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Digital Banking Services and Financial Inclusion in Uzbekistan: Current State, Barriers, and Development Prospects

Nazarova Shohista Tolmas kizi
Basic doctoral PhD Department of Banking, Tashkent State University of Economics
E-mail: shohistaimomiddinova@gmail.com
ORCID: 0009-0006-8313-6705

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***Corresponding author:**
Nazarova Shohista Tolmas kizi

Abstract

Financial inclusion remains a core development challenge across transition economies, including Uzbekistan, where a significant portion of the adult population lacks meaningful access to formal financial services. This article examines the role of financial technology (Fintech) in extending banking service access within Uzbekistan's commercial banking sector over the period 2019–2023. Drawing exclusively on publicly available secondary data — including the Central Bank of Uzbekistan's statistical bulletins, the World Bank Global Findex Database (2021), and the International Telecommunication Union (ITU) connectivity reports — the study documents the rapid growth of mobile banking adoption alongside persistent structural inclusion gaps across demographic and geographic dimensions. A comparative analysis of five regional peer economies (Kazakhstan, Georgia, Azerbaijan, Kyrgyzstan, and Tajikistan) is conducted to identify policy-transferable lessons. The findings reveal that while digital banking penetration has grown at a compound annual rate of approximately 39% between 2019 and 2023, fundamental barriers — including low financial literacy (affecting approximately 70% of rural adults), infrastructural deficits in remote districts, regulatory fragmentation, and limited payment system interoperability — continue to prevent Fintech growth from translating into broad-based financial inclusion. The article concludes with a structured set of recommendations for commercial banks, regulators, and policymakers aimed at accelerating inclusive digital finance in Uzbekistan.

Keywords: financial inclusion, Fintech, digital banking, mobile banking, Uzbekistan, emerging markets, commercial banking, Central Asia

Introduction

Access to formal financial services — including savings accounts, payment instruments, credit, and insurance — is widely recognized as a foundational enabler of economic development, poverty reduction, and social equity (Demirgüç-Kunt et al., 2018). The concept of financial inclusion encompasses not merely the availability of such services, but their affordability, reliability, and meaningful usage by all segments of society, including those historically underserved: rural populations, women, youth, and low-income households.[1]

Uzbekistan has undergone significant macroeconomic and institutional reform since 2017, including banking sector liberalization, currency convertibility restoration, and active promotion of digital public services. These reforms have created an enabling environment for digital financial service growth.[2] Yet structural gaps between aggregate banking system development and household-level inclusion remain pronounced. According to the World Bank Global Findex Database (2021), only 43% of Uzbek adults held a formal financial account — a figure substantially below peers such as Kazakhstan (73%) and Georgia (68%), and well short of the global average of 76%.[3]

The proliferation of financial technology — encompassing mobile banking applications, real-time payment platforms, digital onboarding systems, biometric identification tools, and open banking infrastructure — offers a potentially transformative pathway to close this gap at scale and speed not achievable through traditional branch-based banking. Several lower-middle-income economies have demonstrated the potential of Fintech-enabled inclusion, most notably through mobile money ecosystems in Sub-Saharan Africa and super-app-integrated financial services in Southeast Asia.[4]

This article pursues three objectives: (1) to document the current trajectory and structure of Fintech adoption within Uzbekistan's commercial banking sector over 2019–2023; (2) to identify the principal barriers preventing Fintech adoption from translating into deeper financial inclusion; and (3) to derive actionable policy recommendations from the comparative experience of peer economies. The study relies entirely on publicly available secondary data, ensuring full reproducibility and applicability beyond any single institution.[5]

The article is organized as follows. Section 2 reviews the theoretical and empirical literature on Fintech and financial inclusion. Section 3 describes the research methodology and data sources. Section 4 presents empirical findings on the Uzbek context. Section 5 conducts a comparative regional analysis. Section 6 discusses implications. Section 7 concludes with recommendations.[6]

