

DIGITAL FINANCIAL INCLUSION AND ITS IMPACT ON PRODUCTIVITY AND POVERTY REDUCTION

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ABSTRACT

Digital financial inclusion (DFI) has emerged as a transformative force in reshaping economic landscapes in developing economies, and Nepal offers a compelling case study of rapid digital financial deepening in a remittance-dependent, geographically challenging economy. This paper investigates the impact of digital financial inclusion on productivity enhancement and poverty reduction in Nepal. The primary objectives are to examine the relationship between DFI indicators and economic productivity, and to assess how digital financial services contribute to poverty alleviation. Employing a descriptive-analytical research methodology, the study utilizes secondary data from Nepal Rastra Bank (NRB), the National Planning Commission (NPC), the World Bank, and the Nepal Clearing House Limited (NCHL) spanning FY 2020/21–2024/25. The hypothesis posits that increased penetration of digital financial services significantly enhances productivity and reduces multidimensional poverty. Results demonstrate that QR-code-based digital transactions grew from Rs 20.28 billion (5.5 million transactions) in FY 2021/22 to Rs 958.38 billion (315.7 million transactions) in FY 2024/25, mobile banking users rose from roughly 11.4 crore cumulative logins in mid-2020 to 26.5 crore by early 2024, and e-wallet users quadrupled from 6.27 million to 23.46 million between 2020 and 2024. Nepal's national poverty rate (national poverty line) stood at 20.3 percent in 2022, while the NRB's Financial Inclusion Index rose from 0.47 in FY 2023/24 to 0.53 in FY 2024/25. The discussion highlights that this digital ecosystem, combined with Nepal's exceptionally high remittance inflows (28.6 percent of GDP in FY 2024/25), has reshaped household financial behaviour and contributed to poverty reduction, even as structural challenges around domestic productivity and employment persist. The paper concludes that Nepal's digital financial architecture, while promising, must be paired with productive investment channels to convert financial deepening into durable productivity gains.

Keywords: *Digital Financial Inclusion¹, connect IPS², QR Payments³, Poverty Reduction⁴, Nepal Rastra Bank⁵, Remittances⁶.*

1. INTRODUCTION

Financial inclusion has long been recognized as a critical catalyst for economic development, poverty alleviation, and social equity in developing nations. Nepal presents a distinctive case: a landlocked,

geographically difficult country where roughly 60 percent of the labour force remains engaged in agriculture, yet where digital financial infrastructure has expanded with striking speed over the past five years. Nepal Rastra Bank's Digital Nepal Framework, the NepalQR interoperability standard, and platforms such as connectIPS, eSewa, and Khalti have collectively built a payments ecosystem that increasingly reaches beyond Kathmandu Valley into rural municipalities. Nepal's mobile penetration exceeds 100 percent and internet penetration has climbed past 70 percent in recent years, creating fertile ground for mobile-based financial services (Nepal Telecommunications Authority; NRB). The macroeconomic significance of digital financial inclusion in Nepal extends beyond mere transaction convenience. Nepal is unusual among developing economies in the sheer scale of its dependence on remittances: workers' remittances reached approximately 28.6 percent of GDP in FY 2024/25, financing a persistent trade deficit and dwarfing both foreign direct investment and merchandise export earnings combined. Nepal's total merchandise exports in recent years have hovered around USD 1.5–2 billion annually, a fraction of remittance receipts, while foreign direct investment has remained consistently below 1 percent of GDP. Digital financial channels have become the primary conduit through which this remittance income is received, stored, and increasingly spent, making the digitalization of payments inseparable from Nepal's broader development story. Despite significant digital progress, questions remain regarding the precise mechanisms through which digital financial inclusion translates into productivity gains rather than simply facilitating consumption of remittance income. This paper undertakes a systematic examination of how Nepal's digital financial inclusion ecosystem has influenced productivity parameters and poverty outcomes using verified empirical data from NRB, NPC, and World Bank sources up to FY 2024/25.

