

Banking and Finance in Low-Income Countries: Challenges, Access, and Development

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ABSTRACT: Banking and financial systems play a central role in the development of low-income countries by mobilizing savings, facilitating payments, allocating credit, supporting investment, and helping households and firms manage financial risks. This review examines the structure, accessibility, performance, and development implications of banking and finance in low-income economies. Particular attention is given to financial inclusion, household and enterprise credit, agricultural and rural finance, institutional and regulatory challenges, microfinance and cooperative finance, digital financial services, and their relationships with economic growth, poverty reduction, inequality, entrepreneurship, employment, and household resilience. The review shows that substantial progress has been made through mobile money, agent banking, microfinance, digital payments, and other innovative delivery channels. However, important barriers remain, including high service costs, geographical distance, irregular income, inadequate collateral, limited financial and digital literacy, weak infrastructure, gender disparities, institutional weaknesses, cybersecurity risks, and insufficient consumer protection. Further evidence indicates that greater financial access alone does not guarantee inclusive development.

Developmental benefits depend on active and productive use of financial services, affordability, service quality, sound regulation, effective institutions, and appropriate protection of consumers. Microfinance and digital finance can extend services to underserved populations, although their impacts are heterogeneous and may be weakened by over-indebtedness, digital exclusion, fraud, or inappropriate product design. Overall, the review concludes that sustainable financial development in low-income countries requires an integrated approach combining wider access with stronger institutions, responsible innovation, financial capability, effective regulation, and financial stability.

Keywords: *Banking system, financial inclusion, low-income countries, access to credit, microfinance, digital finance, financial development, poverty reduction,*

Introduction

Banking and financial systems are important to economic development because they mobilize savings, facilitate payments, allocate capital, provide credit, and help households and firms manage financial risk. These functions are especially important in low-income countries, where formal financial markets are often shallow and many households and small businesses rely on cash or informal sources of finance. When financial institutions are accessible and efficient, they can connect savings with productive investment and widen economic opportunity. Cross-country evidence suggests that financial development can benefit poorer groups through both economic growth and reductions in income inequality and poverty (Beck et al., 2007). For this reason, the reach and quality of banking and finance are central issues in the development of low-income economies.

Financial inclusion is one of the main themes in this literature. It concerns access to and use of formal services such as bank accounts, savings, payments, and credit. Research shows that account ownership and use depend on both individual characteristics and country-level conditions, including the cost of financial services and the availability of providers (Allen et al., 2016). In poorer economies, distance, low and irregular income, documentation requirements, and limited financial capability can restrict participation in formal banking. Evidence from Bangladesh further shows that banking access can contribute to poverty reduction. Iqbal et al. (2020) find that the deposit channel was particularly important in their sub-district-level analysis, indicating that the development

role of banking is not limited to lending; safe savings and transaction services can also support household resilience and economic activity.

However, a larger financial sector does not automatically produce inclusive development. Outcomes depend on who receives financial services, their affordability, and the efficiency and regulation of financial institutions. Using evidence that includes 66 low-income countries, de Moraes and Cruz (2023) find that banking availability, relevance, and financial efficiency are associated with lower inequality and poverty, while also identifying nonlinear effects. This suggests that policy should focus not only on expanding banking, but also on the quality and distribution of access. Microfinance has also been used to reach low-income households and microenterprises that conventional banks may consider costly or risky. Yet Cull et al. (2009) show that microfinance faces a continuing trade-off between commercial sustainability and reaching the poorest clients, highlighting the importance of balancing financial viability with social outreach.

Digital finance has created another route to financial access. Mobile money and digital payments can reduce geographic and transaction-cost barriers where physical banking infrastructure is limited. Evidence from Kenya shows that the expansion of mobile money produced long-run improvements in household welfare and reduced extreme poverty, with important effects for women (Suri & Jack, 2016). Recent evidence from least developed countries, a category that is related to but not identical to the low-income-country classification, also links financial inclusion with higher income per person. Afonso and Blanco-Arana (2024) report positive relationships between several dimensions of financial inclusion and GDP per capita, with accessibility among the most robust dimensions. These findings show the potential of digital and inclusive finance while also underlining the importance of affordability, regulation, institutional quality, and user capability.

