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EXPANDING THE FINANCIAL CAPABILITIES OF LOW-INCOME FAMILIES THROUGH DIGITAL FINANCIAL SERVICES



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Abstract: the active digitalization of the financial sector in Uzbekistan creates significant opportunities for increasing financial inclusion and strengthening the economic resilience of low-income families. The development of digital financial services is becoming a key tool for poverty reduction, as digital technologies reduce transaction costs, provide access to financial instruments, improve financial literacy, and support the development of family entrepreneurship. This article examines the theoretical foundations of digital financial services, the mechanisms by which they influence the financial empowerment of low-income families in Uzbekistan, and analyzes international experience that can be adapted to national conditions. The study draws on data from Global Findex, the Central Bank of Uzbekistan, the Ministry of Digital Technologies, and international organizations, demonstrating real trends in the development of digital financial infrastructure. The findings confirm the strategic importance of digital financial services in increasing financial inclusion, strengthening household economic self-sufficiency, and reducing poverty in the country.

Key words: digital financial services, financial inclusion, low-income families, fintech, mobile payments, online banking, digital wallets, microfinance, digital economy, financial literacy.

Annotatsiya: O'zbekistonda moliya sektorining faol raqamlashtirilishi moliyaviy inkluzivlikni oshirish va kam ta'minlangan oilalarning ijtimoiy-iqtisodiy holatini yaxshilash uchun katta imkoniyatlar yaratadi. Raqamli moliyaviy xizmatlarni rivojlantirish qashshoqlikni kamaytirishning asosiy vositasiga aylanib bormoqda, chunki raqamli texnologiyalar tranzaksiya xarajatlarini kamaytiradi, moliyaviy vositalardan foydalanish imkonini beradi, moliyaviy savodxonlikni oshiradi va oilaviy tadbirkorlikni rivojlantirishni qo'llab-quvvatlaydi. Ushbu maqolada raqamli moliyaviy xizmatlarning nazariy asoslari, ularning O'zbekistondagi kam ta'minlangan oilalarning moliyaviy imkoniyatlarini kengaytirishga ta'sir qilish mexanizmlari o'rganiladi va milliy sharoitlarga moslashtirilishi mumkin bo'lgan xalqaro tajriba tahlil qilinadi. Tadqiqot Global Findex, O'zbekiston Markaziy banki, Raqamli texnologiyalar vazirligi va xalqaro tashkilotlarning ma'lumotlariga asoslanib, raqamli moliyaviy infratuzilmani rivojlantirishdagi real tendensiyalarni namoyish etadi. Topilmalar raqamli moliyaviy xizmatlarning moliyaviy inkluzivlikni oshirish, uy xo'jaliklarining iqtisodiy o'zini o'zi ta'minlashini mustahkamlash va mamlakatda qashshoqlikni kamaytirishdagi strategik ahamiyatini tasdiqlaydi.

Kalit so'zlar: raqamli moliyaviy xizmatlar, moliyaviy inkluzivlik, kam ta'minlangan oilalar, fintech, mobil to'lovlar, onlayn bank, raqamli hamyonlar, mikromoliyalashtirish, raqamli iqtisodiyot, moliyaviy savodxonlik.

Аннотация: Активная цифровизация финансового сектора в Узбекистане создаёт широкие возможности для повышения уровня финансовой инклюзии и укрепления социально-экономической устойчивости малообеспеченных семей. Развитие цифровых финансовых услуг становится ключевым инструментом снижения бедности благодаря тому, что цифровые технологии уменьшают транзакционные издержки, обеспечивают доступ к финансовым инструментам, повышают финансовую грамотность и поддерживают развитие семейного предпринимательства. В настоящей статье рассматриваются теоретические основы цифровых финансовых услуг, механизмы их влияния на расширение финансовых возможностей малообеспеченных семей в Узбекистане и анализируется международный опыт, который может быть адаптирован для национальных условий. Исследование опирается на данные Global Findex, Центрального банка Узбекистана, Министерства цифровых технологий и международных организаций, демонстрируя реальные тенденции развития цифровой финансовой инфраструктуры. Полученные результаты подтверждают стратегическую значимость цифровых финансовых услуг в повышении финансовой доступности, укреплении экономической самодостаточности домохозяйств и снижении уровня бедности в стране.

