

THE ROLE OF DIGITAL FINANCIAL INCLUSION IN PROMOTING ECONOMIC GROWTH IN NEPAL

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fulfilment of the requirements for the Master's Degree

by

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Certification of Authorship

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **“The Role of Digital Financial Inclusion in Promoting Economic Growth in Nepal”**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic purposes.

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

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Report of Research Committee

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Abbreviations

BB	: Bank Branches
BRB	: Branchless Banking
CV	: Coefficient of Variance
DA	: Deposit Accounts
DC	: Debit Cards
GDP	: Gross Domestic Product
IBU	: Internet Banking Users
MBU	: Mobile Banking Users
SD	: Standard Deviation

Abstract

This study explores the impact of digital financial inclusion on economic growth in Nepal, focusing on the role of digital financial services such as mobile banking, ATMs, branchless banking, and internet banking in fostering financial inclusion and GDP growth. Utilizing secondary data from fiscal years 2013/14 to 2022/23, the study employs descriptive and causal research designs, incorporating trend analysis and correlation analysis. Findings reveal strong positive correlations between GDP and key variables like the number of bank branches, ATMs, mobile banking users, deposit accounts, debit card holders, and branchless banking services. The study concludes that digital financial services have a transformative effect on financial inclusion, providing previously underserved populations with access to essential financial services. The study provides policy recommendations urging policymakers and financial institutions to invest in both digital and physical banking infrastructure, especially in remote areas, while emphasizing the need for enhanced financial literacy programs to improve service adoption. The research contributes valuable insights for future studies on the long-term effects of digital financial inclusion on economic performance.

Keywords: *Digital financial inclusion, economic growth, mobile banking, branchless banking, GDP growth*

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Financial inclusion is the universal access and usage of a wide range of reasonably priced, high-quality financial services, delivered by a diversity of sound and sustainable institutions (CGAP, 2010). This concept is not an end in itself; rather, it is a means towards an end - the end being inclusive economic development, which involves the integration of all demographic groups in the economic process (Chibba, 2009).

Economic development, in its most basic form, is the process of enhancing the wellbeing of a community or nation. This involves the creation of wealth through the mobilization of various resources, such as human, financial, capital, physical, and natural resources, to generate marketable goods and services (Todaro & Smith, 2015).

Financial inclusion plays a pivotal role in steering a nation away from poverty. It brings those who are unbanked into the formal banking system, enabling them to save, invest, and increase their income, which ultimately leads to an economically developed nation (Demirgüç-Kunt et al., 2017).

Digital financial inclusion, which refers to the accessibility and usage of digital financial services by underserved individuals and businesses, plays a vital role in driving economic growth and development. By leveraging digital technologies, such as mobile phones and the internet, digital financial inclusion enables individuals and businesses to access a wide range of financial services, even in remote or underserved areas. This increased access to financial services has a positive impact on economic growth, as evidenced by research from the World Bank, which found that a 10% increase in financial inclusion can lead to a 0.3% boost in GDP growth in low- and middle-income countries (Demirgüç-Kunt et al., 2018).

In addition to improving access, digital financial inclusion also enhances financial resilience, particularly in vulnerable populations. Digital payment platforms offer faster and more secure transactions, reducing risks associated with cash handling, theft, and loss. Furthermore, digital savings and insurance products provide

individuals and businesses with tools to manage risks, cope with financial shocks, and build resilience (World Bank, 2021).

The efficiency and productivity gains associated with digital financial inclusion further contribute to economic growth. By digitizing financial transactions, costs and time are reduced compared to traditional methods. McKinsey estimates that digital finance could add \$3.7 trillion to the GDP of emerging economies by 2025 through productivity gains and cost savings. For businesses, digital payments and credit enable faster and more reliable transactions, improving liquidity management and cash flow (Manyika et al., 2016).

Digital financial inclusion also stimulates entrepreneurship and job creation. By providing access to credit and financial services, digital platforms empower aspiring entrepreneurs to start and scale businesses. This, in turn, leads to job creation, income generation, and overall economic growth. The Global Findex Database highlights that access to digital financial services is associated with a higher likelihood of self-employment and job creation (World Bank, 2021).

In the context of Nepal, a country classified as one of the least developed, financial inclusion can contribute significantly towards its economic development. Despite the challenges faced, Nepal has shown considerable progress in the realm of financial inclusion. However, the journey towards full financial inclusion in Nepal is not without its challenges. The FinScope Survey (2014) indicates that around 32% of adults still remain financially excluded. The primary barriers to financial inclusion are a lack of awareness about financial services, low incomes, and illiteracy.

To foster economic development, it is imperative that Nepal continues to promote financial inclusion. This would involve focusing policies on enhancing financial literacy, improving access to financial services in rural areas, and promoting the use of digital financial services. Furthermore, financial products must be tailored to meet the needs of the excluded population, namely women, the poor, and the rural population (NRB, 2017).

Financial inclusion plays a critical role in economic development by providing individuals and businesses with access to useful and affordable financial products and services that meet their needs. As Nepal continues to make strides in financial

inclusion, it will be of utmost importance to address the remaining challenges to ensure that all Nepalese citizens can participate in the nation's economic development.

However, it is crucial to acknowledge that financial inclusion is not merely about having a bank account. It's about access to a range of financial services including savings, credit, insurance, and remittance facilities that are safe, affordable and convenient. It's about the ability to make transactions, pay bills, and send or receive remittances digitally and securely.

While Nepal has made significant strides in promoting financial inclusion, much work remains to be done. It requires a comprehensive approach that not only focuses on expanding access to bank accounts but also on improving the range, quality, and usage of financial services. With the right mix of policies and initiatives, Nepal can leverage financial inclusion as a powerful tool for economic development and poverty reduction.

1.2 Problem Statement

Financial inclusion, which involves the provision and usage of affordable, accessible, and relevant financial services, plays a critical role in economic development. However, in Nepal, a significant portion of the population remains unbanked or underbanked, which presents a substantial problem for the nation's economic progress. The lack of financial inclusion inhibits the ability of individuals, particularly those from marginalized communities, to engage in productive economic activities. Without access to essential financial services such as savings, credit, insurance, and remittance facilities, they are unable to invest in income-generating activities, education, health, and other areas that can improve their socioeconomic status. This contributes to persistent poverty and income inequality, which in turn hampers overall economic development.

The issue of financial inclusion is a critical determinant of economic development, particularly in developing countries like Nepal. However, a significant proportion of the population in Nepal remains financially excluded, which poses substantial implications for the nation's economic progress (Sapkota, 2013).

A lack of financial inclusion inhibits the ability of individuals, particularly those from marginalized communities, to engage in productive economic activities (World Bank,

2018). Without access to essential financial services such as savings, credit, insurance, and remittance facilities, they are unable to invest in income-generating activities, education, health, and other areas that can improve their socioeconomic status (Demirguc-Kunt et al., 2018). This contributes to persistent poverty and income inequality, which in turn hampers overall economic development (Beck et al., 2007).

Nonetheless, several challenges remain. The mountainous terrain and lack of infrastructure in many parts of the country make it difficult to establish physical banking facilities. Moreover, a significant proportion of the population is illiterate and not familiar with the concept of formal banking, making them hesitant to use these services. Digital financial services can play a pivotal role in addressing these challenges. With the increasing penetration of mobile phones and internet connectivity, digital banking has the potential to bring financial services to the doorsteps of people living in the most remote corners of the country. However, this requires concerted efforts from the government, central bank, financial institutions, and telecom service providers to develop the necessary digital infrastructure, regulatory framework, and consumer awareness.

Despite the efforts of Nepal Rastra Bank (NRB) and other stakeholders to promote financial inclusion, numerous challenges remain. Geographic barriers, infrastructural deficiencies, low levels of financial literacy, and limited familiarity with formal banking services hinder the expansion of financial services to all segments of the population (Subedi, 2014). Moreover, the potential of digital financial services, which can overcome many of these obstacles, is yet to be fully harnessed (Chibba, 2009).

The problem of financial exclusion in Nepal, therefore, poses significant implications for the country's economic development. It not only affects the welfare of the excluded individuals but also undermines the nation's capacity to achieve inclusive and sustainable growth (Demirguc-Kunt et al., 2018). Understanding this crucial issue of financial exclusion is essential in formulating effective strategies and interventions that can enhance financial inclusion and thereby contribute to Nepal's economic development (Hannig & Jansen, 2010).

Several studies have examined the relationship between banking financial inclusion and its effect on economic development in Nepal and other countries. Iqbal and Sami (2017) find that the number of bank branches and the credit deposit ratio have a

positive and significant impact on a country's GDP. However, the growth of ATMs appears to have an insignificant effect on GDP. Audi et al. (2019) analyze six Asian countries and reveal that financial development has mixed effects on economic growth, while the number of bank branches positively influences both economic growth and human well-being. They also find that loans to rural areas and money supply have positive impacts on economic growth. Additionally, foreign direct investment (FDI) is shown to positively affect economic growth and human well-being. In terms of income inequality, it negatively affects both economic growth and human well-being.

Van and Linh (2019) highlighted the correlations between the number of bank branches, ATMs, domestic credit in the private sector, and increased rates of development in the economy. Ratnawati (2020) demonstrated that financial inclusion dimensions significantly influence economic growth, poverty, income inequality, and financial stability in various Asian countries. Adedokun and Aga (2021) revealed that financial inclusion has a positive impact on economic growth in Sub-Saharan African countries. Cicchiello et al. (2021) indicated that economic growth leads to financial inclusion, while low financial inclusion rates hinder development.

Abdul-Karim et al. (2022) found a positive threshold effect of financial inclusiveness on economic growth, with a stronger impact in less developed and emerging market countries. Dahiya and Kumar (2022) showed a significant relationship between economic growth and the usage dimension of financial inclusion in India. Amr et al. (2023) identified the long-term positive impact of ATMs, commercial banks, and mobile cellular subscriptions on GDP growth in European countries. Hosny et al. (2023) confirmed the positive effects of ATMs, commercial banks, and mobile cellular subscriptions on GDP growth in the short and long term in European countries. Saha et al. (2023) found that financial inclusion positively correlates with economic growth in developing countries. Teker et al. (2023) demonstrated the bidirectional relationship between financial inclusion and poverty, as well as the impact of financial inclusion on GDP per capita in Turkey and Greece. These findings collectively emphasize the significance of banking financial inclusion in promoting economic development, reducing poverty, addressing income inequality, and fostering financial stability. These studies emphasize the importance of financial inclusion in driving economic growth and human well-being at the international level.

In the context of Nepal, Gautam (2014) found empirical evidence confirming that financial development causes economic growth, with a reciprocal relationship between the two in the long run. Additionally, Shrestha (2020) highlights the progress made in expanding financial inclusion in Nepal but points out the existing gaps in access, usage, and adoption of financial services. Gajurel (2022) finds a strong association between financial inclusion and economic growth. However, the impact of financial inclusion on economic growth is not consistently positive and robust. The study suggests that policies promoting financial deepening, penetration, and reforms in the financial sector can enhance the relationship between financial inclusion and economic growth in Nepal.

The problem of financial exclusion in Nepal, therefore, poses significant implications for the country's economic development. It not only affects the welfare of the excluded individuals but also undermines the nation's capacity to achieve inclusive and sustainable growth. A deeper understanding of this issue is crucial for formulating effective strategies and interventions that can enhance financial inclusion and thereby contribute to Nepal's economic development. Based on the statement of problem, mainly the following questions are raised:

- i. What is the current state of bank branches, ATMs, mobile banking users, deposit account growth, debit card usage, internet banking users, and branchless banking in Nepal?
- ii. How does the presence of bank branches, ATMs, mobile banking users, deposit account growth, debit card usage, internet banking users, and branchless banking relate to Nepal's GDP?

1.3 Objectives of the Study

The main objective of the study is to examine the financial inclusion and its effect on economic growth in Nepal. However, the specific objectives of the study are as:

- i. To assess the current state of bank branches, ATMs, mobile banking users, deposit account growth, debit card usage, internet banking users, and branchless banking in Nepal.
- ii. To examine the relationship between the number of bank branches, ATMs, mobile banking users, growth in deposit accounts, debit card usage, internet banking users, branchless banking and Nepal's GDP.

1.4 Research Hypothesis

Based on the statement of the problem, objectives of the study and various empirical findings, the following hypothesis are tested in this study:

H₁: There is significant relationship between the number of bank branches and GDP growth in Nepal.

H₂: There is significant relationship between the number of ATMs and GDP growth in Nepal.

H₃: There is significant relationship between the number of mobile banking users and GDP growth in Nepal.

H₄: There is significant relationship between the growth in deposit accounts and GDP growth in Nepal.

H₅: There is significant relationship between the number of debit cards and GDP growth in Nepal.

H₆: There is significant relationship between the number of internet banking users and GDP growth in Nepal.

H₇: There is significant relationship between the number of branchless banking services and GDP growth in Nepal.

1.5 Rationale of the Study

The significance of studying the relationship between banking financial inclusion and economic development in Nepal holds great importance for various stakeholders and the overall socio-economic progress of the country. Firstly, Nepal is characterized by a large unbanked population, particularly in rural and marginalized areas. Examining the significance of digital financial inclusion in Nepal can provide insights into the potential benefits of expanding access to banking services for individuals, households, and businesses. It can help identify the barriers and challenges faced by underserved populations in accessing formal banking services, such as savings accounts, loans, and payment systems. Understanding the impact of banking financial inclusion can inform policymakers, regulators, and financial institutions in designing tailored strategies to address these barriers and promote inclusive growth.

Secondly, digital financial inclusion plays a crucial role in promoting entrepreneurship, investment, and job creation. By studying the impact of banking services on economic development in Nepal, researchers can assess how increased

access to banking products and services contributes to the growth and development of businesses, particularly small and medium-sized enterprises (SMEs). This knowledge can guide policymakers in formulating policies and regulations that facilitate access to credit, investment opportunities, and financial tools, thereby fostering entrepreneurship and creating employment opportunities.

Thirdly, digital financial inclusion has implications for poverty reduction and overall social welfare. Access to banking services enables individuals and households to participate in the formal financial system, accumulate savings, manage risks, and access credit for productive purposes. By investigating the effect of banking financial inclusion on poverty alleviation in Nepal, researchers can provide evidence-based insights into the pathways through which banking services can enhance the economic well-being of vulnerable populations. This knowledge can inform the design and implementation of targeted financial inclusion initiatives and social safety net programs aimed at reducing poverty and improving livelihoods.

Moreover, studying digital financial inclusion and its impact on economic development can contribute to enhancing financial stability, efficiency, and transparency. Increased usage of formal banking services can lead to improved financial intermediation, reduced informality, enhanced risk management, and better financial governance. This, in turn, can contribute to macroeconomic stability, attract domestic and foreign investment, and foster a conducive environment for economic growth.

Studying the significance of digital financial inclusion and its effect on economic development in Nepal is crucial for policymakers, regulators, financial institutions, and development practitioners. It provides insights into the potential benefits of expanding access to banking services, promoting entrepreneurship, reducing poverty, and enhancing financial stability. Such research contributes to the broader agenda of achieving inclusive and sustainable economic development in Nepal, empowering individuals and communities, and fostering equitable growth.