Against this background, this review examines the core relationship between banking, finance, and development in low-income countries. It focuses on banking-system structure, financial inclusion, access to credit, institutional and regulatory challenges, microfinance, digital finance, and the links between financial services, poverty reduction, investment, and economic growth. The central argument is that wider financial access can create important development opportunities, but access alone is not sufficient. Sustainable benefits depend

on whether financial systems provide affordable, reliable, efficient, and appropriately regulated services to households and firms that have historically been underserved.

2. Structure of the Banking and Financial System

The financial system of low-income countries is generally characterized by a strong dependence on banking institutions, relatively limited capital-market development, and the coexistence of formal and informal sources of finance. Financial institutions perform important functions by mobilizing savings, allocating capital, facilitating transactions, managing risk, and reducing information problems between borrowers and lenders (Levine, 1997; Levine et al., 2000). Empirical evidence also indicates that the development of financial intermediaries can improve resource allocation, productivity, and long-run economic growth (Beck et al., 2000; Beck & Levine, 2004). However, the depth, accessibility, and efficiency of financial systems vary considerably across countries, particularly between low-income and more developed economies (Beck et al., 2010; Demirgüç-Kunt et al., 2013).

2.1 Role of Commercial Banks and Central Banks

Commercial banks constitute the core of the formal financial system in many low-income countries. They mobilize deposits from households and businesses and transform these savings into loans for investment, consumption, trade, and business expansion. The importance of banks is particularly high where stock and bond markets are small or illiquid, leaving firms with fewer alternative sources of external finance (Levine et al., 2000; Beck & Levine, 2004; Demirgüç-Kunt et al., 2013).

Research has shown that stronger financial intermediation can reduce financing constraints and improve the allocation of investment. Love (2003), for example, finds that financial development reduces financing constraints faced by firms. Similarly, Beck et al. (2005) demonstrate that small and medium-sized enterprises experience greater financial obstacles than large firms, making the accessibility of bank credit especially important in developing economies.

Nevertheless, the existence of commercial banks does not necessarily guarantee broad financial access. Cross-country research identifies substantial differences in branch

penetration, account ownership, loan availability, fees, minimum balance requirements, documentation requirements, and other barriers to banking services (Beck et al., 2007; Beck et al., 2008). Financial outreach therefore depends not only on the size of the banking sector but also on competition, infrastructure, regulation, institutional quality, and the costs of delivering financial services (Claessens, 2006; Honohan, 2008).

Central banks perform a complementary role by managing monetary policy, issuing and maintaining the currency, supervising financial institutions, supporting payment systems, and promoting monetary and financial stability. Mishra and Montiel (2013) show that monetary-policy transmission tends to be relatively weak in many low-income countries because financial markets are shallow, banking systems may be concentrated, institutional capacity can be limited, and changes in policy rates do not always translate effectively into market and lending rates. Thus, the structure and efficiency of commercial banking directly influence the ability of central banks to transmit monetary policy to the wider economy.

Overall, commercial banks and central banks are closely connected. Commercial banks provide the principal channel through which savings and credit are allocated, while central banks establish the monetary and regulatory environment in which financial institutions operate. A stable and competitive banking system can therefore strengthen both financial intermediation and monetary-policy effectiveness.

2.2 Formal and Informal Financial Institutions

A distinctive characteristic of financial systems in many low-income countries is the coexistence of formal and informal institutions. Formal institutions include commercial banks, development banks, microfinance institutions, credit cooperatives, insurance companies, savings institutions, and other regulated financial intermediaries. However, formal financial services are often inaccessible to significant parts of the population because of high costs, geographical distance, documentation requirements, low or irregular income, and limited financial infrastructure (Claessens, 2006; Beck et al., 2008; Honohan, 2008).

