

Raising Good Governance through Digital Payment Systems: Insights from Nepal and India's UPI

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Abstract

In the digital age, integrating technology into governance is essential for improving transparency, accountability, and efficiency. Digital payment systems have emerged as a key tool, enabling secure and traceable financial transactions while reducing reliance on cash. Nepal, with platforms like ConnectIPS and mobile wallets, is witnessing a rapid shift in how financial transactions are conducted, even in its most remote areas. Meanwhile, India's Unified Payments Interface (UPI) has become a global example of how digital payments can promote financial inclusion, streamline public services, and reduce corruption. This study uses a comparative case study approach to examine the role of digital payments in enhancing good governance in Nepal. It draws insights from India's UPI to analyze the potential benefits and challenges of adopting similar systems in Nepal. Challenges such as the digital divide, low digital literacy, and cybersecurity risks remain significant barriers. By addressing these obstacles, Nepal can utilize the transformative power of digital payments to create a more transparent and inclusive governance framework. This research highlights key findings and provides actionable recommendations for policymakers to maximize the impact of digital payment systems on governance.

Keywords: Transparency, Accountability, Efficiency, Financial Inclusion, Framework, Digital divide

Introduction

In today's rapidly evolving world, the success of any state depends on the principles of good governance. Effective governance is not just a matter of policy but a critical driver of sustainable development, social equity, and public trust. As countries face the challenges of the digital age, the need for transparent, accountable, and efficient governance has become more important than ever. In this context, digital payments have emerged as a cornerstone of the modern economy, revolutionizing how

transactions are conducted across the globe. By enabling instant, secure, and convenient financial exchanges, digital payment systems have significantly reduced the reliance on cash, facilitated global commerce, and expanded access to financial services. From mobile wallets to online banking, these technologies have not only streamlined everyday transactions but also played a pivotal role in driving economic growth, fostering financial inclusion, and enhancing the efficiency of both private and public sector operations. The World Bank's Global Findex Database shows that digital payments have indeed played a significant role in financial inclusion, with the number of adults owning a bank account or using a mobile money provider growing from 51% in 2011 to 76% in 2021. This 50% increase represents 1.2 billion adults gaining access to financial services. In developing countries, the jump was even greater, rising from 42% in 2011 to 71% in 2021, largely due to digitalization (Demirgüç-Kunt et al., n.d.). The COVID-19 pandemic further accelerated the adoption of digital payments as people worked from home, banks and stores closed temporarily, and some merchants refused cash. In 2021, 20% of adults in developing economies made a digital merchant payment, with 8% doing so for the first time since the pandemic began (Covid-19 Accelerated the Digitalisation of Payments, 2021). As digital payments become increasingly integrated into the fabric of the global economy, their impact extends far beyond convenience, shaping the future of governance and public administration.

In Nepal, where the landscape is as diverse as its people, the pursuit of good governance has always been a central goal. As the nation embraces the digital revolution, a quiet transformation is underway—one that is reshaping how the government interacts with its citizens and manages public resources. Digital payments were first introduced in Nepal by Kumari Bank in 2002, marking the beginning of the country's journey into digital financial services. Today, more than five digital payment platforms operate in Nepal, alongside e-banking services provided by the majority of banks. This digital shift has been met with rapid adoption, as evidenced by the significant growth in digital transactions reported by Nepal Rastra Bank (NRB). For instance, Nepal's payment system includes two types of instant payment systems: high-value and retail payments. Currently, three major networks facilitate retail instant payments in the country. The Nepal Clearing House Limited (NCHL) operates the connectIPS and corporatePAY systems, providing instant payment services. Fonepay Payment Service Ltd. offers real-time payments through its Fonepay Direct and Inter-Bank Fund Transfer (IBFT) systems. Similarly, Nepal Payment Solution Ltd. provides instant payment services through its InstaFund system. These three networks enable seamless, real-time transfers between bank customers across different financial institutions.