Ключевые слова: цифровые финансовые услуги, финансовая инклюзия, малообеспеченные семьи, финтех, мобильные платежи, онлайн банкинг, цифровые кошельки, микрофинансирование, цифровая экономика, финансовая грамотность.

INTRODUCTION

Digital technologies are rapidly transforming the financial system, creating new models of interaction between consumers and financial institutions. As the digitalization of the economy accelerates, Uzbekistan views the development of digital financial services as a key instrument of socio-economic progress. The country's strategic reforms aim to increase financial inclusion, reduce poverty, expand economic activity, and strengthen the social protection of citizens.

Low-income families represent one of the most vulnerable population groups, facing numerous financial barriers. These barriers include the absence of a bank account, insufficient levels of financial and digital literacy, low income, geographic remoteness from banking institutions, and limited access to credit resources. Additional difficulties arise from traditional banking requirements, which often exclude individuals with irregular income from the formal financial sector.

In this context, digital financial services play a critically important role. They create conditions under which low-income families can utilize financial tools without significant costs or administrative barriers. Mobile applications, digital wallets, online banking, and electronic payment systems accelerate and simplify financial operations, broaden entrepreneurial activity, improve household budget management, and expand access to credit. According to Global Findex 2023, the share of adults in Uzbekistan holding a bank account increased to 60 percent, compared to 37 percent in 2017. Such progress became possible due to the active introduction of digital financial services.

The purpose of this article is to provide a comprehensive examination of the theoretical foundations of digital financial services, explore their impact on the financial capabilities of low-income families in Uzbekistan, and analyze international experience that may be applied within the framework of national reforms.

REVIEW OF LITERATURE ON THE SUBJECT

Digital financial services are the subject of active research by both foreign and domestic scholars. In modern conditions, expanding the financial capabilities of low-income families is viewed as an integral component of building an inclusive digital economy. The foundation of this development lies in mobile payments, digital wallets, and online services, which ensure the accessibility of financial transactions regardless of users' income level or place of residence (Demirgüç-Kunt, Klapper, Singer, 2022).

According to studies by Suri and Jack, digital payment platforms should be regarded as a continuous process of transforming household financial behavior, shaped by a combination of economic and social factors. The authors emphasize that digital tools have become a contextual element of the financial life of low-income families, as they provide fast access to transfers, savings, and microloans, thereby increasing resilience to crisis situations (Suri & Jack, 2016). Similar conclusions are presented in GSMA research, which highlights the role of mobile money in expanding the economic activity of vulnerable groups.

In the context of the dynamic development of the digital economy, many researchers point to the need to implement modern digital mechanisms to improve the quality of social payments and the targeting of state support. Khera (2021) notes that the integration of digital identification and electronic registries makes it possible to minimize errors in the distribution of assistance and accelerate the receipt of funds by poor households. Uzbekistan's experience also demonstrates the positive impact of digitalization in the social sphere, where the introduction of the Unified Social Protection Registry has enhanced the transparency and efficiency of population support.

RESEARCH METHODOLOGY

The methodology for studying the expansion of financial opportunities for low-income families through digital financial services depends on the specific features of the economic situation, the level of digitalization, and the structure of social support. Effective research requires a comprehensive approach that combines macroeconomic analysis, assessment of the development of digital platforms, examination of user behavior, and evaluation of the impact of government support programs.

This study is empirical and is based on the use of mixed research methods. It employs both qualitative and quantitative approaches: analysis of regulatory documents, statistics from the Central Bank and the Ministry of Economy and Finance, examination of academic publications, comparison of international experience, and evaluation of data reflecting the practice of implementing digital finance in Uzbekistan.

The combined use of these methods makes it possible to identify key mechanisms of digital financial inclusion and assess their impact on strengthening the financial resilience of low-income families.

ANALYSIS AND RESULTS

Digital financial services are gradually becoming a central element of modern economic infrastructure, providing access to payments, lending, savings, and government transfers through electronic channels. Their development is linked to the global transformation of the financial system, where digital technologies reshape the principles of interaction between households, financial institutions, and the state. For low-income families, this transformation often becomes a key tool for overcoming barriers to basic financial services, which makes the analysis of the theoretical foundations of digital financial services particularly relevant.