1.6 Limitations of the Study

Each study consists some limitations. This study limitations are as:

- i. This study covers only ten years data from fiscal year 2013/14 to 2022/23 only.

- ii. There is limited data available on financial inclusion in Nepal. This makes it difficult to track the progress of the country's financial inclusion agenda and to assess the impact of financial services on economic development.
- iii. The financial inclusion in Nepal has a short time horizon. This makes it difficult to assess the long-term impact of digital financial services on economic development.
- iv. There are methodological challenges in studying the impact of digital financial services on economic development. It is difficult to isolate the impact of digital financial services from other factors that may be affecting economic development.
- v. Multicollinearity issues are present in the data, so regression analysis was not performed. This limits the ability to draw causal inferences and understand the relationship between variables.

CHAPTER II

LITERATURE REVIEW

This chapter focuses on explaining the concept of digital financial inclusion and its relationship to economic growth. It provides a comprehensive definition of digital financial inclusion and explores its significance in promoting economic growth. Additionally, various theories and frameworks related to the impact of digital financial inclusion on economic growth are summarized. Furthermore, a thorough review of empirical studies examining the link between digital financial inclusion and economic growth is presented, offering insights into the existing literature.

2.1 Theoretical Review

2.1.1 Digital Financial Inclusion and Economic Growth

Digital financial inclusion, defined as digital access to and use of formal financial services by excluded populations, plays a pivotal role in contemporary global efforts to expand financial access. Providers of such services can be categorized into four groups, including full-service banks, limited-service niche banks, mobile network operators (MNOs) as e-money issuers, and nonbank non-MNO e-money issuers (Lauer & Lyman, 2015). These models operate through a digital transactional platform, an agent network, and the customer's access device, enabling digital delivery of payments, transfers, credit, savings, insurance, and securities to underserved populations.

Economic growth models are broadly categorized into exogenous and endogenous growth models, where the former attributes growth to factors like technology, capital formation, and labor productivity. In recent times, technological advancements, particularly in financial technology with digitalization, ATMs, and online banking, have taken center stage in discussions on economic growth (Bal & Nijkamp, 2017).

The global discourse on access to finance has been a focal point of international policy discussions since the early 2000s. Many nations, as part of their strategy for promoting more evenly distributed economic expansion, have adopted financial inclusion initiatives (Ratnawati, 2020). Recognizing the significance of financial

inclusion, which is considered foundational for a robust financial infrastructure, countries aim to foster economic development and prosperity (Sharma, 2016). While numerous studies have explored the link between inclusive finance and economic expansion, research in this domain, especially in developed and emerging economies, remains limited (Park, 2018).

Existing literature presents varying results concerning the relationship between inclusive finance and economic growth. Some studies, such as those conducted by Sharma (2016), Sethy and Acharya (2018), Kim et al. (2018), and Van et al. (2021), assert a positive and significant correlation between inclusive finance and economic expansion. Sharma (2016) investigation into the emerging economy of India from 2004 to 2013 revealed a strong and favorable association between inclusive finance and growth, as indicated by Granger tests and VAR techniques. Similarly, Sethy and Acharya (2018) analysis covering 31 developing and developed countries from 2004 to 2010 demonstrated a positive and significant connection with bidirectional causality. Van et al. (2021) studied on emerging markets corroborated these findings, highlighting a favorable impact on economic expansion, particularly in low-income nations.

However, contradictory results also exist in the literature, with studies pointing to a negative relationship between inclusive finance and economic growth. Naceur and Ghazouani (2007) examination of 11 MENA nations in 2007 indicated a detrimental effect of financialization on economic expansion. These contradictory findings underscore the complexity of the relationship between inclusive finance and economic growth and suggest the need for further investigation.

Digital financial inclusion is particularly crucial in developing countries, as highlighted by the World Bank, where nearly 1.7 billion adults lack access to formal financial services, with the majority residing in these regions (World Bank, 2017). Nepal, as a case in point, grapples with a significant portion of its population being unbanked or underbanked, making digital financial inclusion a key focus for promoting financial stability and economic development (Nepal Rastra Bank, 2019).

The positive impact of digital financial inclusion in Nepal is exemplified by the adoption of mobile banking services and e-wallet services. These platforms have significantly contributed to extending financial services to previously underserved

populations, facilitating digital transactions, bill payments, and remittances in both urban and rural areas (Esewa, 2021). The regulatory frameworks in Nepal, shaped by the Nepal Rastra Bank, have evolved to support digital financial services, aligning with global recommendations from organizations like the Consultative Group to Assist the Poor (CGAP), which emphasizes the importance of regulatory environments fostering innovation and collaboration to expand digital financial services (CGAP, 2018).

Despite the progress made in Nepal, challenges persist, including issues related to infrastructure, awareness, and literacy. Continued efforts from the government, financial institutions, and other stakeholders are imperative to overcome these challenges and further advance digital financial inclusion. This is essential not only for extending formal financial services to all segments of the population but also for fostering economic growth by leveraging the positive relationship between financial inclusion and economic development (Nepal Rastra Bank, 2021).

2.1.2 Financial Intermediation Theory

The financial intermediation theory was initially provided by Gurley and Shaw (1960), who highlighted the important function of financial intermediaries including banks, microfinance institutes and other financial institutions to mobilize savings, allocate capital and lower transaction costs. This theory applies in the case because the application of digital tools like mobile banking and various fintech platforms helps financial intermediaries reach economically disadvantaged people anywhere, thus helping in the economic growth of the society. The first work of Gurley and Shaw (1960) highlighted the crucial role of financial systems in helping allocate resources between savers and borrowers optimally. Beck et al. (2007) revealed a positive association between financial intermediation and economic growth, especially for developing nations lacking access to banking system.

With the theory in mind digital platforms minimize information asymmetries as one of the fundamental issues in the financial intermediation. Digital payment systems and credit-scoring algorithms are helping lenders better evaluate borrowers' creditworthiness and enable lending to underserved sectors like small and medium enterprises (SMEs) (Demirgüç-Kunt & Klapper, 2013). Suri and Jack (2016) demonstrated how mobile banking services, particularly Kenya's M-Pesa, have led to

significant increases in financial inclusion, resulting in higher levels of entrepreneurial activities and significant reductions in poverty.

Another fundamental lesson of financial intermediation theory is the multiplier effect of higher savings. Digital financial services promote savings through safe and convenient savings platforms like mobile wallets and savings apps. Higher savings rates enable financial institutions to mobilize more capital for productive investment. According to Levine (2005), another reason why countries with efficient financial systems grow faster is because financial intermediaries improve the savings-investment nexus.

Furthermore, digital financial inclusion improves mechanisms for risk-sharing. Microinsurance and digitally enabled risk mitigation tools enable a wide range of individuals and businesses to protect themselves against these shocks, promoting economic resilience. Beck et al. (2014) asserted that enhanced risk diversification via digital tools stabilize income streams driving sustained growth.

But this theory is not without its challenges. While financial intermediation enabled by digital tools has been a game changer, it is contingent on good-quality digital infrastructure and digital literacy. Allen et al. (2016) contended that in the absence of the provision of adequate digital literacy and infrastructure development, the positive impacts of digital financial inclusion are likely to be limited to groups that are already in a position of advantage, exacerbating rather than ameliorating inequality gaps.

2.1.3 Endogenous Growth Theory

Endogenous growth theory is well-established theory founded by Romer (1986) that explains economic growth and that links technological innovation, knowledge diffusion, and human capital development to growth, emphasizing the significance of growing internal factors over time (Romer, 1986). This theory finds full coherence with digital financial inclusion, where access to financial resources via technology helps diffusion as well as human capital. There are many manifestations of digital transformation, such as digital tools which reduce transaction costs, enhance efficiency, and allow for real-time financial transactions; these contribute to a surrounding environment ripe for innovation and productivity growth.

Aker and Mbiti (2010) showed how mobile banking in sub-Saharan Africa lowered transaction cost and improved market efficiency, which in turn spurred economic

growth. Digital financial inclusion applies financial technology to quotidian transactions, enabling micro-entrepreneurs and small and medium-sized enterprises (SMEs) to access working capital, scale their operations and create jobs. Such activities also promote wider economic dynamism (Demirgüç-Kunt et al., 2017).

This theory includes the perspective of human capital as one of the main contributions of endogenous growth theory. Kicking the digital financial inclusion ball and basic education and digital literacy forward will enhance total quality of workforces. According to Hanushek and Woessmann (2008), higher education levels within a country contribute to a faster rate of economic growth, since a more educated population can more easily take advantage of financial technologies.

Moreover, it highlights that economic growth is fueled by innovation. Digital financial inclusion encouraging entrepreneurial activity through access to credit enables startups to invest in research and development (R&D). Schumpeter (1911) notion of “creative destruction,” whereby the betterment of resource allocation is spurred by fintech innovations through the disruption of traditional financial systems. King and Levine (1993) suggested that countries with high financial innovation have more robust growth paths.

But the feedback loops that underlie the endogenous growth theory need to be actively encouraged. It also produces an extensive amount of useful data that financial providers can analyze to design innovative products, creating a cycle of continuous innovation. Inequalities might arise as a potential drawback of endogenous growth theory though. The digital divide may compound inequalities when marginalized populations cannot access digital financial instruments. Philippon (2016) warned that financial technology is known to improve efficiency, but it also has the potential to concentrate market power in a few dominant firms, which can lead to weaker inclusive growth.

2.1.4 The Institutional Theory

Beck et al. (2009) argued that inclusive financial systems, characterized by a greater reach of banking and other financial services, contribute significantly to economic development. They posit that financial institutions play a critical role in expanding access to finance, particularly for the poor and disadvantaged groups. This, in turn,

fosters economic participation and reduces income inequality, driving inclusive growth.

Moreover, financial institutions act as intermediaries, connecting savers and borrowers in the economy. According to Levine (2005), these institutions help mobilize savings from individuals who have surplus funds and channel them to those who need them for productive investments. This intermediation function, therefore, promotes capital formation and economic growth.

In the same vein, Minsky (1992) asserts that financial institutions are instrumental in providing a stable financial environment, which is a prerequisite for economic development. These institutions, through their risk management practices, help mitigate financial risks and maintain economic stability, thereby creating a conducive environment for economic activities.

However, it is important to note that the effectiveness of financial institutions in promoting financial inclusion can be influenced by various factors. As highlighted by Aghion and Bolton (1992), institutional factors such as regulatory frameworks, legal system, and governance practices can affect the ability of financial institutions to serve the unbanked and underbanked populations. Therefore, it is imperative to also focus on strengthening these institutional factors to ensure that financial institutions can effectively promote financial inclusion and economic development.

The Institutional theory provides a compelling explanation for the role of financial institutions in promoting financial inclusion and economic development. It underscores the need to develop robust financial institutions and improve institutional factors to foster financial inclusion and drive economic growth.

These theories underscore the significance of financial inclusion in promoting economic development. However, the actualization of these benefits is contingent upon overcoming the barriers to financial inclusion. In the context of Nepal, this entails addressing issues such as geographic barriers, infrastructural deficits, and low financial literacy levels, among others.

2.2 Empirical Review

Babajide et al. (2015) investigated the impact of financial inclusion (FI) on economic growth in Nigeria, highlighting its role as both a driver and a result of economic

development. The study aimed to identify the determinants of FI and its influence on economic growth. Utilizing secondary data from world development indicators and applying an ordinary least square regression model, the research found that FI significantly determines the total factor of production and capital per worker, which in turn influences the overall output in the economy. The results suggest that FI enhances economic growth by improving the efficiency of financial intermediary services and generating local savings, which boost productive investments in local businesses. The study concluded with a recommendation for Nigeria to harness its natural and economic resources more effectively, promoting diversification and revitalization beyond its oil-dependent economy. The findings underscore the importance of robust FI frameworks for sustainable economic development.

Nkwede (2015) investigated the influence of financial inclusion on the growth of the African economy, focusing on Nigeria from 1981 to 2013. Using multiple regression models and the Ordinary Least Square technique, the study found that financial inclusion had a significant negative impact on Nigeria's economic growth. This result was attributed to the high level of financial exclusion among bankable adults. The study recommended a more inclusive financial system, particularly targeting the rural populace, to foster sustained high growth with financial inclusiveness in Nigeria and Africa. The findings emphasize that while growth is beneficial, sustained growth with financial inclusiveness is optimal, especially in developing economies.

Sharma (2016) explored the varying levels of economic and financial sector development across Asian economies, highlighting the disparities between high-income countries like Japan, Singapore, and the Republic of Korea, and low-income countries such as Cambodia, Nepal, and Bangladesh. Middle-income countries like Malaysia and the Maldives also show significant differences in development compared to Pakistan and India. The study emphasizes that while there is a well-established link between financial sector development and economic growth, financial development does not necessarily imply financial inclusion. Financial inclusion ensures that all members of an economy have access to, and can use, formal financial services. The paper observes that even highly developed financial systems can fail to be inclusive, leaving certain segments of the population outside the formal financial system. Sharma calls for a more inclusive approach to financial sector development to ensure that all population segments benefit from economic growth.

Zulfiqar et al. (2016) investigated the state of financial inclusion and its importance for inclusive growth in Pakistan. Utilizing the probit estimation technique, the study aimed to identify the determinants of financial inclusion and explore the relationship between perceived barriers and individual characteristics. The findings indicated that Pakistan lags behind other countries in financial inclusion. Key determinants identified were education level, income, and gender discrimination. Significant barriers included lack of money and requisite formalities, which hinder access to financial services. The study emphasized the need for comprehensive and accessible financial services for all segments of society to promote sustainable and inclusive economic growth.

Iqbal and Sami (2017) focused on the significance of financial inclusion as a catalyst for economic growth and poverty reduction. They define financial inclusion as the provision of banking services to both privileged and disadvantaged individuals at affordable terms and conditions, aiming to bridge the wealth gap within a society. Recognizing the pivotal role of financial institutions in progress and economic development, the study investigates the impact of financial inclusion on the growth of the economy using secondary data over a seven-year period. Employing a multiple regression model as the main statistical tool, the researchers find a positive and significant relationship between the number of bank branches and the credit deposit ratio with the country's GDP. However, they observe an insignificant impact of ATMs growth on India's GDP. Overall, this study sheds light on the positive influence of certain financial inclusion factors on economic growth, providing insights for policymakers on strategies to enhance financial inclusion and foster economic development effectively.

Lawal (2017) explored the role of Mobile Money Services (MMS) in enhancing financial inclusion (FI) and digital financial services (DFS) in Nigeria. The study was motivated by the widespread adoption of mobile networks, the under-served population, and the Central Bank of Nigeria's push towards a cashless economy. Utilizing in-depth analysis, the research examined MMS's impact on FI, focusing on transaction fees, transaction value and count, stakeholder involvement, user experience, security, and regulatory policies. The findings indicated that while MMS has significant potential to enhance FI in Nigeria, achieving this requires coordinated efforts from all stakeholders to develop effective solutions. The study concluded that

MMS is critical for reducing financial exclusion, but emphasized the need for a comprehensive framework by the government and stakeholders to improve access to financial services. The implications highlight the necessity for deliberate actions and regulatory support to fully realize the benefits of MMS in driving socio-economic development.