Studies of financial inclusion consistently show that income, education, institutional conditions, financial-service costs, and physical access influence whether individuals use formal financial institutions. Allen et al. (2016) find that account ownership and use are

strongly related to both individual characteristics and country-level financial and institutional conditions. Similarly, Beck et al. (2007) demonstrate substantial cross-country variation in the outreach of banking services. These findings are particularly relevant to low-income economies, where the distance between formal financial institutions and underserved households can remain considerable.

Microfinance institutions emerged partly in response to this gap. Morduch (1999) identifies microfinance as an important innovation in attempts to expand financial services among poor households, although he also emphasizes limitations in the evidence concerning its broader development effects. Cull et al. (2009) similarly show that microfinance institutions must balance their social objectives of reaching poorer clients with the financial requirements of sustainability. Beck et al. (2013) further suggest that smaller and specialized financial institutions can play an important role in improving financial access for smaller firms.

Informal financial institutions remain important where the formal sector cannot adequately meet demand. Informal finance includes moneylenders, rotating savings and credit associations, community savings groups, family and friend networks, traders, and other unregulated credit arrangements. Evidence from African economies indicates that informal financial providers frequently serve market segments that formal banks cannot easily reach and remain important for mobilizing household savings and financing small businesses (Steel et al., 1997).

Informal finance can provide flexibility, personal knowledge of borrowers, fewer documentation requirements, and rapid access to funds. Aleem's (1990) study of rural credit markets in Pakistan demonstrates how information, borrower screening, monitoring, and loan-recovery costs contribute to the high cost of informal lending. Therefore, informal institutions should not simply be viewed as competitors to formal banks; they often arise because formal financial markets are incomplete or inaccessible.

The literature consequently suggests that formal and informal finance frequently coexist rather than operate as complete substitutes. Expanding formal banking, microfinance, cooperatives, and other accessible financial institutions can gradually reduce financial exclusion, but the process depends on improvements in infrastructure, regulation,

competition, institutional quality, and the affordability of financial services (Claessens, 2006; Allen et al., 2016).

2.3 Development of Financial Markets

Financial markets in low-income countries are generally less developed than their banking sectors. Stock exchanges, corporate bond markets, government securities markets, and other long-term financing mechanisms may have limited capitalization, liquidity, investor participation, and institutional infrastructure. Cross-country evidence shows that both financial institutions and securities markets tend to deepen as economies develop (Beck et al., 2010; Demirgüç-Kunt et al., 2013).

The relative importance of banks and markets also changes with economic development. Demirgüç-Kunt et al. (2013) find that banking institutions are particularly important at lower levels of economic development, while securities markets become increasingly important as economies grow. This helps explain why many low-income countries remain predominantly bank-based financial systems.

However, the literature suggests that the central issue is not simply whether a country has a bank-based or market-based system. Beck and Levine (2002) find that overall financial development and the quality of legal institutions matter more for industrial growth and capital allocation than whether finance is primarily bank- or market-based. Their later analysis also shows that both banks and stock markets can contribute positively to economic growth (Beck & Levine, 2004).

Developed financial markets can complement banks by providing businesses and governments with longer-term and more diversified financing opportunities. Effective financial and legal institutions can also allow firms to obtain external funding and expand beyond the limits imposed by internally generated resources (Demirgüç-Kunt & Maksimovic, 1998; Love, 2003). However, capital-market development requires reliable information, investor protection, contract enforcement, effective regulation, macroeconomic stability, and adequate market infrastructure.