ConnectIPS, operated by Nepal Clearing House Limited (NCHL), has become one of Nepal's most popular instant payment systems, especially following the COVID-19 pandemic, with growth rates of 1432.3% in FY 2019/20 and 566% in FY 2020/21. In FY 2022/23, connectIPS transactions grew by 27.7%, reaching 50.58 million. Fonepay Payment Service Ltd. also introduced QR code-based payments in Nepal, with the number of transactions increasing by 189.53% and their value rising by 159.67% in FY 2022/23 compared to the previous year. Banks and Financial Institutions (BFIs) have expanded mobile and internet banking services, allowing users to perform digital financial transactions like fund transfers, QR payments, and utility payments. By FY 2022/23, mobile banking users grew by 16.7%, reaching 21.36 million, while internet banking users increased by 10.2%, totaling 1.86 million. Additionally, mobile wallet (e-money) usage provided by Payment Service Providers (PSPs) has significantly increased, with 18.94 million users conducting transactions worth NPR 219.81 billion by mid-July 2023. These trends reflect the rapid growth of digital payments in Nepal. Digital payments once a novel concept, have now become central to addressing some of the most persistent challenges in governance. From the bustling markets of Kathmandu to the remote villages in the Himalayas, digital payments are empowering people and making government operations, trade, and service delivery more efficient. As Nepal stands on the brink of this digital transformation, the role of digital payments in fostering good governance cannot be overstated.

Digital payment systems have emerged as transformative tools in governance, significantly enhancing transparency, accountability, and efficiency. In Nepal, platforms such as ConnectIPS and mobile wallets have started bridging financial inclusion gaps, while India's Unified Payments Interface (UPI) has become a global benchmark for leveraging digital payments to streamline public services and reduce corruption. These developments underscore the potential of digital payments in addressing persistent governance challenges. Despite this, Nepal faces considerable barriers, including the digital divide, low digital literacy, and cybersecurity risks, which hinder the effective implementation of digital payment systems. While extensive research has highlighted the benefits of digital payments, a comparative analysis of Nepal's digital payment landscape and India's successful UPI model remains underexplored. Addressing this gap is critical to deriving actionable insights that can guide the development of a transparent, inclusive, and efficient governance framework in Nepal.

Statement of the problem

The use of cash-based transactions in Nepal creates significant challenges for good governance, particularly by increasing the risk of corruption and inefficiency. Cash payments are difficult to trace, making it easier for bribery and financial mismanagement to occur, which weakens transparency and accountability in both the

public and private sectors. Without a formal and traceable payment system, it is harder to monitor how government funds are used, leading to waste and misuse. This reliance on cash has contributed to rising corruption levels, making it difficult for the government to enforce proper oversight. As a result, cash transactions remain a major barrier to good governance, reducing public trust in government institutions and slowing down overall progress.

To address these issues, this study answers the following research questions

- a) How do digital payment systems influence core governance principles such as transparency, accountability, efficiency, and responsiveness?
- b) How do digital payment systems specifically contribute to reducing corruption and enhancing the traceability of government transactions, particularly in the distribution of public funds and benefits?
- c) What are the challenges and barriers to implementing digital payments in governance, and what recommendations can be made to maximize their benefits?

Objective of the study

The primary objective of this study are as follows

- a) To explore the role of digital payments in enhancing good governance by examining their impact on key governance principles such as transparency, accountability, efficiency, and responsiveness.
- b) To assess how digital payment systems contribute to reducing corruption and improving transparency in government transactions, particularly in the distribution of public funds and benefits.
- c) To identify the challenges and barriers to implementing digital payments in governance and propose recommendations for policymakers and government to maximize the benefits of digital payments in promoting good governance.

Limitation of the study

The limitations of this study are primarily as follows:

- a) This study focuses on only five of the eight principles of good governance as outlined by the UNDP, specifically transparency, accountability, efficiency, responsiveness, and inclusiveness, leaving out participation, consensus orientation, rule of law, and equity.
- b) The study focuses on Nepal, and as a result, the findings may not be fully applicable to other countries with different economic, technological, and social contexts.
- c) The analysis includes only one case study: India's Unified Payments Interface (UPI) to demonstrate the impact of digital payments on good governance. While UPI serves as a strong example, its success in India may not be entirely replicable

- in Nepal due to differences in infrastructure, regulatory frameworks, and user adoption rates.
- d) The study may be constrained by the availability of data due to limited time and resources, focusing on the period from 2016 to 2023 AD. Data will be sourced primarily from Nepal Rastra Bank and other relevant sources, which might limit the depth of the analysis.