Kim et al. (2018) examined the relationship between financial inclusion and economic growth in Organization of Islamic Cooperation (OIC) countries by analyzing panel data from 55 OIC countries. Using dynamic panel estimations, panel VAR, IRFs, and panel Granger causality tests, the study found that financial inclusion positively impacts economic growth. The results indicated that financial inclusion and economic growth have mutual causalities, suggesting that enhancing financial inclusion can foster economic growth in OIC countries. This study underscores the importance of promoting financial inclusion to achieve sustainable economic development within the OIC region.

Sethi and Acharya (2018) assessed the dynamic impact of financial inclusion on economic growth across developed and developing countries. Using panel data models, including country-fixed effect, random effect, and time-fixed effect regressions, as well as panel cointegration and causality tests, the study examined the linkage between financial inclusion and economic growth. Data from Sarma (2012) for the period 2004-2010 were utilized. Empirical findings revealed a positive long-term relationship between financial inclusion and economic growth across 31 countries, with a bi-directional causality between the two. The study confirmed that financial inclusion is a key driver of economic growth. However, it noted two limitations: the analysis was restricted to banking institutions, and the period tested for the long-term relationship was relatively short. Despite these limitations, the research underscored the critical role of financial inclusion in promoting economic development.

Audi et al. (2019) examined the relationship between financial inclusion, economic growth, and human well-being in six Asian countries: Pakistan, India, China, Sri Lanka, Bangladesh, and Malaysia, spanning the period from 1990 to 2018. The researchers utilize panel pooled regression analysis to analyze the selected variables in the model. The findings indicate that financial development has a negative and

insignificant impact on economic growth, but a negative and significant impact on human well-being. The number of bank branches shows a positive but insignificant effect on economic growth, whereas it has a positive and significant impact on human well-being. Loans to rural areas have a positive and significant influence on economic growth, but an insignificant impact on human well-being. Money supply demonstrates a positive and significant impact on both economic growth and human well-being. Foreign direct investment is found to have a positive and significant effect on both economic growth and human well-being. Furthermore, the study reveals that income inequality negatively affects economic growth and human well-being. Economic development, on the other hand, has a positive and significant impact on human well-being, highlighting the potential for enhancing economic development to improve human well-being. Overall, the study emphasizes the importance of financial inclusion in fostering higher economic growth and human well-being in the selected Asian countries.

Gourène and Mendy (2019) investigated the causal relationship between financial inclusion and economic growth within the West African Economic and Monetary Union (WAEMU) from 2006 to 2015. The authors employ a combination of the heterogeneity panel causality test and the Maximal Overlap Discrete Wavelet Transform (MODWT) to analyze bi-directional causality at different time scales. They utilize two financial inclusion indicators: the overall rate of demographic penetration of financial services (representing financial inclusion supply) and the overall rate of use of financial services (representing financial inclusion demand). The results reveal that, at scale 1 (2 - 4 years), no causality is observed between economic growth and the financial inclusion indicators. However, at scale 2 (4 - 8 years), a bi-directional causality is detected between economic growth and financial inclusion. Based on these findings, the authors suggest that policymakers should prioritize reforms that enhance financial inclusion, particularly on the supply side, while also improving the efficiency of macroeconomic growth levers, as they are crucial factors influencing financial inclusion. Overall, Gourène and Mendy's study provides insights for policymakers in promoting financial inclusion and fostering sustainable economic growth within the WAEMU context.

Ain et al. (2020) highlights the role of financial inclusion as a means to enhance economic growth, alleviate poverty, generate employment, and reduce income

inequality in developing countries. They emphasize the importance of providing affordable financial products and services to the low-income group through financial institutions. The research analyzes the relationship between financial inclusion, entrepreneurship, institutions, and economic growth across 33 developing countries from 2004 to 2016, utilizing the Generalized Method of Moments (GMM) approach. The empirical findings reveal a positive impact of financial inclusion on economic growth, while entrepreneurship demonstrates a significant negative effect on economic growth. Additionally, certain institutional variables such as the rule of law and political stability exhibit negative effects, while others like control of corruption and government effectiveness demonstrate positive effects on economic growth. These results provide valuable insights for policymakers in designing strategies to promote financial inclusion, entrepreneurship, and favorable institutional environments to foster sustainable economic growth in developing countries.

Shrestha (2020) presents a comprehensive analysis of financial inclusion in Nepal, highlighting its progress, challenges, and the way forward. The paper acknowledges the advancements made in expanding financial inclusion, while also emphasizing the existing gaps in access, usage, and adoption of financial services. To address these challenges, the author proposes leveraging modern technology, implementing inclusive policies, raising financial awareness, and enhancing the benefits of formal financial services. Furthermore, the potential role of foreign direct investment and technology transfer, particularly in the Fintech sector, is identified as a profitable avenue to promote financial inclusion in Nepal. Overall, the paper provides valuable insights and recommendations for achieving meaningful financial inclusion and creating a more inclusive financial system in the country.

Thaddeus et al. (2020) examined the long-run causal effect of digital financial inclusion on economic growth in sub-Saharan Africa, utilizing a sample of 22 countries and quarterly data spanning from 2011 to 2017. Economic growth, measured by GDP per capita, serves as the dependent variable, with indicators of digital financial inclusion including automated teller machines (ATM), number of commercial bank branches (CBB), Loan Outstanding (LOS), Mobile agent outlets (MOAO), and Mobile money transactions (MOMO). Employing the vector error correction model and Granger causality test, the study reveals a significant long-run causal relationship between digital financial inclusion and economic growth in sub-

Saharan Africa, with causality running unidirectionally from economic growth to digital financial inclusion. The findings highlight the strong association between digital financial inclusion and the progress of economic growth in the region. However, the study emphasizes the need for comprehensive education, customer awareness, E-banking training, and digital financial inclusion literacy programs, coupled with effective regulation, to ensure widespread access to financial services in sub-Saharan Africa. The implication is that while digital financial inclusion is integral to economic growth, concerted efforts and regulatory measures are required to address education and awareness gaps for its complete success in the region.

Ahmad et al. (2021) assessed China's recent rapid expansion of digital financial inclusion and its impact on provincial economic growth, with a unique consideration of human capital in the analysis. The study's objective is to fill gaps in empirical evidence regarding the relationship between digital financial inclusion, human capital, and economic growth. Using a new proxy for digital financial inclusion that considers breadth of coverage, depth of usage, and digitalization level, the empirical findings reveal significant positive effects of both digital financial inclusion and human capital on China's provincial economic growth. The study concludes by recommending investments in human capital development alongside efforts to enhance and upgrade digital financial inclusion, highlighting the potential for these factors to synergistically contribute to higher economic growth in China. The implication is that a comprehensive approach, addressing both human capital and digital financial inclusion, is essential for sustained and robust economic development in the context of China's evolving financial landscape.

Khera et al. (2021) investigated the impact and drivers of digital financial inclusion in 52 developing countries, addressing questions about its relationship with economic growth and the factors influencing its progress. The study's objective is to explore whether digital financial inclusion, as opposed to traditional services, has a positive impact on economic growth. Employing cross-sectional instrument variable procedures and new indices of financial inclusion, the findings indicate a positive association between the exogenous component of digital financial inclusion and GDP per capita growth during 2011-2018. The study employs fractional logit and random effects empirical estimation to identify key drivers of digital financial inclusion, revealing that access to infrastructure, financial and digital literacy, and the quality of

institutions play crucial roles. The conclusion underscores that digital financial inclusion can indeed accelerate economic growth and provides valuable insights for policymakers, suggesting that efforts to improve access to infrastructure, enhance literacy, and strengthen institutions are essential for promoting digital financial inclusion. The implication is that a focus on these key drivers is crucial for crafting effective policies that facilitate the digitization of financial services and, in turn, advance financial inclusion in developing countries.

Rekha et al. (2021) addressed the evolving phenomenon of digital financial inclusion and its relationship with economic freedom and financial development, emphasizing the lack of empirical evidence on these linkages in existing literature. The study's objective is to examine the relationships between digital financial inclusion, economic freedom, and financial development. Through a panel data analysis of emerging economies, the results reveal a positive long-term impact of the nexus of ICT diffusion, economic freedom, and financial development on financial inclusion. This underscores the importance of fostering an economic environment conducive to sustained growth for the promotion of financial inclusion. The findings have significant implications for economic policy, suggesting a need for a more holistic approach to policy formulation. The conclusion emphasizes the crucial role of the examined variables in shaping financial inclusion and highlights the importance of integrating these considerations into broader economic policy frameworks. The implication is that policymakers should prioritize creating an environment that fosters economic freedom and embraces digital financial inclusion to drive sustained economic growth and enhance financial inclusion in emerging economies.

Azmi (2022) emphasizes the critical role of financial inclusion in driving inclusive growth and provides policy solutions to address barriers to financial market access. The study examines the global effects of financial inclusion on economic growth using a comprehensive composite index and heterogeneous panel data models. The findings demonstrate a long-run relationship between economic growth, financial inclusion, and control variables across different income and regional levels. Employing a GMM approach, the study confirms that financial inclusion has a significantly positive impact on economic growth, highlighting its effectiveness in fostering rapid economic development. Additionally, the research reveals bidirectional causality between economic growth and financial inclusion, while supporting

unidirectional causality from credit, foreign direct investment, inflation rate, rule of law, school enrollment ratio, and trade openness to economic growth. The study's limitations include the absence of causality evidence for age dependency ratio and population in relation to economic growth. Overall, this study offers valuable insights into the global implications of financial inclusion on economic growth, providing policymakers with important considerations for promoting inclusive and sustainable development.

Gajurel (2022) investigated the relationship between financial inclusion and economic growth in Nepal. Using a descriptive and multiple regression model, the study analyzes data from mid-July 2014 to mid-July 2021 to examine this linkage. The empirical results suggest a strong association between financial inclusion and economic growth in Nepal. However, the study finds no positive and robust impact of financial inclusion on economic growth. Despite this, the overall analysis indicates that financial inclusion is crucial for the Nepalese economy. It is important to note that the study covers a limited set of financial inclusion indicators and a relatively short period of data, which may not fully capture the long-term relationship between financial inclusion and growth in Nepal. The study recommends policies that promote financial deepening, penetration, and reforms in the financial sector to enhance the bond between financial inclusion and economic growth.

Ugwuanyi et al. (2022) analyzed the impact of financial inclusion on economic growth, disaggregated into traditional finance and digital finance, across 29 Sub-Saharan African countries from 2012 to 2020. Employing panel feasible generalized least squares, panel system generalized method of moment procedures, and panel vector autoregression Granger causality test, the study aims to discern the nuanced effects of both traditional and digital financial inclusion on economic growth. The major findings indicate that both traditional and digital financial inclusion positively and significantly impact economic growth for the entire sample, with the magnitude of impact being greater for traditional finance. Interestingly, the study reveals differences in the impact of financial inclusion across income levels, where both traditional and digital finance are positive and significant in middle-income countries, while only digital finance is significant in low-income countries. Granger causality tests highlight that economic growth is more influenced by traditional finance, particularly in middle-income countries, and the access sub-dimension of financial

services has a greater impact on economic growth than the usage sub-dimension. The study concludes by emphasizing the importance of not neglecting traditional banking structures even as digital finance gains prominence in developing economies. The implication is that a balanced approach, considering both traditional and digital financial inclusion, is essential for sustainable economic growth in Sub-Saharan Africa.

Charles et al. (2023) investigated the roles of digital finance and financial inclusion in the economic growth of nineteen COMESA member states, utilizing annual time series data from 1997 to 2018. Employing the panel ARDL framework, the objective is to understand the drivers of growth in the region. The major findings indicate that various aspects of digital finance, including automated teller machines, mobile purchases, point of sale and mobile banking, as well as financial inclusion measures such as the number of deposit accounts and registered mobile money accounts per 1,000 adults, active mobile money agent outlets, digital card ownership, and financial literacy, play crucial roles as predictors of economic growth. Notably, bidirectional causality is observed between the index of digital finance, financial inclusion, and economic growth, suggesting that policies aimed at promoting these factors may reciprocally boost growth. The study concludes by emphasizing the importance of policies that encourage digital finance and financial inclusion in the COMESA region, underlining the deterrent effects of weak legal environments and macroeconomic volatility on growth. The implication is that targeted initiatives can foster a conducive environment for sustainable economic development in these member states.

Yaqin and Safaun (2023) developed a model for measuring financial inclusion by incorporating the evolution of digital finance and assessing its relationship with GDP growth in emerging nations, using data from 51 developing countries in 2014 and 2017. Principal component analysis (PCA) is employed to create the Digital Financial Inclusion Index, and the fixed effects model (FEM) is utilized to estimate the association between the inclusion of digital finances and economic growth. The study finds that digital financial inclusion metrics in emerging nations fall within the midrange, and the financial inclusion indicator in this research strengthens compared to other studies. Importantly, the study reveals that the inclusion of digital finance positively influences GDP growth in developing nations. The conclusion underscores the significance of digital financial inclusion in fostering economic growth in

emerging countries. The implication is that policymakers and stakeholders should prioritize and enhance efforts to include digital finance in financial systems to promote sustainable economic development in developing nations.

Xi and Wang (2023) investigated the impact of digital financial inclusion on the quality of economic growth in China, utilizing provincial panel data. The authors employ various statistical models, including the panel fixed effect model, mediation effect model, panel threshold model, and spatial Durbin model, to assess the influence of digital financial inclusion. The major findings indicate a positive impact of digital financial inclusion on the quality of economic growth, particularly in the eastern region and areas with high marketization. The study reveals that digital financial inclusion stimulates entrepreneurial vitality, contributing to an increasingly positive non-linear effect on economic growth quality. Importantly, the research highlights the spillover effects, demonstrating that digital financial inclusion can enhance economic growth quality in neighboring regions. The conclusion emphasizes the potential for significant improvement in economic growth quality by expanding the coverage and usage of digital financial inclusion. The implication is that policymakers and stakeholders should prioritize the broadening and deepening of digital financial inclusion to foster sustainable and high-quality economic development in China.

Ramadhan and Robin (2024) examined the impact of financial inclusion on industrial societies, focusing on economic growth, social equity, digital transformation, and industrial development. Through a mixed-method approach, including a systematic literature review and case studies from Germany, South Korea, the United States, China, and Brazil, they analyzed how financial inclusion affects societal outcomes. The findings indicated that a 10% increase in financial inclusion indicators is linked to a 0.2-0.7% rise in GDP growth rates. The study highlighted the synergistic effects between financial inclusion and digital transformation, particularly in mobile banking adoption. Despite these benefits, challenges such as urban-rural divides and gender disparities in financial access persist. The study emphasized the need for integrated policy approaches, regulatory innovation, and public-private partnerships to advance financial inclusion. These insights provide valuable guidance for policymakers and financial institutions in promoting sustainable and equitable economic development in industrial contexts.

Qing (2024) discussed the development and significance of digital finance and financial inclusion, highlighting their critical roles in modern financial systems since the early 21st century. The paper identifies three major effects on small and micro enterprises and common residents: increased efficiency in financial markets through better matching of parties, improved consumption quality, and economic growth. However, the study also warns of new risks introduced by digital finance, emphasizing the need for further research to enhance stability and reduce risks. Qing underscores the importance of continuing efforts to make digital finance more inclusive and secure to sustain its positive impact on economic development.