Literature Review

Theoretical Frameworks of Financial Inclusion

Financial inclusion has been conceptualized along multiple dimensions in the academic literature. The World Bank's foundational framework (Demirgüç-Kunt & Klapper, 2013) distinguishes four pillars: access (availability of financial service touch-points), usage (frequency and regularity of engagement), quality (appropriateness of products for user needs), and welfare impact (effect on household and enterprise outcomes). Subsequent scholarship has debated the relative primacy of supply-side constraints — such as geographic barriers and documentation requirements — versus demand-side factors including low trust, limited financial literacy, and cultural norms (Klapper et al., 2016; Ozili, 2021).[7]

More recent theoretical work emphasizes a systemic or ecosystem view, in which inclusion outcomes emerge from the interaction of regulatory environment, infrastructure, institutional trust, digital literacy, and product design (Sahay et al., 2020). This perspective is particularly relevant for transition economies, where legacy institutional structures, low trust capital, and uneven infrastructure create complex mediating conditions that simple supply-side interventions cannot overcome.[8]

Fintech as an Inclusion Enabler: Empirical Evidence

The empirical literature on Fintech-enabled financial inclusion draws extensively on the experience of M-Pesa in Kenya, which demonstrated that mobile money services could rapidly extend financial access to previously excluded rural populations at low marginal cost (Jack & Suri, 2011). Suri and Jack (2016) further documented significant welfare gains — particularly poverty reduction among female-headed households — attributable to M-Pesa access, establishing a causal link between mobile money access and household economic outcomes.[9]

Broader cross-country analyses by Ozili (2018) and Gabor and Brooks (2017) confirm a positive association between digital financial service penetration and standard inclusion indicators, while cautioning that the relationship is contingent on complementary factors including internet infrastructure, regulatory quality, and financial literacy. In a comprehensive 52-country study, Sahay et al. (2020) find that Fintech credit growth improves financial depth but may pose stability risks if regulatory frameworks lag innovation.

For Central and Eastern European and Central Asian transition economies, Claessens et al. (2018) identify regulatory predictability, interoperability standards, and digital identity infrastructure as the key institutional preconditions for Fintech to deliver inclusion outcomes. The absence of any one element — even

where mobile penetration is high — substantially attenuates the inclusion effect of digital finance deployment.[10]

The Uzbek and Central Asian Research Gap

Despite Uzbekistan's rapidly evolving banking sector and its population of approximately 36 million — making it the most populous economy in Central Asia — the country remains significantly underrepresented in the peer-reviewed literature on financial inclusion and Fintech. Existing Central Asian studies have concentrated primarily on Kazakhstan (Berdiyeva & Nurlanovna, 2021; Aigerim et al., 2022), where a mature digital financial ecosystem offers a more data-rich research environment.[11]

Studies examining Uzbekistan's banking sector have focused predominantly on structural reforms and state bank privatization (Tashmatov, 2020; EBRD, 2022) rather than household-level inclusion outcomes. This gap is particularly notable given the country's active Fintech policy agenda, which includes the National Payment System development program (2021–2025) and the establishment of a dedicated Fintech regulatory working group under the Central Bank of Uzbekistan in 2022.

This article addresses this gap by synthesizing available secondary data to construct the first comprehensive empirical overview of Fintech-driven financial inclusion dynamics in Uzbekistan's commercial banking sector.

Methodology

This study adopts a descriptive and comparative secondary-data analytical framework. No primary data collection was conducted; all evidence derives from publicly available institutional reports and international databases. This approach ensures reproducibility and eliminates institutional access bias.[12]

Data Sources

Four primary data sources are employed:

1. Central Bank of Uzbekistan — Annual Statistical Bulletins (2019–2023): mobile banking user registration and activity data, card payment volumes, ATM and branch density by region, and digital payment transaction statistics.
2. World Bank Global Findex Database — 2017 and 2021 waves: standardized cross-country adult financial inclusion indicators disaggregated by gender, income quintile, age, and urbanization.
3. International Telecommunication Union (ITU) — Digital Development Reports (2019–2023): mobile internet penetration, smartphone adoption rates, and broadband speed distribution.
4. National banking sector annual reports and regulatory disclosure documents of selected commercial banks, published under mandatory Central Bank transparency requirements.[13]

