Wallet, Agent Banking

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
M_1	Regression	63.36	5	12.672	64.01	< .001
	Residual	77.01	389	0.198		
	Total	140.36	394			

Note. M_1 includes Mobile Banking, Internet Banking, ATM, E-Wallet, Agent Banking
Note. The intercept model is omitted, as no meaningful information can be shown.

Coefficients

							Collinearity Statistics	
Model		Unstandardized	Standard Error	Standardized	t	p	Tolerance	VIF
M_0	(Intercept)	3.937	0.030		131.102	< .001		
M_1	(Intercept)	−0.271	0.255		−1.062	.289		
	Mobile Banking	0.338	0.031	0.407	10.831	< .001	0.999	1.001
	Internet Banking	0.305	0.030	0.389	10.326	< .001	0.995	1.005
	ATM	0.163	0.031	0.195	5.182	< .001	0.995	1.005
	E-Wallet	0.273	0.031	0.329	8.724	< .001	0.992	1.008
	Agent Banking	0.072	0.031	0.088	2.326	.021	0.993	1.007

Source (JASP Team, 2025)

ANNEX II

Questionnaire

Dear Participant,

Namaste! I am a master's in business studies (MBS) student at Shanker Dev Campus, conducting research for my thesis titled "The Role of Digital Banking on Financial Inclusion in Nepal. "This questionnaire is designed to gather information about your experience and perceptions regarding digital banking services such as mobile banking, internet banking, ATMs, and digital wallets. Your responses will be used solely for academic purposes and will be kept strictly confidential. Your participation is entirely voluntary, and your honest answers will be highly valuable to the success of this research.

Thank you for your time and valuable support!

Demographic Information

1.Name of the respondent (Optional): .....

2.Age: .....

3.Gender : ☐ Male ☐ Female

4.Education Level : ☐ Below SLC ☐ SLC/SEE

☐ +2/Intermediate ☐ Bachelor's degree ☐ Master's degree or Above

5. Occupation : ☐ Student ☐ Employee

☐ Self Employed ☐ Housewife ☐ Others

6.Income : ☐ Below Rs.20000 ☐ Rs.20000-30000

☐ 30001-40000 ☐ 40001-50000 ☐ Above 50000

7. Place of Residence : ☐ Rural Area ☐ Semi-Urban Area

☐ Urban/City Area

SECTION B: Factors that Motivates you to use Digital Banking

Below are various statements on Factors affecting the use of digital banking. On a scale of 1-6 where, 1=very strongly disagree, 2=Disagree, 3=Slightly disagree, 4=slightly agree, 5=Agree and 6=very strongly agree, please indicate your level of agreement with each statement.

S. N	STATEMENTS	1	2	3	4	5	6
Mobile banking							
M1	Using mobile banking is an easy method of doing a banking transaction.						
M2	In my opinion, it is worth considering using mobile banking.						
M3	I would transfer or collect money to or with any person with a mobile bank account.						
M4	It takes a lot of time and effort to work with M-banking.						
M5	Using mobile banking apps feels simple to me.						

Internet Banking							
I1	Internet banking is time saving and hence this encourages me to use this concept frequently.						
I2	Access to financial services is offered by internet banking, which is more convenient.						

I3	Internet banking is always readily available at any given time of day.						
I4	I save time by paying my bills, fees, and making payments online through internet banking.						
I5	I am confident when using the services on internet banking.						

Automated Teller Machine (ATMs)							
A1	I have a large number of ATM points to which I have access very near to me.						
A2	I can use the ATM of other banks with my bank ATM card without difficulties.						
A3	I have the option to check my account balance at any ATM I use.						
A4	It is simpler to use an ATM than to visit the bank						
A5	Using ATMs makes me feel that my transactions are secure.						

E-Wallets							
E1	E-wallets (eSewa,Khalti, Fone pay) have enhanced my access to financial services.						
E2	I believe that digital payment is more eco-friendly compared to the cash transaction						
E3	E-wallets have enabled me to control my personal finances better.						
E4	Individuals with no bank account are largely excluded in the enjoyment of digital payments						

E5	There should be more inclusion of everyone in digital payment policies and rules.						

Agent Banking							
A1	I would use agent banking because I would be closer to the agent than the bank branch.						
A2	The agent user interface is available and easy to use.						
A3	Even when the charges of other channels are lower, banking transactions are preferred to be carried out through an agent.						
A4	Privacy issues do not allow me to believe fully in the use of agency banking services.						
A5	Agency banking has increased my independence from bank branches.						

Financial Inclusion							
F1	The use of Digital services has widened my reach to financial products and services.						
F2	Digital banking services have enhanced my savings and investments in my funds.						
F3	The use of Digital services has simplified sending and receiving money.						
F4	The digital banking services have enhanced my access to credit and loans.						
F5	My financial life is better due to digital banking.						

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