The transition to digital formats is based on several fundamental economic and technological concepts. One of them is the theory of transaction costs, proposed by Ronald Coase and developed by Oliver Williamson. According to this theory, every financial operation involves costs—time, money, and risk. Digital technologies reduce these costs to a minimum, as they eliminate intermediaries, remove physical barriers, and automate processes. For low-income families, this means the ability to conduct financial transactions without visiting banks, spending money on transportation, or waiting in queues—an especially important advantage in the context of Uzbekistan.

Another theoretical foundation is the concept of financial inclusion, developed by the World Bank and the G20. It states that sustainable development is possible when financial services are accessible to all segments of the population without discrimination. Digitalization significantly expands this accessibility, as mobile payments, electronic wallets, and microfinance platforms make it possible to reach households previously excluded from the financial system. International studies show that the introduction of digital payments increases population engagement in financial activity by 20–30 percent, and in some countries even doubles it. For low-income families, this provides not only access to services but also the ability to build savings, participate in economic activities, and receive social benefits without delays.

A crucial component of the theoretical understanding of digital finance is the concept of the digital divide, which describes unequal access to digital resources. This is especially important in analyzing low-income families, since access to a smartphone, the internet, and digital literacy affects the extent to which modern financial technologies can deliver their full impact. In Uzbekistan, this factor remains significant—particularly in rural areas, where mobile internet penetration and the cost of devices still limit the use of digital services.

In exploring the theoretical foundations, it is also necessary to examine the classification of digital financial services, as it shapes the structure of further analysis. The key categories include:

- digital payments — mobile wallets, online banking, QR payments, remote transfers;
- digital lending — online microloans, big-data-based scoring systems;
- digital savings and deposits — automated savings, digital deposit products;
- digital insurance — insurance products issued through mobile applications;
- electronic government transfers — social benefits paid directly to cards or electronic accounts;
- digital identification and infrastructure — biometrics, digital ID, open APIs.

Each of these elements has its own functions and advantages, which collectively create the conditions for expanding the financial capabilities of low-income families. For example, digital payments eliminate geographic and time barriers; online lending reduces the dependence on traditional credit histories; and electronic social transfers eliminate intermediaries and delays.

Institutional and legal foundations also play an important role in ensuring the stability of the digital financial system. In Uzbekistan, the development of digital financial services is supported by national digital transformation strategies, the expansion of the Uzcard and HUMO ecosystems, the growth of fintech companies, and the integration of state platforms such as my.gov and INSON. Public policy actively promotes the expansion of digital

channels, including the creation of a unified social registry, the digitalization of benefits, and the development of user-friendly interfaces for accessing social services. This creates a favorable environment for scaling digital solutions that provide financial support to the most vulnerable groups of the population.

Digital financial services are shaping a new model of interaction between consumers and financial institutions, relying on theories of reducing transaction costs, increasing data processing speed, and expanding access to financial instruments. The theoretical foundation of digitalization includes the effects of the network economy, in which the value and convenience of services increase as the number of users grows. This trend is especially evident in Uzbekistan, where over the past five years the number of active mobile payment users has exceeded 20 million (Table 1).

Table 1. Key indicators of the banking system (2022–2024)

Indicator	2022 (bln UZS)	2023 (bln UZS)	2024* (bln UZS)
Bank assets	551,200.3	612,480.7	652,157.1
Loans issued	395,870.4	432,120.9	471,405.5
Deposits	198,560.1	225,370.4	241,686.6

The presented table reflects the dynamics of the key aggregated indicators of Uzbekistan's banking system for the period 2022–2024 and demonstrates stable growth across all major areas of banking activity. Bank assets increase each year: in 2022 their volume amounted to approximately 551.2 trillion UZS, rising to 612.4 trillion UZS in 2023, and reaching 652.1 trillion UZS in 2024. This trend indicates the expansion of the banking sector, the growth of loan portfolios, and the strengthening of financial activity in the economy.

A similar trend is observed in the volume of loans issued, which increased from 395.8 trillion UZS in 2022 to 432.1 trillion UZS in 2023 and reached 471.4 trillion UZS in 2024. This reflects improved access to financial resources for businesses and the population, rising investment activity, and the intensification of bank lending in the context of economic stabilization.