Therefore, strengthening the financial systems of low-income countries requires more than increasing the number of banks. Sustainable financial development involves improving

commercial banking, central-bank capacity, financial inclusion, specialized financial institutions, and formal financial markets simultaneously. The literature generally indicates that the quality, accessibility, and efficiency of the overall financial system are more important for economic development than the dominance of any single type of financial institution (Levine, 1997; Beck & Levine, 2002; Beck et al., 2007).

3. Financial Inclusion in Low-Income Countries

3.1 Concept and Dimensions of Financial Inclusion

Financial inclusion has become a central concept in development finance because exclusion from formal financial systems limits the ability of households and firms to save securely, make and receive payments, manage risk, and finance productive activities. Financial inclusion can be defined as the condition in which individuals and enterprises, particularly those historically underserved, can obtain and effectively use suitable formal financial services at a reasonable cost and with adequate protection. This conception emphasizes not only whether a service exists, but also whether it is physically and administratively reachable, affordable, regularly used, appropriate to users' needs, and delivered with sufficient quality and reliability (Claessens, 2006; Pesqué-Cela et al., 2021; Sarma & Pais, 2011). In low-income countries, this broader definition is especially important because formal financial sectors are often geographically concentrated, incomes are irregular, documentation is limited, and many households continue to depend on cash, informal savings arrangements, family networks, traders, or moneylenders.

The literature also distinguishes financial inclusion from the narrower idea of financial deepening. Financial deepening usually refers to the aggregate size or activity of financial institutions and markets, such as private credit, deposits, or financial assets relative to gross domestic product. A financial system can deepen while remaining socially and geographically concentrated; for example, commercial lending may expand primarily to large firms and higher-income urban clients. Cross-country evidence shows that banking outreach differs substantially even among countries with similar levels of financial development, indicating that the size of the financial sector does not by itself reveal who can access or use it (Beck et al., 2007; Honohan, 2008). Consequently, an assessment of inclusion in low-income countries must combine supply-side measures, such as branches, agents, automated teller machines, and service costs, with demand-side measures of

account ownership, product use, user experience, and barriers to participation (Demirgüç-Kunt et al., 2022; Pesqué-Cela et al., 2021).

3.1.1 Access and Availability

Access refers to the possibility that a person or firm can obtain a financial service when it is needed, while availability concerns the presence and reach of the institutions, delivery channels, and infrastructure through which the service is supplied. Physical availability is commonly represented by bank branches, automated teller machines, agents, microfinance outlets, post offices, cooperatives, or mobile-money agents relative to population or geographic area. A branch may be located nearby, yet a potential customer may remain excluded because of identification requirements, proof-of-address rules, minimum balances, collateral demands, limited operating hours, or discrimination. Beck et al. (2008) demonstrate that minimum balances, fees, documentation requirements, and other institutional barriers are systematically associated with lower banking outreach. Claessens (2006) similarly argues that access must be interpreted as the availability of reasonably priced services rather than the mere existence of financial institutions.

Availability is particularly constrained in low-income countries by dispersed rural populations, weak transport networks, limited electricity and telecommunications, and the high fixed cost of operating conventional bank branches. These structural conditions increase the cost of serving small-value customers and can make low-income or remote users commercially unattractive to traditional banks. Mobile platforms allow users to store value, transfer funds, and make payments through local agents, thereby lowering distance and transaction costs (Aron, 2018; Ozili, 2018). Nevertheless, digital availability remains conditional on mobile-phone access, network coverage, agent liquidity, electricity, identification systems, and the ability to convert electronic value into cash. For this reason, digital channels should be understood as extensions of the financial infrastructure rather than automatic substitutes for inclusive institutions.

3.1.2 Affordability

Affordability is the extent to which the direct and indirect costs of financial services are compatible with the limited and often irregular incomes of users. Indirect costs include transport expenses, time away from work, waiting time, repeated visits to complete

documentation, and the cost of maintaining a minimum balance. These expenses can be modest in absolute terms but prohibitive relative to the small transaction sizes of poor households. The evidence that price subsidies can raise demand for bank accounts more strongly than general financial education illustrates the importance of cost barriers in emerging markets (Cole et al., 2011). Similarly, experimental research on basic accounts shows that removing fees and locating services close to users can generate meaningful demand, although take-up does not always translate into frequent use (Dupas et al., 2018; Prina, 2015).