Tiony (2024) examines the impact of financial technology (fintech) innovations on financial inclusion and economic growth in Kenya. The study analyzes how fintech solutions, such as mobile money, digital banking, and blockchain technology, have enhanced accessibility, affordability, and usage of financial services. Key findings reveal that mobile money platforms like M-Pesa have been particularly effective in providing financial services to the unbanked population, significantly improving financial inclusion. Economic growth has been positively impacted through the development of small and medium-sized enterprises (SMEs), job creation, and GDP growth. However, challenges such as regulatory hurdles, infrastructure limitations, and cybersecurity concerns persist. The study recommends creating a conducive regulatory environment, enhancing infrastructure, especially in rural areas, and addressing cybersecurity issues to fully realize the potential of fintech. Collaboration between fintech companies, traditional financial institutions, and government agencies is emphasized to foster an inclusive financial ecosystem. The findings underscore the need for targeted policies and practical solutions to maximize the benefits of fintech innovations in Kenya.

Table 1
Summary of Literature Review

SN	Year	Author(s)	Objective	Methodologies	Major Findings
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1	2015	Babajide et al.	To investigate the impact of financial inclusion on Nigeria's economic growth.	Secondary data analysis using OLS regression.	Financial inclusion is a key determinant of production factors, increasing output and growth.
2	2015	Nkwede	To examine the influence of financial inclusion on Nigeria's economy from 1981-2013.	Time series regression using OLS.	Financial inclusion had a negative impact on growth due to high exclusion rates; rural focus needed.
3	2016	Sharma	To analyze the link between financial sector development and financial inclusion in Asian economies.	Comparative analysis of financial systems and their inclusiveness.	Even well-developed financial systems often exclude significant population segments.
4	2016	Zulfiqar et al.	To study the state of financial inclusion in Pakistan and its significance for inclusive growth.	Probit regression analysis of determinants and barriers to financial inclusion.	Income, education, and gender are critical to inclusion; formalities and lack of money are major barriers.
5	2017	Lawal	To explore the	In-depth analysis	MMS has

			role of Mobile Money Services (MMS) in enhancing financial inclusion in Nigeria.	of MMS including transaction data, policies, regulations, and ecosystem stakeholders.	significant potential to drive financial inclusion but requires deliberate actions by stakeholders to maximize impact.
6	2017	Iqbal and Sami	To explore the impact of financial inclusion on economic growth in India.	Multiple regression model analyzing secondary data over 7 years	Positive and significant relationship between the number of bank branches and GDP; Insignificant impact of ATMs on GDP.
7	2018	Kim et al.	To examine the relationship between financial inclusion and economic growth in OIC countries.	Dynamic panel estimation, panel VAR, and Granger causality tests on 55 countries.	Financial inclusion has a positive, bidirectional causal effect on economic growth.
8	2018	Sethi and Acharya	To assess the long-term impact of financial inclusion on economic growth across 31 countries.	Panel data models: cointegration and causality tests.	Financial inclusion has a positive, long-term relationship with economic growth, with bidirectional

					causality.
9	2019	Audi et al.	To examine the relationship between financial inclusion, economic growth, and human well-being in Asian countries.	Panel pooled regression analysis (1990-2018)	Mixed impact of financial development on growth and well-being. Positive effects of branches, loans, money supply, and FDI; Negative impact of income inequality.
10	2019	Gourène and Mendy	To investigate the causal relationship between financial inclusion and economic growth within WAEMU.	Heterogeneity panel causality test and Maximal Overlap Discrete Wavelet Transform (MODWT)	No short-term (2-4 years) causality. Bi-directional causality at the medium term (4-8 years).
11	2020	Ain et al.	To analyze the relationship between financial inclusion, entrepreneurship, institutions, and economic growth in developing countries.	Generalized Method of Moments (GMM) approach	Financial inclusion positively impacts growth; Entrepreneurship has a negative impact. Mixed impact of institutional variables.

12	2020	Shrestha	To provide a comprehensive analysis of financial inclusion in Nepal.	Descriptive analysis and multiple regression model (2014-2021)	Progress made in financial inclusion, but challenges remain. Recommendations for leveraging technology and policy interventions.
13	2020	Thaddeus et al.	To examine the long-run causal effect of digital financial inclusion on growth in Sub-Saharan Africa.	Vector error correction model and Granger causality test (22 countries, 2011-2017)	Significant long-run causal relationship from economic growth to digital financial inclusion.
14	2021	Ahmad et al.	To assess the impact of digital financial inclusion and human capital on China's provincial economic growth.	Regression models examining provincial growth	Digital financial inclusion and human capital positively affect economic growth in China.
15	2021	Khera et al.	To investigate the impact and drivers of digital financial inclusion in 52	Cross-sectional instrument variable procedure	Positive association between digital financial inclusion and GDP per

			developing countries.		capita growth.
16	2021	Rekha et al.	To examine relationships between digital financial inclusion, economic freedom, and financial development in emerging economies.	Panel data analysis	ICT diffusion, economic freedom, and financial development positively impact financial inclusion.
17	2022	Azmi	To examine the global effects of financial inclusion on economic growth.	Composite index and heterogeneous panel data models	Financial inclusion significantly positively impacts economic growth.
18	2022	Gajurel	To investigate the relationship between financial inclusion and economic growth in Nepal.	Descriptive analysis and multiple regression model (2014-2021)	Strong association between financial inclusion and economic growth in Nepal.
19	2022	Ugwuanyi et al.	To analyze the impact of financial inclusion on	Panel feasible generalized least squares and system GMM	Positive impact of both traditional and digital financial inclusion

			growth in Sub-Saharan Africa.		on economic growth, with traditional finance having a stronger effect.
20	2023	Charles et al.	To investigate the roles of digital finance and financial inclusion in growth across COMESA.	Panel ARDL framework	Digital finance and financial inclusion are important predictors of economic growth.
21	2023	Yaqin and Safaun	To develop a model measuring financial inclusion by incorporating digital finance and assess its relationship with GDP growth in emerging nations.	Principal component analysis (PCA) and fixed effects model (FEM)	Digital financial inclusion positively influences GDP growth in emerging nations.
22	2023	Xi and Wang	To investigate the impact of digital financial inclusion on the quality of economic growth in China.	Panel data analysis using various statistical models	Digital financial inclusion positively impacts economic growth, particularly in eastern and high marketization areas.

23	2024	Ramadhan and Robin	To examine the impact of financial inclusion on industrial societies and economic development.	Mixed methods: literature review and case studies from five industrial nations.	Financial inclusion promotes GDP growth, digital transformation, and equity but faces challenges like rural and gender divides.
24	2024	Qing	To examine the effects of digital finance and financial inclusion on economic growth.	Literature review and secondary data analysis of micro and macro impacts.	Digital finance improves financial efficiency and resident consumption quality but introduces new market risks.
25	2024	Tiony	To analyze the impact of fintech innovation on financial inclusion and economic growth in Kenya.	Case studies and data analysis of fintech contributions to SMEs, GDP, and job creation; policy recommendations.	Fintech innovations like M-Pesa significantly enhance financial inclusion and economic growth but face challenges like regulations and cybersecurity.

2.3 Research Gap

The study on the relationship between digital financial services and economic growth in Nepal, while comprehensive, exhibits certain research gaps that necessitate attention for future investigations. Primarily, the research focuses on establishing correlations between digital financial inclusion indicators and GDP growth, leaving room for a deeper exploration of the causal mechanisms underlying these relationships. The temporal dynamics over the study period from fiscal year 2013/14 to 2022/23 could be further scrutinized through longitudinal analysis to understand how the relationships evolve over time amidst economic, technological, and policy changes. Moreover, there is a research gap in not considering additional variables that might contribute to economic growth, and future studies could benefit from incorporating qualitative aspects of financial inclusion. The study's exclusive focus on Nepal as a whole neglects potential geographical or demographic variation within the country, and future research could explore regional disparities or differences in urban and rural contexts. Lastly, while the study employs robust statistical tools, there is a research gap in terms of conducting explicit policy implications and recommendations based on the findings. Addressing these gaps will undoubtedly enhance the study's insights, contributing to a more nuanced understanding of the intricate relationship between digital financial services and economic growth in Nepal and providing valuable input for policymakers and stakeholders.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology is a well-structured and coherent approach that researchers use to design, carry out, and analyze research studies. It is a systematic and logical process that involves selecting and utilizing suitable research methods, tools, and techniques to effectively address research questions and achieve research objectives. Research methodology involves key components that guide the systematic and rigorous conduct of a study. It includes the research design, sampling techniques, data collection methods, data analysis techniques, validity and reliability measures, ethical considerations. These components establish a strong foundation for high-quality research.

3.1 Research Design

The appropriate research design for investigating the relationship between digital financial services and GDP growth in Nepal would involve a descriptive and causal research design. This approach included quantitative research to collect and analyze data on variables such as the number of bank branches, ATMs, mobile banking users, growth in deposit accounts, number of debit cards, internet banking users, branchless

banking, and GDP growth. Statistical analyses, such as regression and correlation analysis, would be conducted to identify numerical relationships.

3.2 Population and Sample, and Sampling Design

The population for this research study is the indicators of all financial institution and gross domestic product (GDP). In this study secondary data are taken. In the case of secondary data analysis, the sample size and sampling procedures are not applicable in the traditional sense. Instead of selecting participants or observations for inclusion, researchers aim to access and analyze existing data from available sources.

For this study, the sample size is not determined through traditional sampling procedures but rather is determined by the availability and completeness of the data from the selected sources. The researchers collected data from government agencies such as the Ministry of Finance and the Nepal Rastra Bank, as well as international databases like the World Bank and IMF. The sample size was contingent upon the data that is accessible and relevant to the research objectives.

Sampling procedures, for this study, refer to the process of identifying and retrieving the necessary data from the selected sources. Researchers employed systematic approaches to collect data across the ten fiscal years i.e., 2013/14 to 2022/23, ensuring comprehensive coverage and representativeness. They may establish a specific timeframe, search criteria, and inclusion criteria to identify and select the relevant reports, publications, or data sets from the government agencies and international databases.

3.3 Nature and Sources of Data, and the Instruments of Data Collection

This study utilized secondary data to examine the correlation between digital financial inclusion and GDP growth in Nepal. The data collection period spans from fiscal year 2013/14 to fiscal year 2022/23. To obtain the required financial data for the study, the Nepal Rastra Bank (NRB), the central bank of Nepal, serves as the principal source. The NRB reports provide comprehensive and reliable financial information for the country. These sources provide a data on various aspects, including the number of bank branches, ATMs, mobile banking users, growth in deposit accounts, debit card usage, internet banking users, and branchless banking in Nepal. Additionally,

supplementary data was gathered from reputable international sources such as the World Bank's database and the International Monetary Fund (IMF) database.

In this study, the data collection method revolves around the utilization of secondary data sources to examine the relationship between digital financial inclusion and GDP growth in Nepal. The primary instruments employed are document analysis and database search. Researchers will extensively analyze and extract pertinent information from reports, publications, and datasets published by government agencies, such as the Ministry of Finance and the Nepal Rastra Bank (NRB). Additionally, renowned international databases, including the World Bank and IMF, will be accessed to gather relevant data. Through systematic document analysis, researchers will extract key variables such as the number of bank branches, ATMs, mobile banking users, growth in deposit accounts, debit card usage, internet banking users, and branchless banking in Nepal. Simultaneously, database searches is conducted to access comprehensive and reliable information. These secondary data collection methods will provide a wealth of data for subsequent analysis, enabling an exploration of the relationship between digital financial inclusion and GDP growth. It is important to note that as secondary data is utilized, no direct interaction with human participants is involved, eliminating the need for survey or interview instruments in this study.

3.4 Method of Analysis

For the analysis of data in this study, the researchers used SPSS 25.0 software. trend, descriptive statistics, correlation analysis and OLS regression model will be employed to determine the statistical significance of the observed differences in GDP growth across different categories of the independent variables. The hypothesis is tested with significance value (p values) of regression model.

3.4.1 Trend Analysis

The important tool for exploring the relationship between digital financial services and GDP growth in Nepal is trend analysis. Trend analysis helps identify and analyze the patterns or trends in the data during the study period i.e., 2013/14 to 2022/23 providing insights into the direction and magnitude of changes over time on study variables. Line charts visually represent the trends in variables over time. By plotting

the variables on the y-axis and time periods on the x-axis, line charts allow for a quick visual assessment of the general trend, whether it is increasing, decreasing, or stable.

3.4.2 Descriptive Statistics

In the study assessing the relationship between digital financial inclusion and economic growth, descriptive statistics were employed to provide a comprehensive summary of the key variables under consideration. The dependent variable, economic growth measured by GDP, was subjected to descriptive analysis, encompassing measures of central tendency such as the mean GDP growth rate and measures of dispersion including the standard deviation. For the independent variables representing digital financial inclusion number of bank branches, number of ATMs, number of mobile banking users, growth in deposit accounts, number of debit cards, internet banking users, and number of branchless banking services descriptive statistics were computed to outline their distributions. This involved calculating the mean, median, range, and standard deviation for each variable. Additionally, skewness and kurtosis are calculated to assess the distribution and normality of the data. These descriptive statistics collectively serve to offer a clear and concise overview of the central tendencies and variabilities within the dataset, laying the groundwork for subsequent inferential analyses exploring the relationships between digital financial inclusion variables and economic growth.

3.4.3 Correlation Analysis

In the study examining the relationship between digital financial inclusion and economic growth, correlation analysis was employed to assess the strength and direction of the linear relationships between the dependent variable (GDP growth) and the independent variables representing digital financial inclusion. The correlation coefficients between GDP growth and each digital financial inclusion variable, including the number of bank branches, number of ATMs, number of mobile banking users, growth in deposit accounts, number of debit cards, internet banking users, and number of branchless banking services, were computed. The Pearson correlation coefficient, commonly used for assessing linear relationships between continuous variables, was likely calculated. Additionally, to account for potential nonlinear relationships, other correlation measures such as the Spearman rank correlation coefficient might have been considered. The resulting correlation coefficients were interpreted to understand the direction (positive or negative) and strength (weak,

moderate, strong) of the associations between economic growth and each aspect of digital financial inclusion. The correlation analysis provided initial insights into the potential relationships between the variables, guiding further regression analyses and hypothesis testing in the study.