The deposit base also demonstrates steady growth, indicating increased trust of households and businesses in the banking system. In 2022, the total volume of deposits amounted to 198.5 trillion UZS, rising to 225.3 trillion UZS in 2023, and reaching 241.6 trillion UZS in 2024. The growth in deposits is directly linked to higher financial literacy, improved banking products, and the development of digital platforms that encourage cashless savings.

Digital financial technologies are transforming access to money and financial services, enabling low-income households to acquire real tools for strengthening their economic resilience. This impact is rooted in the reduction of transaction costs, acceleration of payments, and expansion of lending channels. The data confirm this trend: the total transaction volume of payment organizations in Uzbekistan increased from approximately 55 trillion UZS in 2021 to around 116 trillion UZS in 2022—more than doubling—while online payments for utilities rose from 2.63 trillion UZS to 8.94 trillion UZS, a 3.4-fold increase.

The expansion of financial opportunities for low-income families begins with simplifying everyday payments. The use of mobile applications reduces the direct financial expenses of households. In Uzbekistan, the number of digital wallet users exceeds 20 million, and the share of cashless transactions in several sectors has surpassed 60 percent. Low-income families save on transportation, fees, and time, as payments for utilities, taxes, mobile services, and purchases are completed within seconds. For example, the applications Click, Payme, Apelsin, and OSON process millions of transactions daily. If an average trip to a bank previously cost a family 8–10 thousand UZS, annual savings can reach 120–150 thousand UZS—equivalent to a portion of a low-income household's monthly budget.

A logical continuation of this process is simplified access to credit through digital scoring. Digital technologies make it possible to assess creditworthiness not through income certificates but through a customer's real financial behavior. Scoring evaluates more than 50 indicators, including the frequency of mobile top-ups, payment regularity, transfer history, and digital activity. As a result, mobile micro-lending has increased by more than 40 percent in recent years. For low-income families, this means the ability to quickly obtain small loans for medical needs, education, home repairs, or micro-entrepreneurship. For instance, fintech companies offer online loans from 200,000 to 5 million UZS within minutes. In rural areas, where bank branches are often 10–15 km away, such mechanisms significantly facilitate access to financing.

The third mechanism concerns the digitalization of social transfers. Government programs are moving to digital formats. More than 90 percent of social benefits in Uzbekistan are transferred to Uzcard and HUMO cards, ensuring timely receipt of assistance. This eliminates intermediaries, reduces errors, and enhances

transparency in the allocation of funds. For example, a family receiving child benefits receives the payment directly on a card, and the notification appears in a mobile app. This enables budget planning and reduces the risk of delays, which previously could last several days.

Closely related to this is improved security of financial operations. Modern digital services use fingerprint authentication, Face ID, one-time passwords, and push confirmations. More than 12 million users in Uzbekistan have completed digital identification. For low-income families, where every sum of money is significant, the security of financial transactions plays a crucial role. Even in the event of a lost phone or card, access can be blocked within seconds.

Additional potential emerges through the integration of low-income families into micro-entrepreneurship. For households seeking to increase income, digital payments open new sources of earnings. The number of points accepting QR payments has grown from about 10,000 to more than 150,000. This allows market vendors, self-employed individuals, artisans, and service providers to accept digital payments without complex equipment. For example, a small vendor who previously accepted only cash may increase sales by 25–40 percent after connecting to Click or Payme, as customers increasingly prefer cashless payments.

An important element of support is the improvement of financial literacy through built-in tools in mobile applications. These apps automatically analyze expenses, offer budgeting recommendations, and send payment reminders. Practice shows that roughly 10–15 percent of users begin forming savings after automated expense analysis. For low-income families, this is crucial, as even small savings enhance resilience to unexpected financial challenges.

The integration of government digital platforms fits naturally into this system. Platforms such as my.gov, Inson, and digital registries enable online applications, checking the status of benefits, and receiving subsidies without visiting institutions. This reduces queues, minimizes bureaucracy, and saves time. For low-income households—where adults often work informally or have limited time—these solutions are particularly convenient.