Methodology

This study employs a comparative and exploratory research design to investigate the role of digital payment systems in enhancing good governance. By examining Nepal's digital payment platforms, such as ConnectIPS and mobile wallets, alongside India's Unified Payments Interface (UPI), the study aims to provide insights into how digital payments can address governance challenges, including transparency, accountability, and efficiency.

The research relies on secondary data obtained from credible sources, including:

- a) Reports published by Nepal Rastra Bank and the National Payments Corporation of India (NPCI).
- b) Scholarly articles and case studies on digital payments and governance.
- c) Global databases, such as the World Bank and other financial institutions, for comparative metrics and contextual data. Quantitative data on transaction volumes, user adoption rates, and growth trends from 2016 to 2023 were analyzed to assess the impact of digital payments on governance principles.
- d)

Result and Discussion

This section presents a detailed analysis of the role of digital payment systems in fostering good governance, focusing on key governance principles: inclusion, transparency, accountability, efficiency, and responsiveness. Using data and insights from Nepal's digital payment platforms and India's Unified Payments Interface (UPI), the discussion highlights how digital payments transform governance by reducing corruption, enhancing service delivery, and improving citizen trust.

Role of Digital Payment in Good governance

The UNDP has identified eight core principles of good governance, including participation, inclusion, transparency, accountability, efficiency, responsiveness, consensus orientation, and the rule of law (8 Governance Principles, Institutional Capacity and Quality, 2011). Among these, five principles: inclusion, transparency, accountability, efficiency, and responsiveness are particularly influenced by the adoption of digital payment systems. This subsection examines the impact of digital

payment systems on the five governance principles, demonstrating their contribution to creating a more transparent and inclusive framework.

Inclusion

Digital payments are a powerful tool for fostering inclusion, particularly in regions where access to traditional banking services is limited. In many developing countries, including Nepal, a significant portion of the population remains unbanked, often due to geographical barriers, lack of infrastructure, or socioeconomic challenges. Digital payment systems help bridge this gap by offering a more accessible and convenient alternative to traditional banking. Mobile payment platforms, for instance, allow individuals in remote areas to send and receive money, pay bills, and access financial services using just a mobile phone. This not only brings financial services to the doorstep of those previously excluded from the formal economy but also empowers them to participate more fully in economic activities, improving their quality of life. According to Nepal Rastra Bank, mobile banking users in Nepal experienced a staggering 1117.32% increase from 2016 to 2023, while internet banking users saw a substantial 260.58% growth during the same period.

Moreover, digital payments promote financial inclusion by supporting government initiatives aimed at reaching the most vulnerable populations. Social welfare programs, subsidies, and financial aid can be delivered directly to beneficiaries through digital channels, ensuring that funds reach those in need without the delays, inefficiencies, or leakages associated with cash-based distribution methods

Transparency

Digital payments significantly enhance transparency in financial transactions, a key component of good governance. By digitizing payments, governments, businesses, and individuals can create an auditable record of every transaction, which is easily traceable and verifiable. This digital trail minimizes the opportunities for corruption, fraud, and financial mismanagement that often accompany cash-based transactions. The study by Tenace et al. , which analyzed data from 111 developing countries between 2010 and 2018, showed that increased digital transactions were associated with lower levels of corruption (Setor et al., 2021). For example, when government payments, such as salaries, pensions, or social welfare benefits, are made digitally, there is a clear record of who received the payment, when it was received, and the exact amount. This transparency ensures that funds are used as intended and that any discrepancies can be quickly identified and addressed.

Moreover, digital payments enable real-time monitoring and reporting, further strengthening transparency. Governments can use data from digital transactions to generate accurate and timely reports on financial flows, making it easier to oversee

public spending and detect irregularities. For instance, in procurement processes, where corruption has historically been a significant issue, digital payment systems can ensure that payments are made directly to contractors or suppliers without intermediaries, reducing the risk of kickbacks or bribes. Additionally, by making transaction data publicly accessible or sharing it with relevant oversight bodies, governments can enhance public trust and accountability. This increased transparency not only builds confidence in government institutions but also encourages more ethical behavior among officials and service providers.