3.5 Research Framework and Definition of Variables

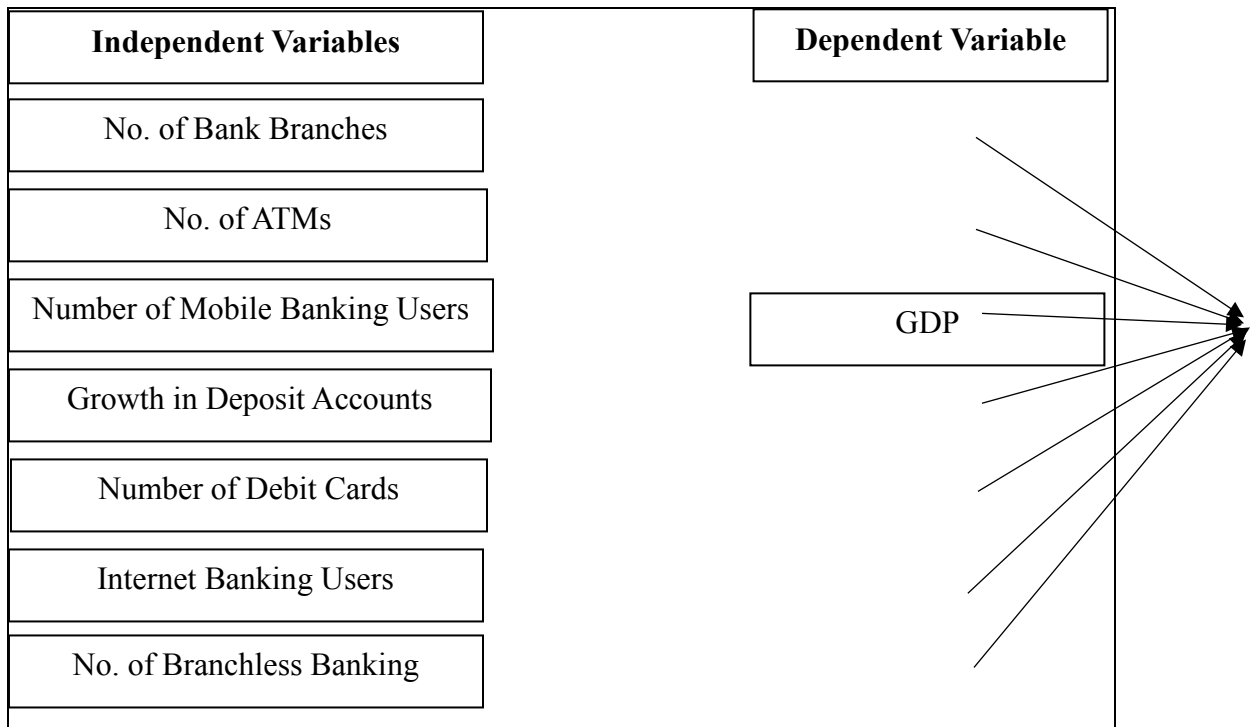
A research framework is a structure or a theoretical model that outlines the concepts, variables, and relationships involved in a research study or theoretical analysis. It provides a roadmap for understanding and organizing the key elements of the research topic or problem.

3.5.1 Research Framework

For this study, economic growth GDP are taken as dependent variable, while number of bank branches, number of ATMs, number of mobile banking users, growth in deposit accounts, number of debit cards, internet banking users and number of branchless banking as sub variables of digital financial inclusion are used as independent variables. These variables are derived from various empirical studies i.e., Iqbal and Sami (2017); Audi et al. (2019) and Gajurel (2022). The framework of the study is presented in Figure 1.

Figure 1

Research Framework



Sources: Iqbal and Sami (2017); Audi et al. (2019) and Gajurel (2022)

3.5.2 Definition of Variables

The definition of variables utilized in this study are presented below.

GDP growth

The impact of digital financial inclusion on GDP growth has been a focal point in contemporary research, with numerous studies shedding light on the intricate relationship between the two variables. Studies such as Ahmad et al. (2021) conducted in China reveal a significant positive effect of digital financial inclusion, encompassing various aspects like internet banking, mobile banking, and digitalization levels, on provincial economic growth. Additionally, Khera et al.'s (2021) global analysis underscores the positive association between digital financial inclusion and GDP per capita growth across developing countries. These findings collectively suggest that as nations embrace digital financial inclusion, offering services such as internet banking, mobile banking, and other technological advancements, they tend to experience positive economic growth. Policymakers and stakeholders are urged to prioritize strategies and policies that foster digital financial inclusion to harness its potential in driving sustained and robust GDP growth.

Number of Bank Branches

Iqbal and Sami (2017) assert that financial inclusion, measured by the number of bank branches, plays a pivotal role in catalyzing economic growth and reducing poverty. Their study on India reveals a positive relationship between the number of bank branches and GDP. This sentiment is echoed by Gourène and Mendy (2019) in their investigation within the West African Economic and Monetary Union, where they identify a bi-directional causality between economic growth and financial inclusion, represented by the overall rate of demographic penetration of financial services, including the presence of bank branches. These findings underscore the importance of physical banking infrastructure in fostering economic development. Moreover, Khara et al. (2021), in a global context, emphasize the positive association between digital financial inclusion, measured by the number of digital bank branches or online platforms, and GDP per capita growth. Collectively, these studies support the notion that an increased number of bank branches, whether traditional or digital, positively influences GDP growth by enhancing financial inclusion and accessibility.

Number of ATMs

The impact of the number of ATMs as a proxy for digital financial inclusion on GDP growth has been a subject of investigation in various studies. Iqbal and Sami's (2017) study on India reveals that while the number of bank branches positively influences GDP, the growth of ATMs shows an insignificant impact on the country's economic output. This observation suggests that, unlike traditional banking infrastructure, the proliferation of ATMs may not have a significant association with GDP growth. Moreover, Gourène and Mendy (2019) found in their West African Economic and Monetary Union study that the growth of ATMs had an insignificant impact on economic growth. These findings imply that the presence and expansion of ATMs, often considered a digital financial inclusion measure, may not exert a notable influence on GDP growth, highlighting the need for a more nuanced understanding of the role of ATMs in the broader context of economic development.

Number of Mobile Banking Users

The influence of the number of mobile banking users, as a proxy for digital financial inclusion, on GDP growth has garnered attention in recent research. Ahmad et al.

(2021) conducted a study in China, demonstrating that digital financial inclusion, measured by the breadth of coverage, depth of usage, and digitalization level, has a significant positive impact on provincial economic growth. Specifically, the study emphasizes the importance of mobile banking in driving economic expansion. Additionally, Khera et al.'s (2021) global analysis indicates a positive association between digital financial inclusion, represented by the number of mobile banking users, and GDP per capita growth across developing countries. These findings collectively suggest that the widespread adoption of mobile banking services contributes positively to GDP growth, highlighting the pivotal role of mobile-based financial inclusion in driving economic development.

Growth in Deposit Accounts

The growth of deposit accounts, often considered a proxy for digital financial inclusion, has been examined in the context of its impact on GDP growth. Gajurel (2022), in a study on Nepal, acknowledges the strong association between financial inclusion and economic growth, emphasizing the importance of policies promoting financial deepening and penetration. In a broader global perspective, Rekha et al. (2021) explores the relationships between financial inclusion, economic freedom, and financial development, revealing a positive long-term impact of digital financial inclusion, including growth in deposit accounts, on financial inclusion. These findings suggest that as the number of deposit accounts grows, reflecting an expansion in financial inclusion, it contributes positively to GDP growth. This underscores the significance of policies and initiatives that foster the growth of deposit accounts to enhance overall economic development.

Number of Debit Cards

The role of the number of debit cards, serving as a proxy for digital financial inclusion, in influencing GDP growth has been explored in recent research. Khera et al. (2021) conducted a global analysis, revealing a positive association between digital financial inclusion, measured by the number of debit cards, and GDP per capita growth across developing countries. The study emphasizes the importance of enhancing access to digital financial services, including the widespread adoption of debit cards, as a catalyst for economic development. Additionally, Charles et al. (2023) investigated the roles of digital finance and financial inclusion in the economic growth of COMESA member states, finding that various aspects of digital finance,

including digital card ownership, significantly contribute to economic growth. These findings collectively suggest that an increased number of debit cards, indicative of broader access to digital financial services, positively influences GDP growth, highlighting the integral role of debit cards in fostering economic development.

Internet Banking Users

The impact of the number of internet banking users, serving as a proxy for digital financial inclusion, on GDP growth has been investigated in scholarly studies. Ahmad et al. (2021) conducted a study in China, demonstrating a significant positive effect of digital financial inclusion, including internet banking usage, on provincial economic growth. The findings highlight the importance of internet banking services as a contributor to economic expansion. Moreover, Yaqin and Safaun's (2023) research across developing countries emphasizes that the inclusion of digital finance, particularly internet banking, positively influences GDP growth. These studies collectively suggest that the growing number of internet banking users, indicative of increased access to digital financial services, plays a crucial role in fostering economic development and contributing positively to GDP growth.

No. of Branchless Banking

The influence of the number of branchless banking services, considered a proxy for digital financial inclusion, on GDP growth has been examined in recent research. Gajurel (2022) studied the relationship between financial inclusion and economic growth in Nepal, recognizing the strong association and emphasizing the importance of policies promoting financial deepening and penetration. In a broader global context, Khera et al. (2021) explored the drivers of digital financial inclusion, finding a positive association between branchless banking services and GDP per capita growth across developing countries. The study underscores the role of branchless banking in enhancing access to financial services, contributing positively to economic development. These findings collectively suggest that an increased prevalence of branchless banking services, indicative of expanded digital financial inclusion, positively impacts GDP growth, emphasizing the pivotal role of branchless banking in driving economic development.

CHAPTER IV

RESULTS AND DISCUSSION

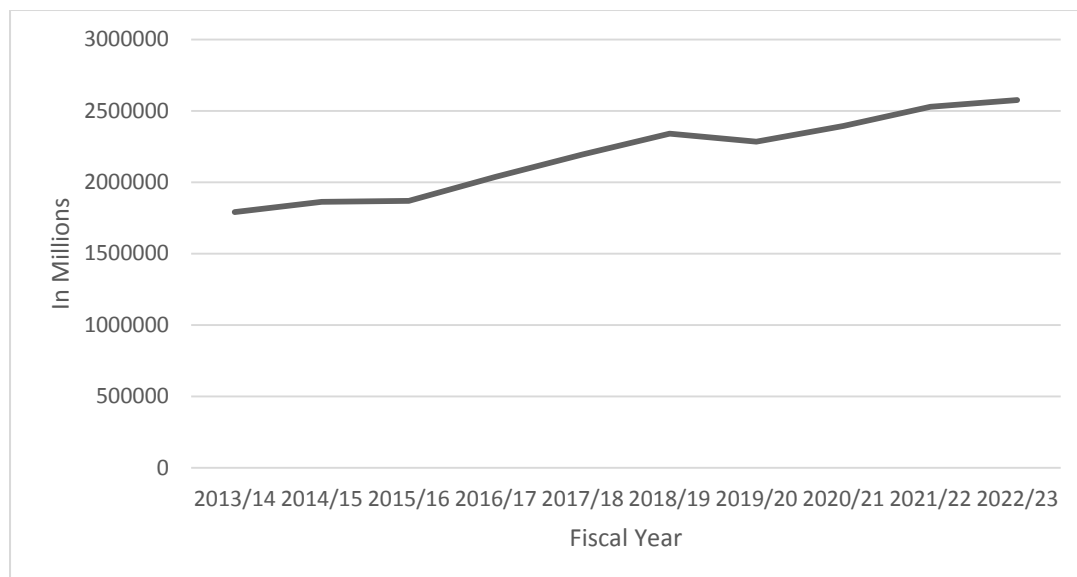
This chapter explores the examination of the influence of digital financial inclusion on economic growth, utilizing GDP as the dependent variable. The chapter aims to assess the impact of several factors, including the quantity of bank branches, ATMs, mobile banking users, deposit accounts, debit cards, internet banking users, and branchless banking services, on economic growth. The results and discussion sections analyze and combine these data, providing valuable understanding of how digital financial inclusion contributes to the promotion of economic development.

4.1 Results

The results section of this chapter investigates the correlation between digital financial inclusion and economic growth. It specifically analyzes the impact of different indicators of financial inclusion, such as the quantity of bank branches, ATMs, mobile banking users, deposit accounts, debit cards, internet banking users, and branchless banking services, on GDP. The study is organized in such a way that it first presents a comprehensive review of the trends in these variables, emphasizing their gradual increase over a period of time. Subsequently, a descriptive analysis is conducted to describe the key patterns and distribution of the data, so offering a full comprehension of the present condition of digital financial inclusion. Correlation analysis is then used to evaluate the magnitude and orientation of the associations between the independent variables and GDP, providing first understanding of the interconnectedness of these elements. Ultimately, regression analysis is conducted to ascertain the influence of each digital financial inclusion indicator on economic development, pinpointing the most critical factors that drive GDP.

4.1.1 Trend of GDP Growth

GDP growth patterns provide a fundamental framework for understanding the entire economic environment in which digital financial inclusion projects operate. GDP growth is one important macroeconomic metric that shows the state of a country's economy. Through an analysis of this pattern, the chapter aims to provide a baseline knowledge of economic development across time, therefore stressing times of acceleration or regression in growth. This background is very important, as it helps us assess whether the spread of digital financial services including mobile banking and internet banking may coincide with or cause economic development. The GDP growth of the country during the ten years of the study period is presented in Figure 2.

Figure 2*Trend of GDP Growth*

Source: Appendix i

Figure 2 shows the trend of GDP of Nepal from FY 2013/14 to FY 2022/23 which grew steadily from NPR 1,791,140.758 million in 2013/14 to NPR 2,576,250.509 million in 2022/23. This represents a compounded growth of over 43% during the ten-year period. Such an increase in real GDP highlights sustained economic expansion, despite global and regional challenges such as natural disasters and economic shocks. The rise in GDP reflects the broader impact of digital financial inclusion initiatives, which have likely contributed by improving access to financial resources, encouraging savings and investment, enhancing productivity, and fostering economic activities across both rural and urban regions. The relationship between economic growth and digital financial inclusion can be linked to more efficient financial transactions, reduced barriers to accessing financial services, and improved financial literacy. As more people gain access to mobile banking, internet banking, and other digital platforms, they can participate more actively in the economy, thus driving overall growth.

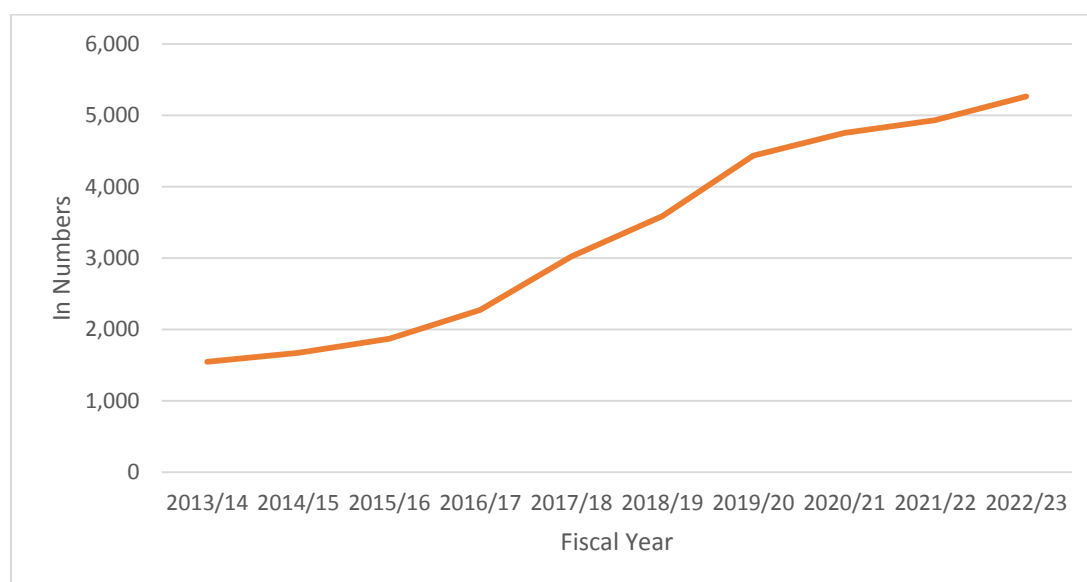
4.1.2 Trend of Number of Bank Branches

The increase in bank branches provides an important context for appreciating the growth of conventional banking infrastructure and its role in supporting financial inclusion. Particularly in underdeveloped countries, bank branches have long been the main point of entry for financial services. Examining the trend in the number of bank

branches helps the chapter gain a better understanding of how the physical availability of banking services has changed over time, particularly in rural and underprivileged areas. The degree of financial inclusion depends on this backdrop, as more bank branches usually indicate better access to banking services for a larger spectrum of the population. Figure 3 shows the trend of number of bank branches within a country during the ten years of the study period.