Comparative Case Selection

Five comparator countries were selected — Kazakhstan, Georgia, Azerbaijan, Kyrgyzstan, and Tajikistan — based on criteria of geographic proximity, comparable institutional heritage (Soviet transition economies), availability of matching Findex data, and diversity in Fintech development stage. This selection enables both aspirational benchmarking (Kazakhstan, Georgia as advanced comparators) and contextual peer comparison (Kyrgyzstan, Tajikistan as lower-income neighbors).

The comparative analysis applies a structured four-dimension evaluation framework — access, usage, regulatory environment, and digital infrastructure — to identify transferable policy lessons for Uzbekistan.[14]

Results and Discussion

Findings: Fintech Adoption and Financial Inclusion in Uzbekistan (2019–2023)

Growth of Digital Banking: Aggregate Trends

Uzbekistan's digital banking sector has experienced exceptional growth over the study period. The number of active mobile banking users increased from approximately 3.2 million in 2019 to 12.1 million by the end of 2023 — a compound annual growth rate (CAGR) of approximately 39%, outpacing the regional average of 22% (Central Bank of Uzbekistan, 2023). This growth was driven by the forced digitalization induced by COVID-19 pandemic containment measures in 2020–2021, subsequent government e-payment incentives, and the competitive expansion of mobile banking features among commercial banks.

Simultaneously, the share of cashless transactions in total retail payment volume rose from 18% in 2019 to 54% in 2023, reflecting both expanding merchant acceptance infrastructure and shifting consumer preferences. Mobile internet penetration grew from 41% to 71% of the adult population over the same period, providing the connectivity substrate for digital financial service delivery.[15]

Figure 1 illustrates the joint trajectory of mobile banking user growth and cashless payment share over the study period.

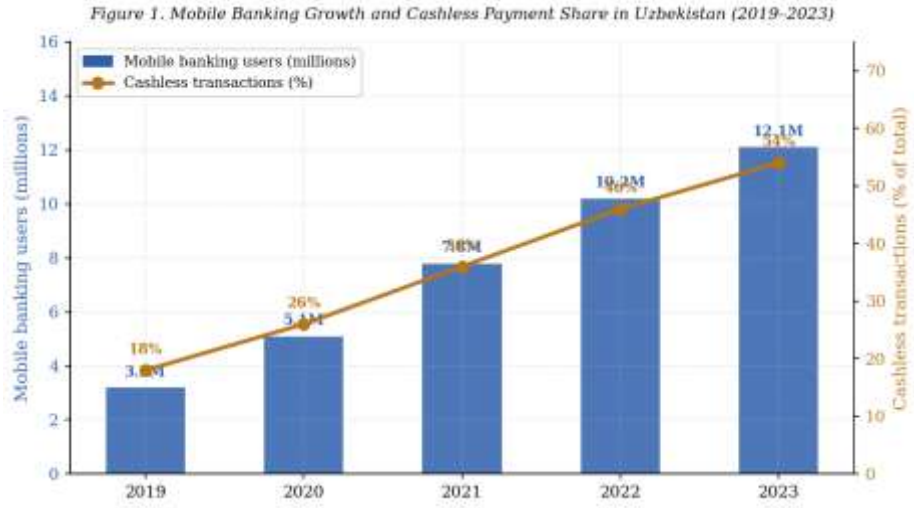

Figure 1. Mobile Banking User Growth and Cashless Payment Share in Uzbekistan (2019–2023) Source: Central Bank of Uzbekistan (2023); ITU (2023); author's compilation.

Table 1 provides a comprehensive summary of key digital banking infrastructure and usage indicators across the study period.