Affordability also requires transparent pricing. A service cannot be considered inclusive when nominal access is accompanied by complex fee structures, high effective interest rates, or charges that users cannot reasonably anticipate. This issue is important for small digital loans, microcredit, and insurance products, where frequent repayment, bundled fees, or exclusions may obscure the actual cost and value of the product. An affordable account should enable small and irregular deposits without eroding balances through fees; an affordable payment system should reduce rather than reproduce the cost of sending money; and an affordable credit product should not expose borrowers to repayment obligations that exceed their capacity. Affordability is thus closely connected to suitability, transparency, and consumer protection, which are elements of service quality rather than price alone.

3.1.3 Usage and Effective Participation

Usage refers to the actual and repeated employment of financial services. Common indicators include the frequency of deposits and withdrawals, digital payments, formal saving, formal borrowing, remittance transfers, and insurance coverage. Accounts can remain dormant, be used solely to receive a government transfer, or be controlled by another household member. Allen et al. (2016) show that account ownership and use are associated with both individual characteristics and country-level conditions, while Zins and Weill (2016) document substantial differences in the determinants of account ownership, saving, borrowing, and mobile-money use across African countries. These findings support the view that opening an account is a necessary but incomplete step toward inclusion.

The gap between access and active use can arise for several reasons. Products may not match the timing or size of household cash flows; branches or agents may be unreliable;

users may distrust institutions; balances may be vulnerable to fees; or people may lack the knowledge and confidence needed to transact. Financial literacy can improve participation by helping individuals understand products, compare costs, and manage accounts, although education works together with infrastructure and incentives rather than replacing them (Grohmann et al., 2018). Behavioral constraints also matter. Reviews of savings among low-income households identify transaction costs, social pressures, limited attention, and product design as obstacles to sustained saving (Karlan et al., 2014). Consequently, usage measures should capture regularity, duration, diversity of products, and the economic purpose of transactions rather than simply whether a customer has ever used a service.

3.1.4 Quality and Suitability

Quality describes whether financial services are reliable, safe, understandable, convenient, and appropriate for users' circumstances. It includes transparent terms, respectful treatment, data protection, effective complaint mechanisms, transaction security, product flexibility, and continuity of service. A widely available service may have limited developmental value when agents regularly lack cash, digital systems fail, insurance claims are rejected without clear explanation, or borrowers are subjected to coercive collection. Pesqué-Cela et al. (2021) note that many financial-inclusion indices emphasize quantitative supply-side indicators and do not adequately capture whether lower-income users receive appropriate and beneficial services. The multidimensional approach therefore requires indicators of service experience and outcomes alongside counts of accounts and access points.

Suitability is especially important because poor households face volatile income, frequent small transactions, and a high exposure to health, climate, employment, and price shocks. Quality also has a dynamic dimension: services should strengthen financial resilience rather than create new vulnerabilities. Digital finance illustrates this duality. It can reduce distance and improve convenience, but it can also expose users to fraud, privacy risks, opaque automated decisions, and rapid over-borrowing when regulation and consumer protection are weak (Aron, 2018; Ozili, 2018). Accordingly, the quality dimension connects financial inclusion to responsible finance and financial well-being.

3.1.5 Financial Access Versus Effective Financial Usage

The analytical distinction between access and use helps prevent an overstatement of progress. Access is a supply-and-eligibility concept: it asks whether a suitable service can reasonably be obtained. Usage is a behavioral concept: it asks whether people actually use the service and derive value from it. Non-use may be voluntary when a person has no current need, prefers cash, or avoids interest-based products for personal reasons. Expanding branches or accounts may address physical exclusion, whereas improving reliability, affordability, trust, literacy, and product design may be necessary to convert access into effective use (Beck et al., 2008; Claessens, 2006).