Figure 3

Trend of Number of Bank Branches



Source: Appendix i

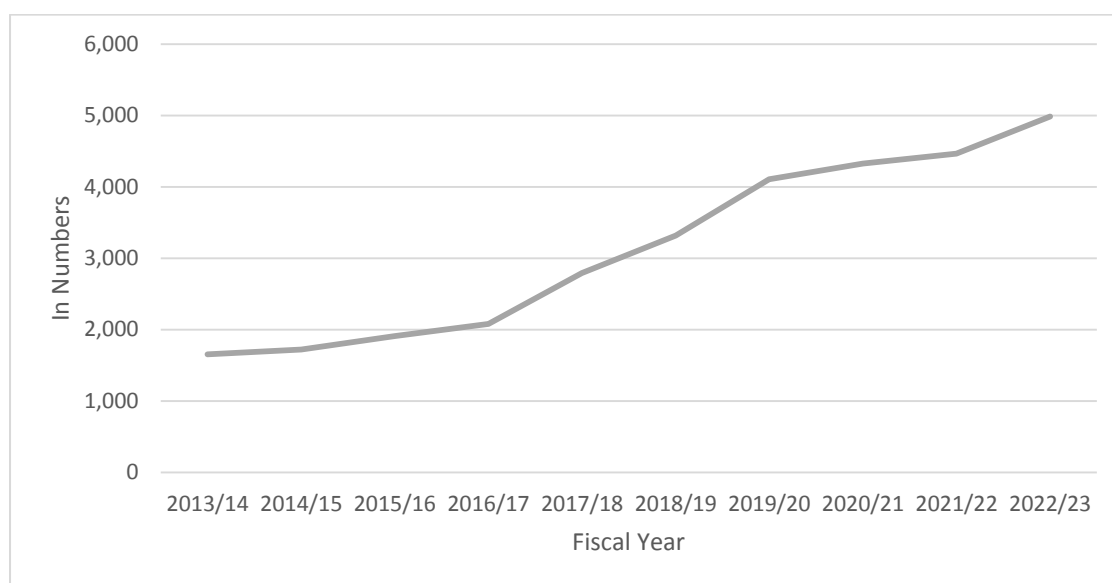
Figure 3 shows the number of bank branches in Nepal increased significantly from 1,547 in FY 2013/14 to 5,264 in FY 2022/23, representing a growth of over 240%. This dramatic increase in physical banking infrastructure is critical for promoting financial inclusion, as bank branches are often the first point of contact for individuals and businesses seeking formal financial services. While digital platforms have expanded access to banking services, the role of physical branches in offering personalized services, educating customers on financial products, and establishing trust should not be underestimated. The growth in bank branches suggests a balanced approach to financial inclusion, where both traditional and digital banking infrastructure complement each other. This hybrid model ensures that even in regions with limited digital penetration, people can access banking services.

4.1.3 Trend of Number of ATMs

Number of ATMs provides a vital background on the expansion of automated banking services, which have become pillars of current financial inclusion plans. Without visiting a bank office, ATMs provide people a handy and accessible way to do basic banking operations like money transfers, account balance searches, and cash withdrawals. This trend study underscores the expansion of self-service banking options, especially in regions with a limited number of bank branches. The growing number of ATMs demonstrates the banking industry's efforts to increase consumer convenience and service delivery, thus supporting the general aim of financial inclusion by enabling more people to use banking services. Figure 4 shows the trend of number of ATMs within a country during the ten years of the study period.

Figure 4

Trend of Number of ATMs



Source: Appendix i

Figure 4 depicts the trend of the number of ATMs which grew from 1,652 in FY 2013/14 to 4,987 in FY 2022/23, marking a 200% increase. The expansion of ATM networks plays a crucial role in facilitating access to cash and enabling financial transactions outside of traditional banking hours. ATMs act as a bridge between the physical and digital realms of banking, offering convenience and access to funds in regions where bank branches may not be available. The growing presence of ATMs enhances financial accessibility, particularly in remote or rural areas where access to physical branches is limited. It also supports the shift toward cashless transactions,

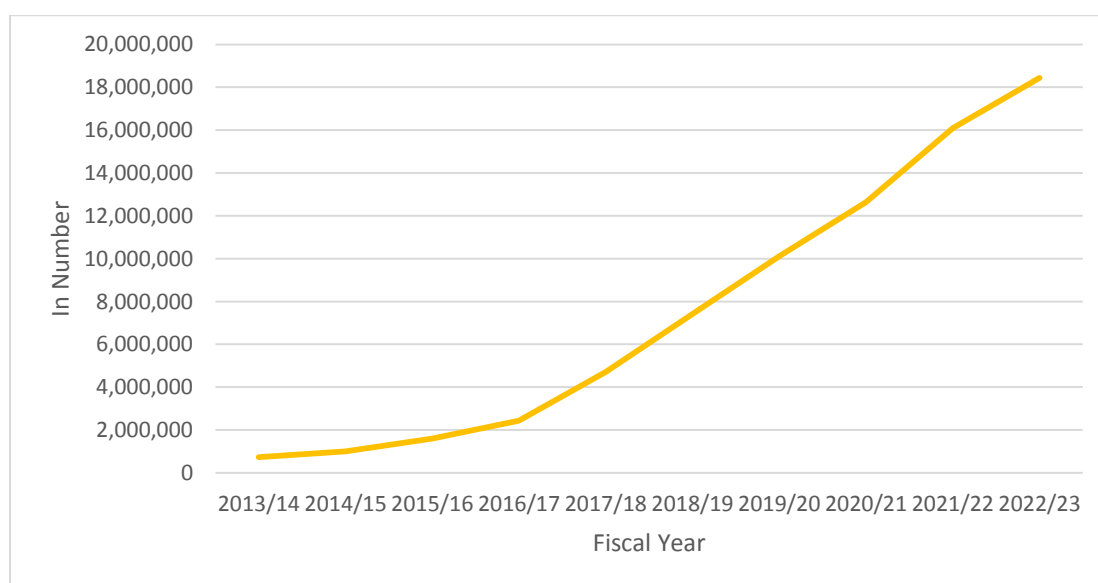
enabling people to withdraw money from digital accounts and promoting financial mobility, thus contributing to the broader goals of digital financial inclusion and economic growth.

4.1.4 Trend of Number of Mobile Banking Users

Mobile banking users provides a necessary backdrop for the digital revolution in financial services and its influence on financial inclusion. Offering a degree of ease and accessibility not matched by conventional banking systems, mobile banking has transformed the way consumers access and handle their money. Particularly in regions with limited access to physical banking infrastructure, the rapid increase in mobile banking users underscores the increasing reliance on digital platforms for conducting financial transactions. Understanding the larger movement toward digital financial inclusion depends on this foundation, as mobile banking lets consumers do a variety of banking operations from bill payments to money transfers directly from their cellphones. This section's trend analysis prepares one to investigate how the spread of mobile banking, by including more people in the official financial system, is supporting economic development. Figure 5 shows the trend of number of mobile banking users during the ten years of the study period.

Figure 5

Trend of Number of Mobile Banking Users



Source: Appendix i

Figure 5 shows that mobile banking users surged dramatically, from 728,424 in FY 2013/14 to 18,438,455 in FY 2022/23, representing a nearly 25-fold increase. This

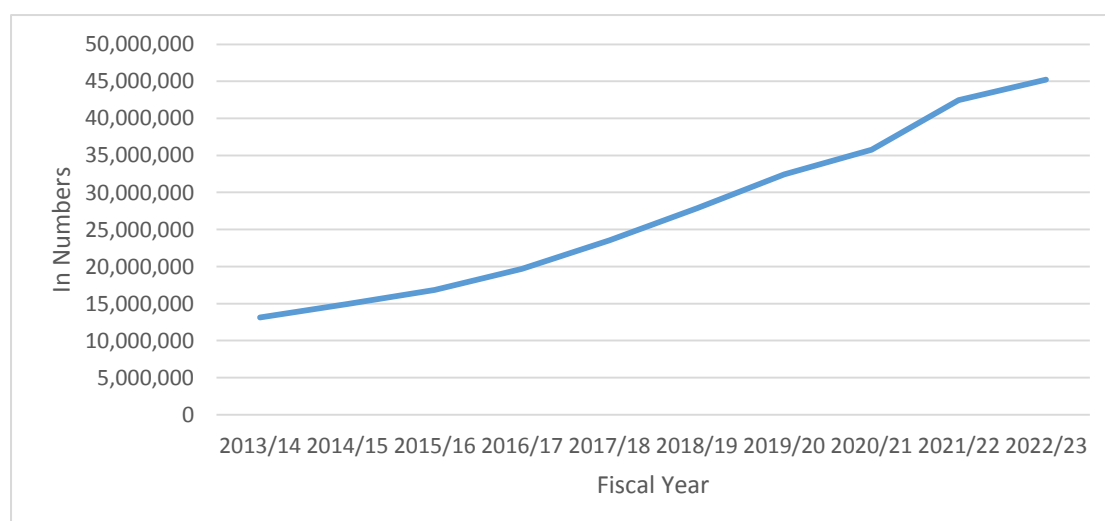
growth reflects the transformative impact of mobile technology in the financial sector, making banking services accessible to a much larger portion of the population. Mobile banking is especially beneficial for rural and underserved communities, where access to traditional banking infrastructure is limited. By enabling users to perform financial transactions, such as money transfers, bill payments, and balance inquiries through mobile phones, mobile banking has empowered individuals and small businesses to participate more fully in the economy. The rise in mobile banking users highlights the crucial role of digital platforms in expanding financial inclusion and driving economic growth, as more people are able to save, invest, and transact efficiently.

4.1.5 Trend of Growth in Deposit Accounts

Deposit account growth offers significant background information to help one better grasp the degree of formal banking sector participation by people and companies. Deposit accounts are a basic element of financial inclusion; they provide a means of access for many to the official financial system. The expansion in deposit accounts reflects growing public confidence in the banking system and a higher inclination to save and handle official sector funds. Examining this trend helps the chapter explain how the expansion of deposit accounts supports economic stability and growth, since more efficient capital allocation and more financial resources for investment and development usually follow from more participation in the official banking sector. Figure 6 presents the trend of growth in deposit accounts during the ten years of the study period.

Figure 6

Trend of Growth in Deposit Accounts

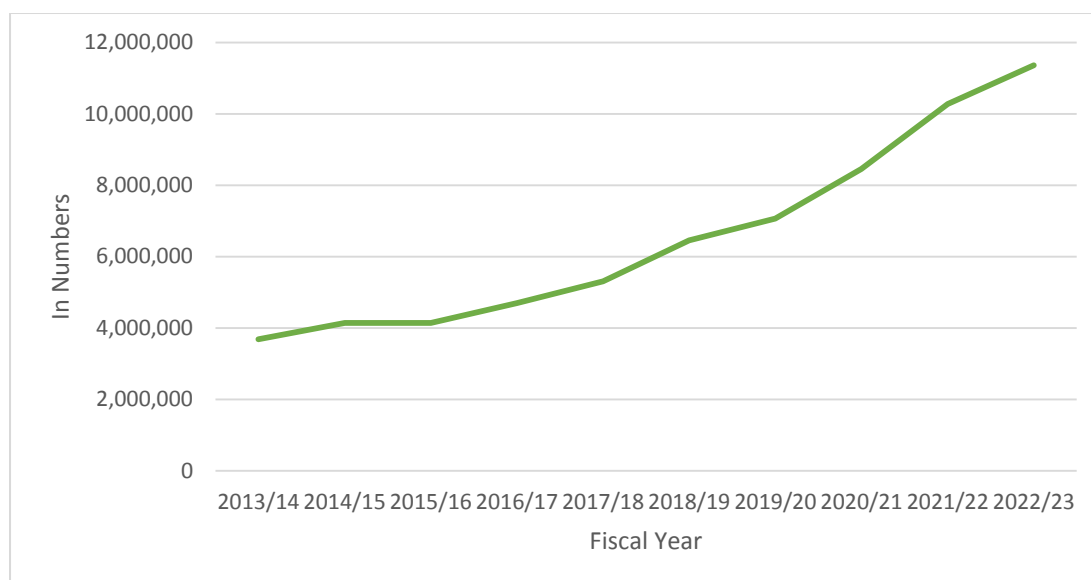


Source: Appendix i

Figure 6 presents the number of deposit accounts increased from 13,129,574 in FY 2013/14 to 45,231,458 in FY 2022/23, representing more than a threefold increase. This trend is a clear indicator of rising financial inclusion, as more individuals and businesses engage with the formal financial system. The increase in deposit accounts reflects a growing culture of saving, which is essential for financial stability and economic growth. Deposit accounts are often the entry point into the formal financial system, offering individuals a safe place to store money, earn interest, and access credit facilities. The rise in deposit accounts indicates that more people are choosing to save within the formal banking system rather than relying on informal savings methods, which are often riskier and less efficient. This growth can be attributed to both the expansion of traditional banking infrastructure and the rise of digital financial services, such as mobile banking, that make it easier for people to open and maintain bank accounts.

4.1.6 Trend of Number of Debit Cards

The increase in the number of debit cards issued provides a necessary foundation for understanding the shift towards cashless transactions and the growing use of electronic payment systems. Since they provide a safe and practical method for people to access their money and make transactions without depending on cash, debit cards are a significant instrument in encouraging financial inclusion. The increasing number of debit cards reflects the banking industry's efforts to increase financial services accessibility and promote the use of official banking channels for everyday transactions. This trend analysis contextualizes the larger shift towards electronic payments, which is a necessary component of contemporary financial inclusion policies. Expanding the usage of debit cards aids financial institutions in fostering the development of a more inclusive and effective financial ecosystem, reducing reliance on cash, and facilitating increased financial involvement. Figure 7 shows the trend of number of debit cards during the ten years of the study period.