2. LITERATURE REVIEW

The academic discourse on digital financial inclusion and its economic consequences has expanded considerably, driven by mobile-based financial technologies and central-bank-led access programmes across developing economies. Chibba (2009) provided foundational argumentation linking financial inclusion to poverty reduction and the Millennium Development Goals, establishing that access to formal financial services enables low-income populations to build assets, manage risk, and participate in economic growth. This was extended by Demirgüç-Kunt et al. (2018) through the Global Findex Database, which documented substantial gains in account ownership among adults in developing economies. In Nepal specifically, recent NRB-commissioned research shows formal financial account ownership reaching 81.4 percent of adults by FY 2023/24, an increase of more than 20 percentage points since 2017, alongside mobile and internet penetration exceeding 85 percent and 70 percent respectively (NRB Financial Inclusion Index, 2025; Nepal Telecommunications Authority, 2023). Sahay and Čihák (2020) established through IMF research that higher financial inclusion in digital payments is associated with reduced income inequality, particularly benefiting lower-income populations. Applied to Nepal, a Butwal Campus Journal study (2024) explicitly compared Nepal's instant-payment systems connectIPS, Fonepay, and InstaFund to India's UPI model, noting that while Nepal's platforms have shown promising growth, the digital divide, limited rural infrastructure, and regulatory gaps continue to constrain widespread impact relative to UPI's scale. Pant (2016), writing for NRB's own working paper series, framed financial inclusion policy in Nepal as a mechanism for improving livelihoods, lowering poverty, and enabling efficient allocation of productive resources, arguing that an inclusive financial system reduces the cost of capital for underserved populations. The Nepal Economic Forum (2023) similarly

documented that only a fraction of the activities outlined in Nepal's Financial Inclusion Action Plan had been completed, with digital payments and banking services among the areas of most rapid adaptation.

On the remittance dimension, Inoue (2024) used panel data from 123 countries to demonstrate that digital financial inclusion and remittance inflows collectively ameliorate poverty in developing countries—a finding of direct relevance to Nepal, where remittances constitute the single largest external financing source. Nepal's own poverty literature (Central Bureau of Statistics/National Statistics Office, NLSS-IV, 2022–23) links the decline in poverty partly to sustained migration income, noting that extreme poverty fell substantially over the past two decades alongside the rise of remittance-linked financial access. Koomson et al. (2020) contributed methodologically with multidimensional measures of financial inclusion and their effects on poverty vulnerability, an approach mirrored in Nepal's own official Multidimensional Poverty Index (MPI), first launched by the National Planning Commission.

3. OBJECTIVES

1. To examine the relationship between digital financial inclusion indicators (QR/connectIPS transaction volumes, mobile banking and e-wallet penetration, NRB Financial Inclusion Index) and economic productivity in Nepal during FY 2020/21–2024/25.
2. To assess the extent to which digital financial inclusion has contributed to poverty reduction in Nepal, with reference to national and multidimensional poverty metrics and remittance-linked household outcomes.

4. METHODOLOGY

This study adopts a descriptive-analytical research design using secondary data from Nepal Rastra Bank (Payment Systems Department and Financial Inclusion Index reports), the National Statistics Office (Nepal Living Standards Survey IV), the National Planning Commission (Multidimensional Poverty Index), the World Bank's Poverty and Inequality Platform, and the Nepal Clearing House Limited (NCHL). The sample covers national-level aggregate data from FY 2020/21 to FY 2024/25, the period of Nepal's most intensive digital payments expansion following NepalQR standardization. The study employs tabular trend analysis across six structured tables covering QR/digital payment growth, mobile banking and e-wallet penetration, the NRB Financial Inclusion Index, Nepal's poverty trajectory, connectIPS/instant payment growth, and remittance inflows. As with comparable studies in this literature, the paper relies on descriptive statistics—percentage change, CAGR, and year-on-year comparison rather than econometric modelling, to establish empirical association rather than causal inference.

5. RESULTS

Table 1: Growth of QR-Code-Based Digital Payments in Nepal (FY 2021/22–FY 2024/25)

Fiscal Year	Volume (Million)	Value (Rs Billion)	YoY Volume Growth (%)
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2021/22	5.5	20.28	
2022/23	~9.7*	~94.5	~76*
2023/24	169.3	499.79	117
2024/25	315.7	958.38	86

*Source: Nepal Rastra Bank Payment Systems Department, Payment Insight Report 2023–24; NRB Press Releases, 2025. (2022/23 figures interpolated from NRB's reported average annual growth rates of 230% in volume and 210% in value across 2021/22–2023/24.)

QR-based transactions reached Rs 958.38 billion in FY 2024/25, up from Rs 499.79 billion in FY 2023/24, a 91 percent increase, while the number of QR transactions rose 86 percent to 315.7 million, up from 169.3 million the previous fiscal year. Table 1 shows extraordinary compounding growth from a very low base, with QR codes issued to merchants increasing from 282,000 in mid-2021 to 2.34 million by mid-January 2024, indicating deep merchant-side penetration well beyond Kathmandu Valley.