Table 1. Key Digital Banking Indicators in Uzbekistan, 2019–2023

Indicator	2019	2020	2021	2022	2023
Active mobile banking users (million)	3.2	5.1	7.8	10.2	12.1
Cashless transactions (% of total retail)	18%	26%	36%	46%	54%
Mobile internet penetration (% adults)	41%	48%	56%	64%	71%
Payment cards issued (million)	18.4	22.1	27.6	33.8	39.5
ATMs per 100,000 adults	22	25	28	31	34
Bank branches per 100,000 adults	8.1	8.7	9.4	10.1	10.7
Registered e-wallet accounts (million)	1.4	3.2	6.8	10.5	14.2

Source: Central Bank of Uzbekistan Annual Statistical Bulletins (2019–2023); ITU Digital Development Reports; author's compilation.

Persistent Inclusion Gaps: A Demographic Analysis

Aggregate digital banking growth figures mask profound inequalities in inclusion outcomes across demographic and geographic dimensions. The World Bank Findex (2021) data reveal that the national account ownership rate of 43% conceals a 27-percentage-point urban-rural gap (58% urban vs. 31% rural), a 12-point gender gap (49% male vs. 37% female), and a 15-point income gap between top and bottom income quintiles (62% vs. 28%).

Youth (aged 15–24) exhibit account ownership rates of 35% — slightly below the national average — contrary to the typical pattern in higher-income economies where youth are early adopters. This anomaly likely

reflects the high share of young Uzbeks in informal employment and agricultural activities, sectors historically underserved by formal banking.

Figure 2 disaggregates account ownership rates across demographic groups for 2017 and 2021, illustrating both the progress achieved and the remaining disparities.

Figure 2. Financial Account Ownership by Demographic Group, Uzbekistan (2017 vs. 2021)

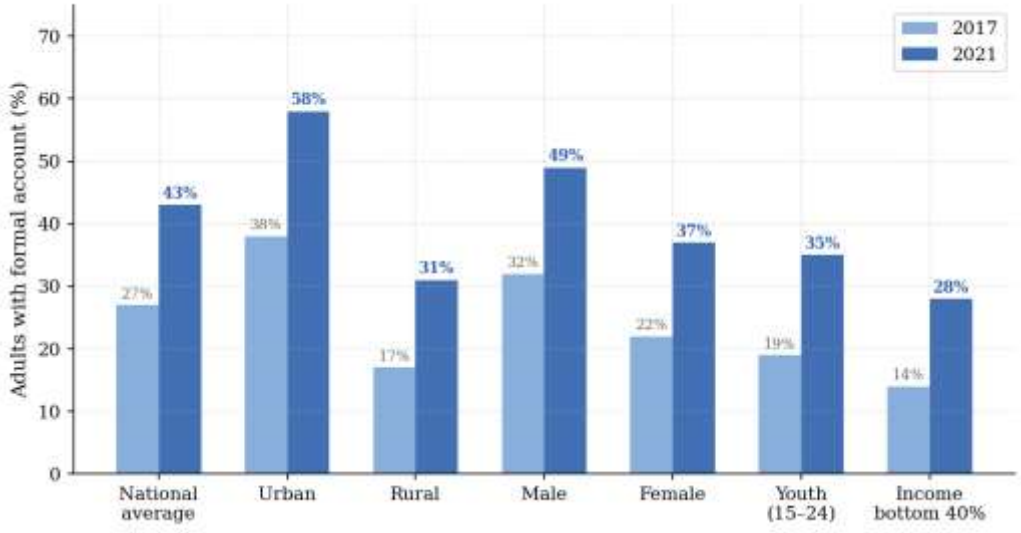

Figure 2. Financial Account Ownership by Demographic Group, Uzbekistan (2017 vs. 2021) Source: World Bank Global Findex Database (2017, 2021); author's compilation.