Figure 7*Trend of Number of Debit Cards*

Source: Appendix i

Figure 7 shows the number of debit cards issued grew from 3,688,779 in FY 2013/14 to 11,358,426 in FY 2022/23. Debit cards facilitate cashless transactions and provide users with easy access to their funds without needing to visit a bank branch. This increase in debit card usage reflects a shift toward a more cashless economy, where individuals can pay for goods and services electronically. The widespread use of debit cards is an essential component of digital financial inclusion. By reducing the reliance on cash, debit cards help to lower transaction costs, increase security, and improve the efficiency of financial transactions. The growing use of debit cards, in conjunction with mobile and internet banking, supports the development of a more sophisticated and inclusive financial ecosystem that drives economic growth.

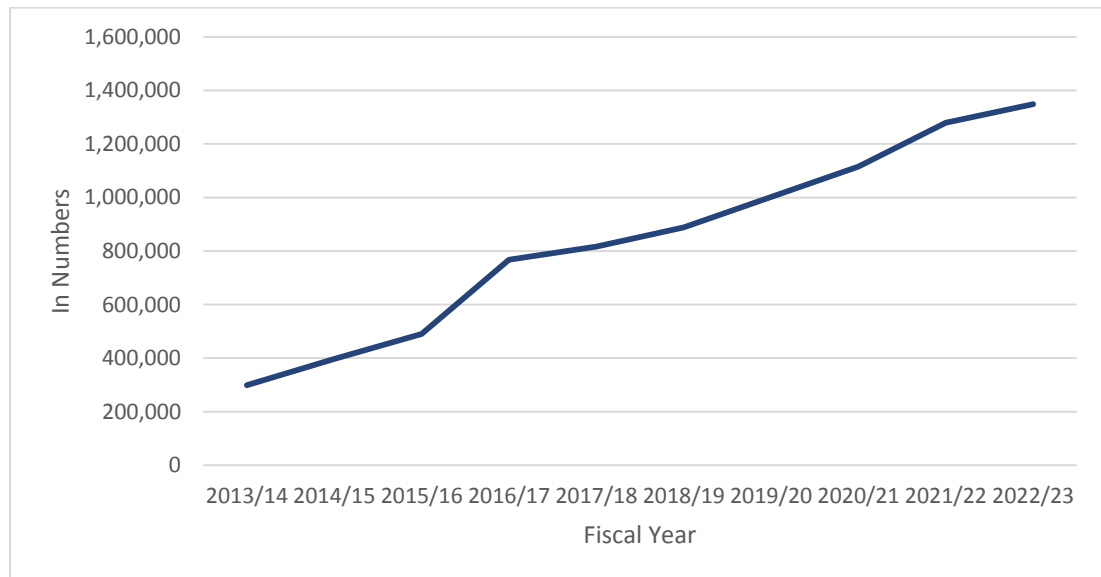
4.1.7 Trend of Internet Banking Users

Continuous digital change in the banking industry depends on the background that online banking customers provide. Internet banking allows consumers to access a wide range of financial services online, from account balance monitoring to cash transfers and bill payment processing. Reflecting larger trends in consumer behavior and technological adoption, the rising number of online banking users emphasizes the growing inclination for digital channels over conventional banking methods. Understanding how digital financial inclusion is changing depends on this trend, as online banking provides a flexible and quick way for people to handle their money,

especially in areas where access to physical banking infrastructure may be restricted. Through an analysis of this trend, the chapter offers background for how the move toward digital banking is enabling wider financial inclusion and boosting economic development by increasing the availability and simplicity of financial products. The trend of internet banking users during the ten years of the study period is presented in Figure 7.

Figure 8

Trend of Internet Banking Users



Source: Appendix i

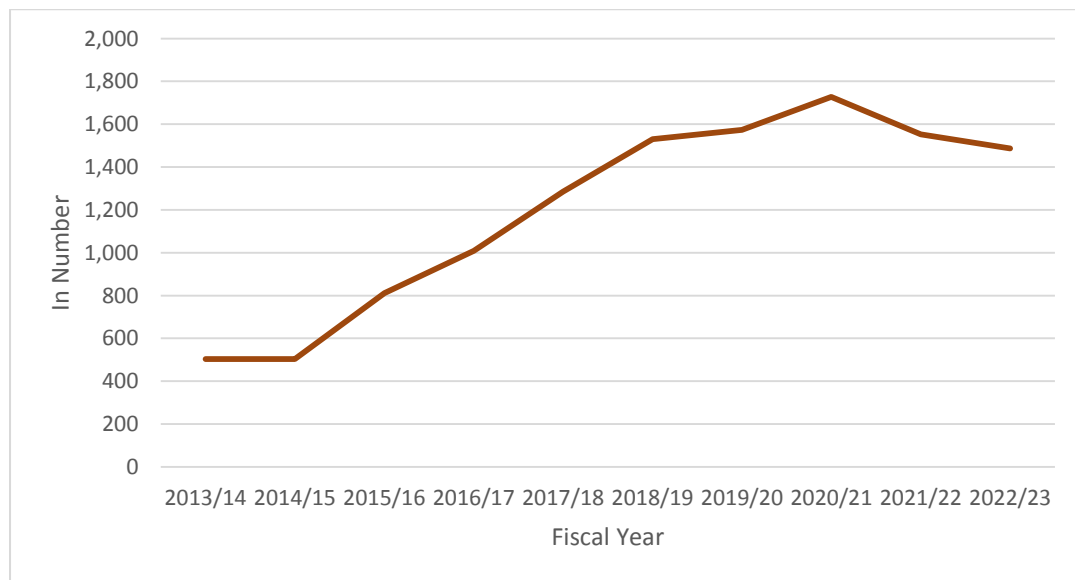
Figure 8 presents the internet banking users grew steadily from 298,434 in FY 2013/14 to 1,347,970 in FY 2022/23. Although the number of internet banking users is smaller compared to mobile banking, the trend shows a growing preference for internet-based financial services. Internet banking allows users to perform a wide range of transactions, such as fund transfers, utility payments, and loan management, from the comfort of their homes or offices. Internet banking is particularly attractive to businesses and individuals with regular access to computers or smart devices, offering a more comprehensive range of services than mobile banking alone. The rise in internet banking users suggests that digital financial inclusion is not limited to mobile banking; rather, it encompasses a broad spectrum of digital platforms that cater to different user needs.

4.1.8 Trend of Number of Branchless Banking

The growth in the number of branchless banking outlets provides a necessary context for comprehending alternative financial service delivery methods that are fundamental to improving financial inclusion in rural and underdeveloped locations. Branchless banking which runs through agents, mobile platforms, or other non-traditional channels has become more important for providing financial services to populations not sufficiently covered by traditional bank branches. The expansion of branchless banking reflects efforts to eliminate geographical barriers and reduce the cost of financial services, thereby facilitating access to people in remote and difficult-to-reach areas. This trend plays a crucial role in paving the way for innovative approaches to integrate more people into the official financial system, thereby promoting financial inclusion and providing access to essential banking services, ultimately boosting economic growth. The trend of branchless banking services during the ten years of the study period is presented in Figure 8.

Figure 9

Trend of Number of Branchless Banking



Source: Appendix i

Figure 9 presents the branchless banking points grew modestly, from 504 in FY 2013/14 to 1,487 in FY 2022/23. Branchless banking services, which allow financial transactions to take place without the need for a physical bank branch, play an essential role in reaching underserved and remote areas. These services are often delivered through agents equipped with mobile or digital devices that can connect to

the central banking system, enabling deposits, withdrawals, and money transfers. Branchless banking complements the broader digital financial inclusion strategy by ensuring that even the most remote areas have access to financial services. The relatively slower growth in branchless banking compared to other digital channels may be attributed to the challenges of infrastructure development in remote regions. However, its importance in achieving full financial inclusion cannot be overstated, as it allows marginalized populations to access the formal financial system.

4.1.9 Descriptive Analysis

Descriptive analysis has its ability to summarize the main characteristics of the variables under study thus providing a complete picture of the data. A descriptive study clarifies the distribution, central trends, and variability of both dependent and independent variables i.e., GDP growth, number of bank branches, ATMs, mobile banking users, and more in the framework of digital financial inclusion and economic development. This study sets the scene before delving into more intricate statistical methods as it provides a first look at the data and points out trends and any possible outliers. Crucially for guiding later correlation and regression analysis the descriptive statistics provide a picture of the data that permits an initial interpretation of how the variables behave and interact. Table 2 presents the descriptive results of study variables.

Table 2

Summary of Descriptive Analysis

	N	Min	Max	Mean	SD	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Std.	Std.	Statistic	Statistic
GDP	10	1791140.76	2576250.51	2188031.8608	284621.59769	-.126	.687	-1.497	1.334
BB	10	1547.00	5264.00	3335.3000	1448.57110	.033	.687	-1.881	1.334
ATMs	10	1652.00	4987.00	3135.1000	1270.22802	.146	.687	-1.813	1.334
MBU	10	728424.00	18438455.007517018.4000	6523498.67172	.568	.687	-1.176	1.334	
DA	10	13129574.0045231458.0027189226.400011474392.70914.368				.687	-1.281	1.334	
DC	10	3688779.00	11358426.006558847.3000	2700977.98322	.766	.687	-.711	1.334	
IBU	10	298434.00	1347970.00	840077.4000	361209.62570	-.143	.687	-1.132	1.334
BRB	10	504.00	1727.00	1198.4000	459.09602	-.614	.687	-1.286	1.334

Source: NRB Reports and SPSS Output

Table 2 shows the descriptive analysis results of study variables. Real GDP (Gross Domestic Product) expressed in millions of NPR varied from NPR 1,791,140.76 million to NPR 2,576,250.51 million during the observed period. The mean value of NPR 2,188,031.86 million indicates the average economic output across the ten-year span. The relatively moderate standard deviation of NPR 284,621.60 million suggests that there was some fluctuation in the economic output, but the overall growth trajectory remained relatively stable. The skewness of -0.126 indicates a slight skew to the left, and the kurtosis of -1.497 suggests a relatively flat distribution compared to a normal distribution. These figures illustrate that the country experienced an overall upward trend in economic activity, reflecting improvements in various sectors contributing to GDP growth.

Bank branches (BB) which represent the total number of commercial bank branches operating, ranged from 1,547 to 5,264 over the observed period. The mean number of bank branches was 3,335.30, with a high standard deviation of 1,448.57, which suggests significant variation and expansion over time. The skewness of 0.033 indicates a nearly symmetric distribution, and the kurtosis of -1.881 suggests a relatively flat distribution. The large standard deviation indicates that the number of branches was not uniform throughout the period and saw substantial increases, possibly reflecting efforts by banks to extend their services across a wider geographic area, particularly in response to growing demand for financial services and the push for greater financial inclusion.

Automated teller machines (ATMs) ranged from a minimum of 1,652 to a maximum of 4,987. On average, there were 3,135.10 ATMs, with a standard deviation of 1,270.23, showing substantial variability in ATM deployment across the country. The skewness of 0.146 indicates a nearly symmetric distribution, and the kurtosis of -1.813 suggests a relatively flat distribution. The variation in the number of ATMs reflects the expansion of banking infrastructure to provide greater access to banking services in both urban and rural areas. The relatively high standard deviation signifies that the growth in the number of ATMs was not consistent across all regions, possibly influenced by differences in population density, urbanization, and financial literacy levels.

Mobile banking users (MBU) showed a remarkable range from a minimum of 728,424 users to a maximum of 18,438,455 users, indicating a dramatic increase in mobile banking adoption. The mean number of mobile banking users was 7,517,018.40, with a high standard deviation of 6,523,498.67, reflecting the significant rise in users over time. The skewness of .568 indicates a moderate skew to the right, and the kurtosis of -1.176 suggests a relatively flat distribution. The large spread indicates that mobile banking saw exponential growth, particularly as mobile technology and internet connectivity improved. The rapid adoption of mobile banking services aligns with global trends toward digital banking, where convenience and access to financial services via mobile devices have revolutionized how people engage with the banking sector.

Deposit accounts (DA) ranged from 13,129,574 to 45,231,458 accounts, with an average of 27,189,226.40 deposit accounts during the observed period. The large standard deviation of 11,474,392.71 highlights significant variability in the number of accounts across the years. The skewness of .368 indicates a slight skew to the right, and the kurtosis of -1.281 suggests a relatively flat distribution. This variation suggests that there were periods of rapid growth in the number of deposit accounts, likely driven by increasing financial inclusion initiatives, urbanization, and the expansion of banking services in rural areas. The substantial increase in deposit accounts is indicative of greater public confidence in the banking sector and growing participation in formal financial systems.

Debit card holders (DC) had a minimum of 3,688,779 and a maximum of 11,358,426 holders, with an average of 6,558,847.30 debit card holders. The standard deviation of 2,700,977.98 points to a notable degree of variability in debit card adoption over the years. The increasing number of debit card holders reflects the population's growing reliance on cashless transactions, driven by the increased availability of ATMs and point-of-sale (POS) terminals. The skewness of .766 indicates a moderate skew to the right, and the kurtosis of -.711 suggests a relatively flat distribution. The increasing number of debit card holders reflects the population's growing reliance on cashless transactions, driven by the increased availability of ATMs and point-of-sale (POS) terminals. The spread suggests that as banking infrastructure improved, so did the adoption of debit cards, enabling individuals to make electronic payments and reducing their dependency on cash.

Internet banking users (IBU) ranged from 298,434 to 1,347,970 users, with an average of 840,077.40 users. The standard deviation of 361,209.63 demonstrates that internet banking usage saw a consistent upward trend but with some variability. The skewness of -0.143 indicates a nearly symmetric distribution, and the kurtosis of -1.132 suggests a relatively flat distribution. This reflects the growing trend of digitalization within the banking sector, where more people have gained access to online banking platforms. The increase in internet banking users indicates a shift toward more sophisticated banking tools, driven by technological advancements and a broader desire for more convenient and efficient banking services.

Branchless banking (BRB), which represents the number of branchless banking service points, ranged from a minimum of 504 to a maximum of 1,727. The average number of branchless banking units was 1,198.40, with a standard deviation of 459.10. The skewness of -0.614 indicates a moderate skew to the left, and the kurtosis of -1.286 suggests a relatively flat distribution. This suggests moderate variability in the expansion of branchless banking services. Branchless banking allows customers to access basic banking services without visiting a physical branch, typically through agents or mobile platforms. The growth in the number of branchless banking units reflects efforts to extend banking services to underserved and remote areas, helping to bridge the gap in financial inclusion for populations with limited access to traditional bank branches. The increase also aligns with national initiatives aimed at expanding financial services through innovative, cost-effective means.

4.1.10 Correlation Analysis

In this study correlation analysis examine variables the number of bank branches, ATMs, mobile banking users, and other indicators of digital financial inclusion in relation to GDP thereby revealing economic development. This study provides a fundamental understanding of the linear relationships between the dependent and independent variables facilitating the identification of correlations between variations in one variable and movements in another. Understanding these connections helps correlation analysis to indicate which factors could have the biggest influence on economic development hence enabling further in-depth investigations, including regression. Table 3 shows the relationship between dependent and independent variables under the study.