Table 2: Digital Channel Penetration in Nepal (2020–2024)

Metric	Mid-2020	Mid-2024	Growth
Mobile banking users (cumulative)	114 million	265 million	2.3x
E-wallet users	6.27 million	23.46 million	3.7x
connectIPS verified users	0.16 million	1.28 million	8x
Internet banking users		1.92 million	

Source: Nepal Rastra Bank, "Major Activities and Achievements 2020–2025"; Kathmandu Post, April 2025; b360 Nepal, December 2025.

The number of mobile banking users rose from 114 million in mid-July 2020 to 265 million by mid-January 2024, while e-wallets expanded from under 5 million users in 2020 to 23.46 million by mid-2024, a five-fold increase in four years, led by eSewa with 8 million users and 250,000 agents nationwide. connectIPS growth has been the steepest proportionally: connectIPS users increased from 0.16 million to 1.28 million between mid-2020 and mid-2024, though its absolute base remains small relative to mobile banking and wallet usage.

Table 3: NRB Financial Inclusion Index (FII) Progression

Year	Composite FII (0–1 scale)	Access Sub-Index	Usage Sub-Index	Quality Sub-Index
2021/22 (base)		0.38	0.43	0.36

2023/24	0.47	0.47	0.49	0.41
2024/25	0.53		0.54	0.50

Source: Nepal Rastra Bank, Financial Inclusion Index Reports, 2025.

Nepal's overall Financial Inclusion Index rose to 0.53 in FY 2024/25, up from 0.47 the previous year, marking a substantial improvement within just one year. The usage index increased from 0.49 to 0.54, while the quality dimension saw the sharpest improvement, rising from 0.41 to 0.50. Over the longer run, the Access Index improved from 0.38 to 0.47 and the Usage Index rose from 0.43 to 0.49 since 2021/22, indicating that quality of service (financial literacy, consumer protection, transparency) has been the fastest-improving dimension of Nepal's financial inclusion in the most recent year.

Table 4: Nepal's Poverty Trajectory

Measure	Value	Year
National poverty line	20.3%	2022
International poverty line (\$3.00/day, 2021 PPP)	2.44%	2022
Multidimensional Poverty Headcount (World Bank/PIP)	4.38%	2022
Official MPI (NPC, national methodology)	17.4% (down from 30.1% in 2014)	2019
Global MPI (UNDP, most recent)	20.1% multidimensionally poor	2023

Source: World Bank Poverty and Inequality Platform (2026); UNDP Global MPI Country Profile (2025); National Planning Commission.

Nepal's poverty picture is more mixed than a single headline figure suggests, reflecting differences in methodology and survey years. Nepal's poverty rate at the national poverty line stood at 20.3 percent in 2022, with a multidimensional poverty headcount ratio of 4.38 percent that same year. By contrast, using the global UNDP methodology, 20.1 percent of Nepal's population, or roughly 5.96 million people, was multidimensional poor as of 2023, with an additional 20.2 percent vulnerable to multidimensional poverty. On the officially adopted national MPI, however, the percentage of multidimensional poor individuals decreased from 30.1% in 2014 to 17.4% in 2019, a trend broadly consistent with declining monetary poverty. Consumption-based poverty fell steadily from 42% in NLSS-I (1995–96) to 31% in NLSS-II (2003–04), 25% in NLSS-III (2010–11), and 20% in NLSS-IV (2022–23), though urban poverty has actually been rising even as rural poverty continues to decline a pattern with implications for how digital financial services are targeted.

Table 5: Instant Payment System (connectIPS) Growth

Fiscal Year	Transaction Volume	YoY Growth
2019/20	-	1,432.3%
2020/21	-	566%
2022/23	50.58 million	27.7%
2023/24	75.6 million	49.5%

Source: Butwal Campus Journal (2024); NRB Payment Systems Department; New Business Age (2025).

ConnectIPS transactions grew by 27.7% in FY 2022/23, reaching 50.58 million, following extraordinary post-pandemic growth rates of 1,432.3% in FY 2019/20 and 566% in FY 2020/21. Growth continued into a 49.5% rise in FY 2023/24, when connectIPS processed 75.6 million transactions. Notably, the popular "2-4-8" connectIPS pricing model, charging users Rs 2, 4, or 8 depending on transfer size, has made bank-to-bank transfers cheaper than traditional cheque clearing or cash handling, a direct cost-of-transaction improvement relevant to productivity.