Experimental evidence underscores this distinction. In Uganda, Malawi, and Chile, the provision of basic accounts increased access, but only a minority of beneficiaries became active users, and average effects on broader economic outcomes were limited (Dupas et al., 2018). In Nepal, by contrast, convenient, low-cost savings accounts increased formal saving and produced changes in household financial behavior, illustrating how product design and context influence use (Prina, 2015). More informative indicators include account activity, the proportion of users saving or making digital payments, the persistence of usage, reductions in transaction costs, the ability to respond to shocks, and user-reported improvements in control and security. Effective inclusion exists when access is translated into sustained, informed, and beneficial participation.

3.1.6 Importance of Savings, Payments, Insurance, and Credit

A comprehensive approach to financial inclusion covers a portfolio of services because households and firms face different financial needs over time. Savings services allow users to separate consumption from income, accumulate funds for education or investment, and build buffers against emergencies. Low-income households do save, but they may use instruments that are insecure, costly, or vulnerable to social claims and theft. Formal or well-regulated savings products can improve security and self-control when they are accessible and adapted to small balances (Karlan et al., 2014; Prina, 2015). In low-income countries, therefore, inclusion should not be reduced to credit expansion; safe deposits may be equally or more important for resilience.

Payment services enable households and businesses to transfer value, receive wages and remittances, pay bills, and conduct trade. Their developmental importance is evident in mobile-money systems, which can widen participation even where conventional banking infrastructure is limited. Evidence from Kenya shows that mobile money reduced transaction costs and improved risk sharing by enabling households to receive transfers from a broader network in response to shocks (Jack & Suri, 2014). Longer-run evidence links expanded mobile-money access with higher consumption, lower extreme poverty, and occupational changes among women (Suri & Jack, 2016). These results show that the value of payments extends beyond convenience: a reliable transfer system can strengthen social insurance, liquidity management, and household resilience.

Insurance addresses risks that savings and informal support networks may be unable to absorb. Health problems, crop failure, livestock loss, natural disasters, and death can destroy assets and push vulnerable households into persistent poverty. In practice, take-up is often low because products are complex, trust is limited, claims processes are uncertain, and users may not understand exclusions. Research on rainfall insurance in India finds that price, trust, liquidity constraints, and product understanding all affect participation (Cole et al., 2013). This evidence reinforces the importance of quality and consumer protection: the presence of an insurance product does not constitute meaningful inclusion when users cannot evaluate its value or expect claims to be honored.

Credit can support investment, smooth temporary income shortages, and finance education, housing, agriculture, and enterprise growth. For small firms and low-income households, formal credit may provide an alternative to high-cost informal loans. Yet credit is the financial service most capable of producing harm when repayment capacity, pricing, or product design is poor. Inclusive credit should therefore be responsible, transparent, and linked to productive or welfare-enhancing purposes rather than measured simply by the volume of loans. The broader literature associates financial inclusion with development and poverty reduction, but these gains depend on the quality and distribution of services, not merely their expansion (Afonso & Blanco-Arana, 2024; Beck et al., 2007).

Taken together, savings, payments, insurance, and credit form an interdependent system. Payments provide an entry point and transaction history; savings build liquidity and resilience; insurance protects against severe losses; and credit enables expenditures that

exceed current resources. Households may require different combinations at different stages, and firms additionally need working-capital, merchant-payment, and risk-management services. It also directs policy attention from numerical outreach toward the capability of the financial system to provide a safe and useful range of services. For low-income countries, progress should be judged by whether underserved households and firms can obtain services that are available, affordable, actively used, and of sufficient quality to improve their economic choices and resilience (Allen et al., 2016; Demirgüç-Kunt et al., 2022; Sarma & Pais, 2011).