Table 3*Correlation Analysis*

	GDP	BB	ATMs	MBU	DA	DC	IBU	BRB
GDP	1	.981**	.974**	.987**	.986**	.967**	.966**	.918**
BB		1	.997**	.996**	.990**	.960**	.960**	.937**
ATMs			1	.990**	.989**	.969**	.939**	.913**
MBU				1	.993**	.960**	.976**	.949**
DA					1	.985**	.965**	.907**
DC						1	.919**	.829**
IBU							1	.952**
BRB								1

** indicate correlation is significant at 5% level of significance (Sig Two Tailed)

Table 3 the Pearson correlation coefficient between GDP and each of the independent variables suggests a very strong positive relationship. The correlation between GDP and bank branches (BB) is 0.981, which indicates an extremely strong positive relationship. As the number of bank branches increases, GDP also tends to rise. This correlation is statistically significant, with a p-value of 0.000, confirming the strength of this relationship.

The correlation between GDP and ATMs is 0.974, indicating a very strong positive relationship. A higher number of ATMs is associated with an increase in GDP. The p-value of 0.000 shows that this relationship is also statistically significant. Mobile banking users (MBU) also shows a very strong correlation with GDP, with a Pearson correlation of 0.987. This means that as mobile banking usage grows, GDP tends to increase significantly. The p-value of 0.000 further confirms the significance of this relationship.

The correlation between GDP and deposit accounts (DA) is 0.986, demonstrating another very strong positive relationship. An increase in the total deposit accounts is associated with an increase in GDP, with a statistically significant p-value of 0.000. The debit card holders (DC) have a Pearson correlation of 0.967 with GDP,

suggesting a strong positive association. As the debit card holders rises, so does GDP, with the relationship being statistically significant (p-value = 0.000).

The correlation between GDP and internet banking users (IBU) is 0.966, showing a very strong positive relationship. An increase in internet banking users is closely associated with an increase in GDP. This relationship is also statistically significant with a p-value of 0.000. Finally, branchless banking services (BRB) have a Pearson correlation of 0.918 with GDP, indicating a strong positive relationship. This suggests that as branchless banking services expand, GDP tends to grow as well, with a p-value of 0.000, making the relationship statistically significant. Given that all the independent variables show very strong correlations with GDP. In the next step, regression analysis is performed.

4.2 Discussions

This study explored the role of digital financial services in enhancing financial inclusion and their impact on the economic growth of Nepal, specifically focusing on three primary objectives: (i) to assess the current state of bank branches, ATMs, mobile banking users, deposit account growth, debit card usage, internet banking users, and branchless banking relate to Nepal's GDP and (ii) to examine the relationship between the number of bank branches, ATMs, mobile banking users, growth in deposit accounts, debit card usage, internet banking users, branchless banking and Nepal's GDP. The findings of this research provide important insights into the ways in which digital financial services are shaping Nepal's financial landscape and driving economic progress.

Financial inclusion, the process of making financial services accessible and affordable to all individuals and businesses, particularly those traditionally excluded from the formal financial sector, is essential for promoting economic growth and reducing inequality. This study revealed that digital financial services are playing a transformative role in this regard. Mobile banking, internet banking, and branchless banking have emerged as significant drivers of financial inclusion in Nepal. Mobile banking, in particular, allows individuals to access banking services without needing to visit a physical bank branch, enabling previously unbanked populations in remote and rural areas to participate in the formal economy. The widespread adoption of mobile banking users (MBU) shows how technology has enabled the extension of

financial services to underserved regions. Similarly, the rise in internet banking users (IBU) illustrates how digital platforms are making it easier for people to manage their finances, conduct transactions, and save money all essential components of financial inclusion.

The study's second objective was to investigate the correlation between various financial service indicators including the number of bank branches, ATMs, mobile banking users, growth in deposit accounts, debit card usage, internet banking users, and branchless banking and Nepal's GDP.

The study revealed strong positive relationships between digital financial services and traditional banking infrastructure with GDP growth in Nepal. Specifically, bank branches (BB) showed a very strong positive relationship with GDP, which is consistent with Ain et al. (2020). Ain et al. highlighted the role of financial inclusion in enhancing economic growth, alleviating poverty, generating employment, and reducing income inequality in developing countries. Their research found that financial inclusion positively impacts economic growth, supporting this study's findings that increased bank branches contribute significantly to GDP growth in Nepal.

Similarly, the strong positive correlation between ATMs and GDP aligns with Thaddeus et al. (2020). Thaddeus et al. examined the long-run causal effect of digital financial inclusion on economic growth in sub-Saharan Africa and found a significant relationship between digital financial inclusion indicators, including ATMs, and economic growth. Their study emphasized that the expansion of digital financial services, such as ATMs, plays a crucial role in economic development, mirroring the findings of this study in Nepal.

Mobile banking users (MBU) exhibited a very strong positive relationship with GDP in this study, aligning with Khera et al. (2021). Khera et al. investigated the impact of digital financial inclusion on economic growth in 52 developing countries and found a positive association between digital financial inclusion and GDP growth. They identified mobile banking as a key driver of financial inclusion, supporting the finding that mobile banking adoption significantly contributes to economic progress in Nepal.

The positive relationship between deposit accounts (DA) and GDP observed in this study is consistent with Ahmad et al. (2021). Ahmad's research on China highlighted

the significant positive effects of digital financial inclusion and human capital on provincial economic growth. The study recommended investments in human capital development alongside efforts to enhance digital financial inclusion, emphasizing the importance of deposit accounts in promoting economic growth.

Debit card holders (DC) showed a strong positive association with GDP, which is consistent with Shrestha (2020). Shrestha provided a comprehensive analysis of financial inclusion in Nepal, highlighting the progress made and the existing gaps in access, usage, and adoption of financial services. The study emphasized the importance of modern financial services, such as debit cards, in promoting financial inclusion and economic development, supporting this study's findings on the positive impact of debit card adoption on GDP.

Internet banking users (IBU) also showed a strong positive relationship with GDP, aligning with Ain et al. (2020) and Khera et al. (2021). Ain et al. emphasized the positive impact of financial inclusion on economic growth, while Khera et al. highlighted the role of digital financial services, including internet banking, in accelerating economic growth. Both studies support the finding that increased internet banking usage contributes to GDP growth.

Finally, the strong positive relationship between branchless banking services (BRB) and GDP reflects findings from Thaddeus et al. (2020) and Ahmad et al. (2021). Thaddeus et al. identified branchless banking as an essential component of digital financial inclusion that supports economic growth in sub-Saharan Africa. Similarly, Ahmad et al. emphasized the importance of branchless banking in enhancing financial inclusion and supporting economic development in China.

The positive correlations observed in this study are consistent with the findings of previous research, reinforcing the importance of both traditional and digital financial services in promoting economic growth and financial inclusion. The alignment of these results with existing literature underscores the critical role of financial infrastructure in fostering economic progress and highlights the need for targeted policy interventions to maximize the impact of financial inclusion initiatives.

CHAPTER V

SUMMARY AND CONCLUSION

5.1 Summary

To revolutionize the financial landscape by increasing accessibility, efficiency, and transparency, digital financial inclusion has emerged as a vital driver of economic development in Nepal. This has resulted in the market's transformation. Digital banking services like mobile banking, branchless banking, and automated teller machines (ATMs) have made an increase in financial inclusion possible. These services have enabled previously underserved individuals to engage with the financial system. This move not only empowers individuals and small businesses by providing essential financial services, but also boosts economic activity by increasing liquidity, promoting savings, and enabling investment opportunities. Geographical constraints and a limited physical banking infrastructure provide considerable hurdles in Nepal; thus, digital financial inclusion plays an essential role in overcoming these gaps and encouraging economic growth in the country.

This study tackles the pressing need to get a better understanding of the ways in which the inclusion of digital financial services affects economic development in Nepal. Despite the rapid spread of digital financial services, there is a dearth of detailed studies on the precise influence that these services have on GDP and overall economic performance. The purpose of this research is to give significant insights into the efficiency of different digital interventions by concentrating on the correlations between various digital financial services and economic development. These services include branchless banking, automated teller machines, mobile banking users, and online banking. For policymakers, financial institutions, and development organizations to be able to devise focused policies that harness digital financial inclusion as a tool for sustainable economic growth and equitable development, it is essential for them to have a solid understanding of these processes.

The study employs a descriptive and causal research design, utilizing secondary data from government agencies and international databases spanning fiscal years 2013/14 to 2022/23. The methodology includes trend analysis, descriptive statistics, correlation analysis. Key variables include the number of bank branches, ATMs, mobile banking users, growth in deposit accounts, debit cards, internet banking users, and branchless banking services. This systematic approach aims to provide a comprehensive understanding of how digital financial services influence economic growth in Nepal.

Major findings reveal the Pearson correlation coefficients between GDP and various independent variables, suggesting very strong positive relationships. Bank branches (BB) have an extremely strong positive correlation with GDP (0.981), as does the number of ATMs (0.974), both with a statistically significant p-value of 0.000. Mobile banking users (MBU) show the highest correlation with GDP (0.987), further confirmed by a p-value of 0.000. Deposit accounts (DA) also have a very strong positive correlation with GDP (0.986), with a p-value of 0.000, indicating statistical significance. The number of debit card holders (DC) correlates positively with GDP (0.967), while internet banking users (IBU) show a strong correlation (0.966), both with p-values of 0.000. Lastly, branchless banking services (BRB) have a strong positive correlation with GDP (0.918), also statistically significant with a p-value of 0.000.

The results of this study give a clear picture on the role that digital financial inclusion plays in fostering economic development, which is a substantial benefit that provides enormous advantages. The research provides actionable insights by identifying and quantifying the impact of various digital financial services on GDP, potentially guiding policy creation and strategic initiative planning. The findings provide insight on the efficacy of a variety of digital financial efforts, which enables policymakers to spend resources in a more effective manner and create interventions that yield the greatest possible economic benefits. The research underscores the importance of financial institutions expanding digital services to underserved regions, thereby fostering growth and broadening their market reach. In general, the research contributes to a deeper understanding of how digital financial inclusion can drive economic development, thereby supporting Nepal's overarching goal of achieving inclusive and sustainable growth.

5.2 Conclusion

The study concluded that the need for a systematic review of the role of digital financial services in enhancing financial inclusion in Nepal and its impact on GDP growth. In remote and rural areas, mobile banking and branchless banking solutions were instrumental in delivering access to financial products to underserved populations. With this expansion comes the creation of a more inclusive financial system, closing the gaps that previously inhibited access to real financial procreation opportunity. Additionally, the study found a significant correlation between financial service indicators like the number of bank branches, ATMs, mobile banking users with GDP growth. A rise in the number of deposit accounts, debit cards and internet banking are also positively related with economic performance. These findings highlight the need for building more financial infrastructure density and fostering digital financial services to enhance economic activity and GDP. Nepal needs more digital financial infrastructure and this study shows that investing in it will open up access to humans across economics in its developmental balancing act.

5.3 Implications

On the basis of the discussion, main findings and conclusion of the study key implications arise. Data should be complemented with policies that promote the creation of such digital financial services and infrastructure, particularly in low and middle-income areas where capital is scarce. Banks and credit unions need physical and digital banking infrastructure investment to improve financial access and promote economic development. It requires ongoing access to enhanced financial literacy programs, both of which are pivotal in driving uptake of smart financial services and improving financial inclusion. These include improvements in mobile banking technology and the establishment of brick-and-mortar branches in remote locations.

Assessments of the performance of digital financial services on the economy should be regularly conducted to ensure optimal strategies and determine success measures. Incentivizing financial institutions to innovate and provide new, customer-friendly digital financial products, on the other hand, can further enhance economic growth. Further research should assess long-time impacts of financial instruments on diverse economic indicators and compare practices between countries. It will also be important for research to consider how the integration of various digital financial

services create impacts on financial inclusion and economic development, providing a holistic sense of their greater commercial significance.

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Appendices

Appendix I

Data Utilized in the Study

FY	GDP	Bank Branches	ATMs	Mobile Banking Users	Deposit Accounts	Debit Cards	Internet Banking Users	Branchless Banking
2013/14	1791140.758	1,547	1,652	728,424	13,129,574	3,688,779	298,434	504
2014/15	1862357.469	1,672	1,721	997,463	14,934,618	4,146,237	396,362	504
2015/16	1870423.594	1,869	1,908	1,604,578	16,836,017	4,142,390	489,835	812
2016/17	2038336.745	2,274	2,081	2,438,222	19,677,005	4,694,066	766,958	1,008
2017/18	2193706.438	3,023	2,791	4,711,097	23,544,859	5,307,970	816,074	1,285
2018/19	2339742.692	3,585	3,316	7,406,802	27,866,505	6,454,285	888,268	1,530
2019/20	2284299.667	4,436	4,106	10,115,313	32,454,204	7,062,472	1,001,866	1,574
2020/21	2394817.502	4,753	4,325	12,638,366	35,766,953	8,459,435	1,115,532	1,727
2021/22	2529243.234	4,930	4,464	16,091,464	42,451,071	10,274,413	1,279,475	1,553
2022/23	2576250.509	5,264	4,987	18,438,455	45,231,458	11,358,426	1,347,970	1,487

Appendix II

Natural Log Transformation of Variables

FY	GDP	Bank Branches	ATMs	Mobile Banking Users	Deposit Accounts	Debit Cards	Internet Banking Users	Branchless Banking
2013/14	7.3441	7.4097	13.4986	16.3904	15.1208	12.6063	6.2226	7.3441
2014/15	7.4218	7.4507	13.8130	16.5192	15.2377	12.8901	6.2226	7.4218
2015/16	7.5332	7.5538	14.2884	16.6390	15.2368	13.1018	6.6995	7.5332
2016/17	7.7293	7.6406	14.7068	16.7950	15.3618	13.5502	6.9157	7.7293
2017/18	8.0140	7.9342	15.3654	16.9744	15.4847	13.6123	7.1585	8.0140
2018/19	8.1845	8.1065	15.8179	17.1429	15.6803	13.6970	7.3330	8.1845
2019/20	8.3975	8.3202	16.1296	17.2953	15.7703	13.8174	7.3614	8.3975
2020/21	8.4665	8.3722	16.3522	17.3925	15.9508	13.9248	7.4541	8.4665
2021/22	8.5031	8.4038	16.5938	17.5639	16.1452	14.0620	7.3479	8.5031
2022/23	8.5686	8.5146	16.7299	17.6273	16.2455	14.1141	7.3045	8.5686

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Abstract This study explores the impact of digital financial inclusion on economic growth in Nepal, focusing on the role of digital financial services such as mobile banking, ATMs, branchless banking, and internet banking in fostering financial inclusion and GDP growth. Utilizing secondary data from fiscal years 2013/14 to 2022/23, the study employs descriptive and causal research designs, incorporating trend analysis and correlation analysis. Findings reveal strong positive correlations between GDP and key variables like the number of bank branches, ATMs, mobile banking users, deposit accounts, debit card holders, and branchless banking services. The study concludes that digital financial services have a transformative effect on financial inclusion, providing previously underserved populations with access to essential financial services. The study provides policy recommendations urging policymakers and financial institutions to invest in both digital and physical banking infrastructure, especially in remote areas, while emphasizing the need for enhanced financial literacy programs to improve service adoption. The research contributes valuable insights for future studies on the long-term effects of digital financial