Accountability

Digital payments significantly enhance accountability by creating a transparent and traceable record of financial transactions, reducing opportunities for corruption and mismanagement. Unlike cash payments, which are difficult to monitor, digital transactions leave a clear audit trail that allows for easy tracking and verification. This ensures that every payment is accounted for, making it harder for unauthorized or under-the-table dealings to occur. Additionally, digital payment systems enable real-time oversight of the flow of funds, allowing governments and organizations to monitor public spending more effectively. The automated nature of digital transactions also generates detailed records that can be easily audited, minimizing the chances of human error or manipulation. In public programs, such as welfare and subsidies, digital payments ensure that funds reach the intended recipients directly, reducing leakages and increasing the proper use of resources. Through these mechanisms, digital payments foster a higher level of accountability, which is essential for promoting good governance. McKinsey & Company has conducted research indicating that digital payments can provide a clear audit trail, making it easier to track and verify transactions, which in turn can improve accountability (Anan et al., 2022).

Efficiency

Digital payments significantly boost efficiency in both government operations and the broader economy by streamlining financial transactions and reducing the time and resources required to manage them. Unlike traditional cash-based systems, which involve manual handling, counting, and transportation of money, digital payments are processed instantly and electronically. This immediacy eliminates the delays typically associated with physical transactions, enabling governments to disburse funds quickly and accurately. For instance, in Nepal, government disbursements such as social security payments, pensions, and salaries can be transferred directly into beneficiaries' accounts through digital platforms, ensuring that funds are delivered promptly, even in remote areas. This not only saves time but also reduces the administrative burden on government offices, freeing up resources for other critical tasks. The UK

Government Digital Efficiency Report highlights significant savings and efficiency gains from digitizing government services. According to the report, moving transactional services online could save the government and service users between £1.7 billion and £1.8 billion annually. The report also emphasizes that digital services can improve efficiency by providing faster and more reliable service delivery, reducing the time required to process transactions, and enhancing overall service quality (Digital Efficiency Report, 2012).

Moreover, digital payments reduce the costs associated with handling and distributing cash. The logistical challenges of managing cash, such as storage, security, and transportation, can be substantial, especially in rural or hard-to-reach areas. By adopting digital payments, these costs are minimized, leading to more efficient use of public resources. Additionally, digital payment systems often come with automated features such as direct debits, recurring payments, and electronic invoicing, which further streamline financial processes and reduce the likelihood of human error. This automation not only speeds up transactions but also improves the accuracy of financial records, making it easier for governments to manage budgets, track spending, and plan for future expenditures. Overall, by enhancing the efficiency of financial transactions, digital payments contribute to more effective governance and better service delivery, ultimately benefiting citizens and the economy as a whole.

Responsiveness

Digital payments play a pivotal role in enhancing the responsiveness of governments and organizations, particularly in how quickly and effectively they can respond to the needs of citizens. In times of crisis or when rapid action is required, digital payment systems enable governments to disburse funds swiftly and directly to those in need. For example, during natural disasters or public health emergencies, such as the COVID-19 pandemic, governments can use digital payment platforms to quickly deliver financial aid, subsidies, or emergency funds to affected individuals and businesses. This speed in financial response is crucial for minimizing the impact of such crises, ensuring that citizens receive timely support when they need it most.

Moreover, digital payments facilitate a more responsive and citizen-centered approach to public service delivery. When payments for public services such as utility bills, taxes, social security or fines are made digitally, the entire process becomes faster and more convenient for both the government and the public. Citizens can make payments at any time, from anywhere, without the need to visit government offices or deal with lengthy queues. This immediacy not only improves the user experience but also allows governments to respond more quickly to the collection and management of funds, enabling them to allocate resources more effectively. According to the United

States Digital Service (USDS) 2024 Impact Report, the integration of digital services at the SSA has significantly improved the responsiveness and efficiency of its operations. This digital transformation has led to a 53% increase in customer satisfaction due to enhanced service delivery and easier access to benefits (U.S. Digital Service Impact Report 2024, 2024).