The data reveal that while all groups registered improvement between 2017 and 2021, the absolute gaps between advantaged and disadvantaged groups have not narrowed proportionally, suggesting that digital banking growth has disproportionately benefited already-included segments. This pattern — consistent with what Ozili (2021) terms "inclusion deepening versus inclusion broadening" — underscores the need for targeted rather than generic Fintech deployment strategies.[16]

Principal Barriers to Fintech-Driven Inclusion

Analysis of regulatory reports, sectoral surveys, and international development organization assessments identifies four principal barriers to broader Fintech-enabled financial inclusion in Uzbekistan.

Infrastructure deficit in rural regions. Despite the improvement in national mobile internet penetration statistics, significant geographic heterogeneity persists. Approximately 34 districts — concentrated in Kashkadarya, Surkhandarya, and Namangan regions — reported average mobile internet speeds below 3 Mbps as of late 2023, insufficient to support reliable digital financial application functionality. ATM density in rural districts remains at 11 per 100,000 adults, compared to 52 in Tashkent.[17]

Low financial and digital literacy. The Ministry of Finance of Uzbekistan's national financial literacy survey (2022) found that fewer than 30% of adults correctly understand basic interest rate mechanics, and fewer than 25% of rural adults demonstrate adequate digital security awareness to safely use mobile banking applications. This creates both adoption barriers and elevated fraud vulnerability among newly included populations.

Regulatory fragmentation. Fintech operators in Uzbekistan navigate overlapping oversight from the Central Bank, the Ministry of Digital Technologies, and the Agency for the Development of the Capital Market, without the benefit of a unified sandbox regulatory framework. As of 2023, no formal regulatory sandbox for Fintech innovation had been operationalized, creating legal uncertainty that has slowed product innovation — particularly in embedded finance, buy-now-pay-later, and agent banking models.

Payment system interoperability constraints. The coexistence of two domestic card networks — Uzcard and HUMO — with incomplete interoperability, combined with limited integration of international payment rails relevant to remittance flows, creates friction that disproportionately affects low-income users dependent on cross-border remittance income. Uzbekistan is among the top remittance-receiving countries globally relative to GDP (World Bank, 2022), yet the cost of international remittance receipt via formal banking channels

averaged 5.8% of transaction value in 2022, compared to the SDG target of 3%.

Figure 4 summarizes the relative prominence of barriers as reported by unbanked adults in nationally representative survey data.

Figure 4. Perceived Barriers to Financial Inclusion Among Unbanked Adults, Uzbekistan (2022)

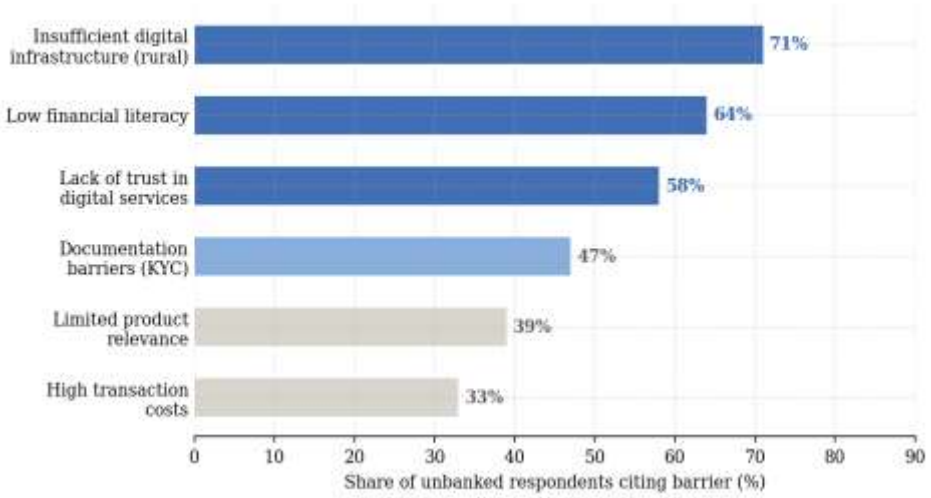

Figure 4. Perceived Barriers to Financial Inclusion Among Unbanked Adults, Uzbekistan (2022) Source: Ministry of Finance of Uzbekistan (2022); World Bank Findex supplemental surveys; author's compilation. Note: Respondents could identify multiple barriers; shares do not sum to 100%.[18]

Comparative Regional Analysis

Figure 3 and Table 2 present a comparison of financial inclusion and Fintech adoption indicators across Uzbekistan and five peer economies.