Finally, increased transparency in the economy through digital payments helps reduce the scale of the shadow economy. The share of cashless transactions—rising from less than 5 percent to 60 percent in certain sectors—expands the tax base and improves the distribution of social support. In the long term, this creates greater opportunities for financing programs aimed at supporting low-income families.

Studying international experience in digital financial technologies provides a deeper understanding of which mechanisms and strategies most effectively expand the financial capabilities of low-income families. Global practice shows that the digitalization of the financial sector can significantly reduce poverty, increase economic activity, and decrease social inequality. Although these processes differ across countries, they share one common feature — digital financial tools have become the primary channel of access to economic resources for millions of people (Table 2).

Table 2. Comparative overview of international digital financial technology experience

Country	Key Technology / Model	Population Coverage	Effects for Low-Income Families
Kenya	M-Pesa (mobile payments without a bank account)	90% of households use the service	194,000 families lifted out of extreme poverty; incomes increased by 20–30%
India	Aadhaar (digital ID) + UPI (instant payments) + DBT (direct social transfers)	Financial inclusion increased from 53% to 80%; ×300 growth of digital transactions	Leakage of social payments reduced by 41%; significant decline in corruption; faster benefit distribution
China	Alipay and WeChat Pay; QR economy; fintech infrastructure	1.1 billion users; cashless payments exceed 85%	Microbusiness turnover increased by 30–60%; rise in self-employment; higher household incomes
Bangladesh	bKash (mobile wallets, microloans, benefits)	60+ million users	Probability of having savings increased by 9%; recovery after crises 26% faster
EU Countries	Neobanks: Revolut, N26, Monzo; digital IDs	70–80% of adults use digital financial services	Lower cost of banking services; financial inclusion of migrants and socially vulnerable groups
USA	Chime, CashApp, PayPal; digital government payments	20 million previously unbanked gained access to accounts	Digital COVID-era payments reached 160 million households; benefit delivery accelerated from months to days

The transition from traditional banking services to digital solutions is especially noticeable in low- and middle-income countries, where mobile financial instruments compensate for weak banking infrastructure. Kenya's M-Pesa model demonstrates that even basic mobile payments can radically transform economic behavior: over 90 percent of households use the service, and incomes of poor families have increased by 20–30 percent. This example confirms that widespread digitalization of payments creates favorable conditions for reducing extreme poverty.

India's model illustrates another mechanism of impact — the integration of digital identification, instant payments, and direct public transfers. Through Aadhaar, UPI, and the DBT program, India managed to reduce leakage in social payments by 41 percent and expand access to financial services to more than 80 percent of the population. This experience is especially valuable as it demonstrates the strategic importance of digital infrastructure both for government support programs and for the financial resilience of low-income families.

The Chinese and Bangladeshi examples confirm that digital fintech platforms stimulate self-employment and the development of microbusinesses. In China, digital payments increased small business turnover by 30–60 percent, directly improving the incomes of low-income families. In Bangladesh, the bKash service has become a foundation of financial stability for rural households, increasing their likelihood of maintaining savings and reducing financial vulnerability.

The experience of developed countries — EU member states and the United States — shows that digital banking solutions and fintech platforms play a crucial role in integrating vulnerable groups into the financial system. European neobanks have substantially reduced the cost of banking services, making them accessible to migrants and low-income families, while U.S. digital payments during the pandemic demonstrated that modern systems can reach tens of millions of households in a very short time.

CONCLUSIONS AND SUGGESTIONS

Digital financial services are becoming a key instrument for expanding the financial capabilities of low-income families in Uzbekistan. Their development helps reduce costs, increase access to financial tools, improve financial literacy, and stimulate entrepreneurial activity. International experience shows that digitalization is an effective mechanism for reducing poverty, which—when properly adapted—can deliver significant results.

Uzbekistan is actively developing its digital financial infrastructure, implementing national payment systems, supporting the growth of fintech companies, and expanding access to internet services. All these efforts create favorable conditions for strengthening the financial resilience of low-income families and building an inclusive economy.

The further development of digital financial services in the country requires a comprehensive approach that includes improving financial literacy, supporting innovation, enhancing digital infrastructure, and expanding mechanisms of social protection.

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