Table 1. Core dimensions of financial inclusion and indicative measures

Dimension	Meaning	Indicative measures
Access and availability	Whether services and delivery channels can reasonably be reached and obtained.	Branches, agents, ATMs, mobile coverage, eligibility, documentation, geographic reach.
Affordability	Whether direct and indirect service costs are manageable for low and irregular incomes.	Fees, minimum balances, interest, premiums, transport and waiting costs.
Usage	Whether services are actively and repeatedly used for meaningful purposes.	Active accounts, deposits, payments, formal saving, borrowing, remittances, insurance use.
Quality and suitability	Whether services are reliable, transparent, safe, convenient, and appropriate.	Reliability, disclosure, consumer protection, complaints, privacy, product fit, user satisfaction.

3.2 Current State of Financial Inclusion

Financial inclusion refers not merely to the possession of a bank account, but to effective access to and use of affordable, appropriate, and reliable financial services, including payments, savings, credit, and mechanisms for managing financial risk. The latest Global Findex 2025 data, which are based on nationally representative surveys conducted during 2024, show substantial progress in account access but also reveal persistent inequalities by income, location, gender, labor-force status, and region (Klapper et al., 2025). Earlier cross-country research similarly shows that poor, rural, female, and younger adults are systematically more likely to be excluded from formal finance, while lower account costs, greater proximity to providers, stronger legal rights, and more stable institutional environments are associated with higher inclusion (Allen et al., 2016). Thus, the current

state of financial inclusion in low-income countries is best characterized as a combination of rapid expansion in basic access and continuing deficits in active, diversified, and equitable use of financial services.

Table 2. Selected indicators of financial inclusion in low-income economies, 2024

Indicator	Adults age 15+ (%)
Own any account (financial institution or mobile money)	46.4
Account at a bank or similar financial institution	25.8
Mobile money account	31.8
Digitally enabled account	34.7
Women who own an account	40.6
Adults in the poorest 40% of households who own an account	37.3
Rural adults who own an account	42.2
Adults out of the labor force who own an account	35.3
Made or received a digital payment in the past year	37.1
Saved formally using an account	27.6

Source: Klapper et al. (2025), Global Findex Database 2025. Indicators refer to the World Bank low-income economy aggregate and survey year 2024.

3.2.1 Bank-account ownership in low-income countries

The expansion of account ownership in low-income economies has been pronounced. According to the Global Findex series, the share of adults owning an account at a financial institution or with a mobile-money provider rose from about 10% in 2011 to 35.2% in 2021 and 46.4% in 2024 (Klapper et al., 2025). In 2024, only 25.8% of adults in low-income economies reported an account at a bank or similar financial institution, whereas 31.8% had a mobile-money account. These categories can overlap, but the figures demonstrate that mobile money is no longer a peripheral channel; in many low-income settings it is a central part of the financial-access architecture.

The rise in account ownership should not, however, be interpreted as equivalent to full financial inclusion. In the same income group, only 37.1% of adults made or received a digital payment during the previous year and 27.6% saved formally using an account. Demirgüç-Kunt and Klapper (2013) emphasize that cross-country differences in financial

inclusion reflect both individual socioeconomic characteristics and national financial-sector conditions. Allen et al. (2016) further show that formal-account use is closely associated with cost, proximity, institutional quality, and legal protections. Consequently, the policy-relevant question is not simply whether an adult has an account, but whether the account can be used regularly for payments, saving, borrowing, and risk management at an affordable cost.

Variation among low-income economies is also substantial. The latest Findex evidence shows that countries within the same income category can occupy very different positions in the inclusion process, reflecting differences in mobile-money ecosystems, identification systems, financial infrastructure, regulation, public-payment digitization, and macro-institutional stability (Klapper et al., 2025). This heterogeneity cautions against treating low-income countries as a homogeneous financial market. It also helps explain why similar increases in account ownership may produce different development outcomes across countries.