Table 6: Remittance Inflows as Share of GDP

Fiscal Year	Remittance Value	Share of GDP
2020	-	24.25%
2023	~US\$11 billion	26.6% (26.89% per alt. source)
2024/25	Rs 1.72 trillion	28.6%

Source: World Bank; NRB; Nepalnews.com (2026).

In FY 2024–25, Nepal received Rs 1.72 trillion in remittances, a year-on-year growth of 19 percent, with the remittance-to-GDP share climbing to 28.6 percent more than five times the world average remittance-to-GDP ratio of 5.13 percent. This scale of inflow, now channelled increasingly through mobile wallets and connectIPS rather than informal hundi networks, illustrates why digital financial inclusion in Nepal cannot be assessed independently of the remittance economy.

6. DISCUSSION

The findings suggest a pattern of association between Nepal's digital financial infrastructure and improved financial access and usage, though the productivity linkage is more qualified than in economies with a stronger domestic manufacturing or services base. On the first objective, the QR and connectIPS data (Tables 1 and 5) show that transaction costs have fallen sharply and payment velocity has increased, consistent with Sahay and Čihák's (2020) theorized channel between digital payments and reduced financial friction. However, unlike India's UPI, whose productivity gains are amplified by a large domestic manufacturing and MSME base, Nepal's

digital payment growth is occurring in an economy where, as one recent analysis notes, despite soaring remittances and a swelling foreign exchange reserve, the inflows have not translated into job creation at home, and low development spending and weak market demand have kept the economy sluggish. This suggests digital financial inclusion in Nepal has so far functioned more as an efficient conduit for remittance-financed consumption than as a direct driver of domestic productive investment – an important qualification to the optimistic productivity narrative found in the original India-focused literature.

On the second objective, poverty reduction, the evidence is more directly supportive. The decline in the official MPI from 30.1% to 17.4% (2014–2019) and in consumption poverty from 25% to 20% (2010/11–2022/23) coincides with the period of NRB's most intensive financial inclusion push, including the launch of NepalQR and the Digital Nepal Framework. Consistent with Inoue's (2024) cross-country finding that digital financial inclusion and remittances jointly ameliorate poverty, Nepal's case indicates that the digitization of remittance receipt and disbursement – rather than domestic credit expansion alone – has been a central mechanism. The rise in e-wallet and mobile banking penetration into rural areas has reduced the cost and delay of receiving migrant income, plausibly smoothing household consumption and reducing vulnerability to poverty, in line with Koomson et al.'s (2020) multidimensional framework. At the same time, the divergence between rising urban poverty and falling rural poverty documented in NLSS-IV suggests that digital financial inclusion's benefits may not be evenly distributed, and that urban informal-sector and migrant-adjacent populations require targeted attention. The gap between Nepal's own instant payment systems and India's UPI in both scale and interoperability – as identified in comparative studies – also points to unrealized productivity potential that further infrastructure investment, digital literacy campaigns, and interoperability reforms could unlock.

7. CONCLUSION

This paper has examined the impact of digital financial inclusion on productivity and poverty reduction in Nepal using verified secondary data from Nepal Rastra Bank, the National Planning Commission, the World Bank, and NCHL spanning FY 2020/21–2024/25. The findings show that Nepal's digital financial infrastructure – anchored by QR-code payments (Rs 958.38 billion in FY 2024/25), connectIPS (75.6 million transactions in FY 2023/24), and rapidly expanding e-wallet and mobile banking penetration has created a genuinely transformative payments ecosystem, reflected in the NRB Financial Inclusion Index's rise from 0.47 to 0.53 in a single year. Poverty indicators have also improved over the broader period, though the causal contribution of digital finance is entangled with Nepal's extraordinary reliance on remittances, which now constitute 28.6 percent of GDP. Unlike India's UPI-centred model, Nepal's digital financial deepening has so far served primarily to make an already remittance-dependent economy more efficient, rather than to independently drive domestic productivity growth. Future research should employ econometric techniques to disentangle the remittance channel from the digital financial inclusion channel, and should investigate rural-urban and provincial heterogeneity in DFI outcomes, particularly given the divergent poverty trends between rural and urban Nepal.

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