Case Study of India's Unified Payments Interface (UPI)

India's Unified Payments Interface (UPI) has revolutionized the country's digital payment landscape and has had a significant impact on good governance by promoting transparency, efficiency, and financial inclusion. UPI was launched by the National Payments Corporation of India (NPCI) in 2016, which is a real-time payment system that allows instant money transfers between bank accounts through mobile devices. It has rapidly become one of the most popular payment methods in India, transforming the way people and businesses conduct transactions. This subsection discusses how UPI has impacted on key good governance principles.

Growth and Adoption

Since its launch in 2016, UPI has seen remarkable growth. Initially, it processed a modest number of transactions, but its user-friendly interface and the widespread adoption of smartphones have driven its exponential rise. By 2023, UPI was processing over 8 billion transactions monthly (A. & Bhat., 2021). This growth was further fueled by the Indian government's push towards a cashless economy, especially after the demonetization in 2016, which encouraged people to adopt digital payment methods. The introduction of UPI 2.0 brought several new features that enhanced its functionality. These include overdraft facilities, one-time mandates, and the ability to view and pay invoices directly from the app (World Bank Fast Payments Toolkit Case Study: India, 2021). These features have made UPI more versatile and appealing to a broader range of users, including businesses and individuals.

Impact on Financial Inclusion

UPI has been instrumental in promoting financial inclusion by providing easy access to banking services. In a country where a significant portion of the population remains unbanked, UPI has made it possible for people to conduct financial transactions using just a mobile phone. This has been particularly transformative in rural areas, where traditional banking infrastructure is often lacking. UPI's integration with various government schemes has ensured that subsidies and welfare payments reach beneficiaries directly, reducing leakages and ensuring timely disbursements (Baliyan et al., 2023).

Promoting Transparency and Accountability

The transparency and traceability of transactions facilitated by UPI have significantly curbed corruption and financial mismanagement. Every transaction on the UPI platform leaves a digital footprint, making it easier to audit and monitor financial flows. This has been instrumental in enhancing accountability within government programs and public financial management. (A. & Bhat., 2021)

Enhancing Efficiency and Responsiveness

UPI has streamlined various financial processes, reducing the time and cost associated with traditional payment methods. Its real-time transaction capability ensures that payments are processed instantly, which is particularly beneficial for both personal and business transactions. During the COVID-19 pandemic, UPI played a crucial role in the government's emergency response, enabling the swift distribution of financial aid to affected populations (A. & Bhat., 2021). The platform enabled the swift distribution of financial aid to affected populations, ensuring that support reached those in need without delays. This responsiveness is vital in times of crisis, where timely financial assistance can make a significant difference.

The success of UPI in India underscores the transformative potential of digital payment systems in fostering good governance. By promoting financial inclusion, enhancing transparency, and improving efficiency, UPI has set a benchmark for digital payment solutions globally. As other countries look to replicate this model, the lessons learned from India's UPI journey will be invaluable in shaping the future of digital economies worldwide.

Challenges and Recommendations

This section identifies key challenges faced by Nepal in adopting digital payments, including the digital divide, cybersecurity risks, and lack of interoperability. Drawing lessons from successful models like India's Unified Payments Interface (UPI), actionable recommendations are proposed for the government and institutions. These strategies aim to bridge existing gaps, enhance the effectiveness of digital payment systems, and pave the way for a more transparent, inclusive, and efficient governance framework.

Challenges

Implementing digital payments as a tool for good governance comes with several challenges. While digital payments offer numerous benefits, these challenges can hinder their effectiveness and need to be addressed to fully realize their potential. Here are some of the key challenges:

- a) In many developing countries, including Nepal, large portions of the population still lack access to reliable internet connections, especially in rural and remote areas. According to World Bank data of 2021, 52% of population in Nepal have access to internet (*Individuals Using the Internet (% of Population) - Nepal, 2021*). This digital divide can exclude significant segments of the population from benefiting from digital payment systems.
- b) Even where internet access is available, low levels of digital literacy can prevent people from effectively using digital payment platforms. Many individuals, particularly in older age groups or low-income communities, may find it challenging to adopt and trust these new technologies. The general literacy rate of Nepal stands at 76.3 percent. As per the survey carried out by NRB, the financial literacy rate is 57.9 percent and research showed that the digital literacy rate is staggering around 31 percent (Rudra Prasad Adhikari, 2024).
- c) As digital payments involve sensitive financial and personal data, they are vulnerable to cyberattacks and data breaches.
- d) The rise of digital payments has also led to an increase in fraud, such as phishing attacks, fake payment apps, and identity theft. Governments and service providers must work to educate users and implement strong security measures to mitigate these risks.
- e) Many countries lack comprehensive regulations governing digital payments. This can lead to inconsistencies in how these payments are handled, gaps in consumer protection, and challenges in enforcing rules across different platforms and providers.
- f) For countries like Nepal with significant remittance flows, ensuring that digital payment systems are compatible with international standards and regulations can be complex.
- g) Implementing digital payment systems requires significant investment in infrastructure, technology, and education. For governments, especially in developing countries, the initial costs can be a significant barrier.
- h) For small businesses and vendors, the costs associated with setting up digital payment systems, such as acquiring POS terminals or paying transaction fees, can be prohibitive, slowing down the adoption process.
- i) In Nepal, multiple digital payment platforms exist, but they are not fully interoperable. This fragmentation can lead to confusion among users, increased transaction costs, and inefficiencies, reducing the overall impact of digital payments on governance.

Recommendation to Government and Institutions

The recommendation to the policy makers are as follows:

- a) Invest in expanding digital infrastructure, especially in rural and underserved areas, to ensure that all citizens have access to reliable internet and digital payment services. This includes improving mobile network coverage, increasing the availability of Point-of-Sale (POS) terminals, and supporting the development of digital payment platforms.
- b) Launch nationwide digital literacy campaigns to educate citizens on how to use digital payment systems safely and effectively. Focusing on reaching marginalized and older populations who may be less familiar with digital technology. Additionally, create awareness programs to build trust in digital payments by highlighting their benefits and addressing common concerns about security and privacy.
- c) Strengthen cybersecurity measures to protect digital payment systems from fraud, data breaches, and other cyber threats. Implementing robust data protection regulations to safeguard users' personal and financial information, ensuring that digital payments are secure and trustworthy.
- d) By establishing a clear and comprehensive regulatory framework for digital payments that promotes innovation while ensuring consumer protection. This framework should include guidelines for interoperability between different payment platforms, standardization of payment processes, and clear rules for handling disputes and grievances.
- e) Encourage interoperability between various digital payment platforms and financial institutions to create a seamless payment ecosystem. This will reduce fragmentation, lower transaction costs, and make it easier for citizens to use digital payments across different services and platforms
- f) Accelerate the integration of digital payments into government services, such as tax payments, social welfare distribution, and public utility payments. This will increase transparency, reduce leakages, and make it easier for citizens to interact with the government.
- g) Engage in regional cooperation with neighboring countries and international organizations to share best practices, experiences, and innovations in digital payments. This can help Nepal learn from successful models like India's UPI and adapt similar strategies to its context.

Conclusion

Digital payment systems hold immense potential to advance good governance by enhancing transparency, accountability, efficiency, and inclusivity within governmental operations. The case study of India's Unified Payments Interface (UPI) illustrates how strategic implementation of digital payment systems can transform governance. UPI has

demonstrated tangible outcomes, such as improved efficiency in public service delivery through real-time transactions, enhanced transparency with digital audit trails reducing corruption, and greater financial inclusion by enabling access to banking services in underserved areas. These achievements underscore the critical role of government support, robust infrastructure, and user-centric design in realizing the full potential of digital payments. For Nepal, these lessons are particularly relevant. While platforms like ConnectIPS and mobile wallets have shown promising growth, challenges such as the digital divide, limited infrastructure, and regulatory gaps continue to hinder widespread adoption and impact. By learning from UPI's success, Nepal can prioritize investments in digital infrastructure, strengthen cybersecurity measures, and adopt policies that promote interoperability and financial literacy. Ultimately, for digital payments to play a transformative role in governance, Nepal must address its unique challenges while leveraging proven strategies from India's UPI. A collaborative effort among policymakers, financial institutions, and technology providers is essential to build a trusted and accessible digital payment ecosystem that drives transparency, inclusivity, and accountability in governance.

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