Figure 3. Financial Inclusion Indicators: Regional Comparison (2022)

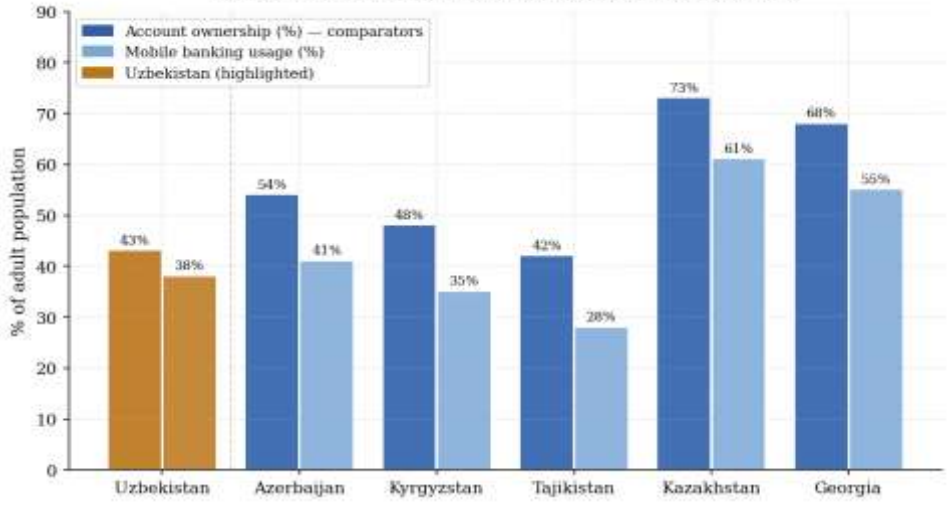

Figure 3. Financial Inclusion Indicators: Regional Comparison (2022) Source: World Bank Global Findex (2022); Central banks of respective countries; author's compilation. Note: Uzbekistan highlighted in amber for visual distinction.

Table 2. Structured Comparative Analysis: Fintech and Financial Inclusion Dimensions (2022)

Dimension	Uzbekistan	Kazakhstan	Georgia	Azerbaijan	Kyrgyzstan
Account ownership (% adults)	43%	73%	68%	54%	48%
Mobile banking usage (%	38%	61%	55%	41%	35%

Dimension	Uzbekistan	Kazakhstan	Georgia	Azerbaijan	Kyrgyzstan
adults)					
Mobile internet penetration (%)	64%	82%	74%	77%	52%
Regulatory sandbox	Absent	Operational	Operational	Partial	Absent
Payment system interoperability	Partial	High	High	Medium	Low
Digital identity infrastructure	Developing	Mature	Mature	Developing	Basic
Remittance cost via formal banks (%)	5.8%	3.2%	2.9%	4.4%	6.1%

Source: World Bank Findex (2022); ITU (2023); GSMA Mobile Money Report (2022); author's compilation.

Kazakhstan's trajectory offers the most instructive comparator. The introduction of a unified digital identification system (eGov.kz), implemented in conjunction with a fully interoperable instant payment infrastructure (KASPI Pay ecosystem), preceded and likely enabled the acceleration in mobile banking uptake observed between 2018 and 2022. The regulatory sandbox introduced by the Agency for Regulation and Development of the Financial Market in 2020 allowed ten Fintech startups to pilot products under relaxed prudential requirements within eighteen months, accelerating product innovation cycles.

Georgia's experience highlights the role of market structure: the high concentration of the Georgian banking sector (two banks control over 70% of assets) paradoxically facilitated rapid digital infrastructure investment, as the leading banks had both incentive and capacity to build proprietary super-app ecosystems serving as primary customer interfaces. Georgia's National Bank further streamlined open banking data-sharing standards in 2021, enabling third-party Fintech integration with commercial bank accounts.

Kyrgyzstan and Tajikistan present cautionary cases: both countries share Uzbekistan's infrastructure constraints, and neither has advanced toward a functional regulatory sandbox, with the result that mobile banking penetration has plateaued well below regional peers despite comparable mobile device penetration rates. This suggests that device access alone is insufficient — institutional and regulatory complementarity is required.[19]

Discussion

The findings of this study support and extend the ecosystem view of financial inclusion (Sahay et al., 2020; Claessens et al., 2018) by demonstrating that Uzbekistan's rapid Fintech growth has not automatically translated into broad-based inclusion outcomes. The evidence points to a pattern of "inclusion breadth without inclusion depth": aggregate digital banking uptake metrics have improved dramatically, but the demographic and geographic distribution of inclusion remains highly unequal.

Three theoretical implications emerge from the analysis. First, the strong urban-rural gap in inclusion outcomes, despite relatively uniform national mobile banking statistics, confirms that aggregated metrics mask structural inequalities and calls for disaggregated data collection and reporting standards as a regulatory priority. Second, the barrier analysis suggests that demand-side constraints — particularly financial literacy deficits and trust gaps — are at least as binding as supply-side factors in the Uzbek context, contrary to the predominant supply-side focus of current policy interventions. Third, the comparative evidence underscores the

complementarity between Fintech deployment and non-banking infrastructure: digital identity, payment system interoperability, and regulatory predictability function as structural preconditions, not auxiliary enhancements.

For commercial banking practice, these findings imply that institutions focused exclusively on acquiring registered users — the dominant KPI in current digital banking strategy — may be building a misleading picture of inclusion progress. A shift toward active usage rates, product breadth per digital customer, and geographic dispersion of genuinely active accounts would better capture inclusion quality.

Conclusion

This article has documented Uzbekistan's significant but incomplete progress toward Fintech-enabled financial inclusion over 2019–2023. While mobile banking user growth and cashless payment adoption have accelerated at rates among the highest in the region, persistent structural barriers prevent these gains from reaching the rural poor, women, youth, and low-income households most in need of financial access.

On the basis of the analysis, the following targeted recommendations are directed at three levels of the financial system:

For policymakers and regulators:

1. Establish a fully operational regulatory sandbox for Fintech innovation, modeled on the Georgian and Kazakhstani frameworks, with a streamlined six-month licensing pathway for pilot-stage products targeting underserved populations.
2. Mandate full technical interoperability between Uzcard and HUMO payment systems by a defined statutory deadline, and establish a bilateral remittance corridor agreement with the Russian Federation and other major labor migration destinations to reduce formal remittance costs to the 3% SDG target.
3. Accelerate the deployment of a mature digital identity infrastructure in rural districts as a necessary precondition for remote KYC-compliant account opening, leveraging the existing state electronic identification system.

For commercial banks:

1. Redesign mobile banking onboarding flows to embed mandatory, gamified financial literacy modules, with differentiated content for rural, female, and youth user segments, in cooperation with the Ministry of Finance financial literacy program.
2. Introduce genuinely tailored product portfolios for underserved segments — including micro-savings products with zero minimum balance, agricultural-cycle-aligned micro-credit, and simplified micro-insurance — rather than extending urban-oriented product menus to new digital channels.
3. Develop agent banking networks in districts with below-threshold digital infrastructure, creating human-mediated access points that bridge the digital divide while the infrastructure matures.[20]

Future research should extend this analysis through primary survey data collection, econometric modeling of causal relationships between specific Fintech interventions and inclusion outcomes, and longitudinal tracking of digital banking quality indicators at household level. An enterprise-level survey of commercial bank digital strategy priorities would further illuminate the institutional drivers of inclusion investment decisions.

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