3.2.2 Rural-urban differences in financial access

Geographic location remains a major dimension of financial exclusion. In low-income economies, 42.2% of rural adults owned an account in 2024, below the 46.4% aggregate for the income group (Klapper et al., 2025). Across low- and middle-income economies more broadly, the latest Findex data show an urban-rural ownership gap of approximately eight percentage points: 79% of urban adults have an account compared with 71% of rural adults. Importantly, the African urban-rural gap is driven largely by accounts at banks and similar institutions; the gap is much smaller for adults relying only on mobile money (Klapper et al., 2025).

The rural disadvantage is rooted in both supply-side and demand-side factors. Rural clients may also face longer travel times to branches or agents, weaker telecommunications and electricity infrastructure, lower access to identity documents, and more irregular or seasonal cash flows. Mothobi and Grzybowski (2017), using evidence from 11 Sub-Saharan African countries, show that mobile financial services can partly compensate for deficient physical infrastructure by enabling remote users to transact where conventional financial services are scarce. Similarly, Munyegera and Matsumoto (2016) find that

mobile-money access in rural Uganda improved household welfare partly by facilitating remittance flows and lowering transaction-related frictions.

Digital finance therefore narrows some dimensions of the rural-urban divide but does not eliminate them. Osabutey and Jackson (2024) caution that infrastructure, privacy, security, and resource constraints can prevent the poorest communities from receiving the full benefits often attributed to mobile money. The emerging pattern is therefore one of partial geographic convergence: digital channels reduce the importance of physical distance, but rural residents remain disproportionately exposed to the wider infrastructure and capability constraints that shape meaningful financial use.

3.2.3 Gender differences in account ownership and financial-service usage

Gender disparities remain evident even as overall financial inclusion improves. In low-income economies, 40.6% of women owned an account in 2024, compared with 46.4% of all adults (Klapper et al., 2025). Recent World Bank evidence shows particularly large gender differences in parts of Sub-Saharan Africa and the Middle East and North Africa, where women's account ownership and active use of formal services continue to lag men's.

The literature indicates that women's financial exclusion is multidimensional. A systematic review by Roy and Patro (2022) identifies socioeconomic, cultural, institutional, and behavioral factors that limit women's access to finance, including lower income and employment, education and financial-literacy gaps, limited control over household resources, documentation constraints, and restrictive social norms. Evidence from Cameroon further illustrates the distinction between access and usage: Ndoya and Tsala (2021) find that income explains more than half of the observed gender gap in access to financial products, while education explains more than one-third of the gap in usage. This suggests that opening accounts alone may not equalize financial outcomes if women continue to have weaker earnings, less control over assets, or fewer opportunities to use formal financial instruments.

Digital finance can reduce some of these constraints, but its gender effects depend on access to technology and the surrounding social and institutional environment. In Kenya, Suri and Jack (2016) show that expansion of M-PESA produced long-run welfare gains that were especially pronounced for female-headed households, including effects through saving, resilience, and occupational change. Yet digital inclusion can also reproduce

existing inequalities when women are less likely to own a phone, control a SIM registration, have reliable connectivity, possess digital skills, or feel safe using digital services. Accordingly, gender-sensitive financial inclusion requires attention to both account access and the ability to use accounts independently, frequently, and productively.

3.2.4 Financial exclusion among low-income households, informal workers, farmers, and small businesses

Financial exclusion is concentrated among groups whose incomes, assets, and employment relationships are least compatible with conventional banking models. In low-income economies, only 37.3% of adults in the poorest 40% of households owned an account in 2024, and the rate among adults outside the labor force was 35.3% (Klapper et al., 2025). Common obstacles include insufficient or irregular income, account and transaction fees, distance, documentation requirements, distrust, low financial literacy, and limited ownership of digital devices.

Informal workers face a particularly persistent exclusion problem because employment outside formal payroll systems provides few automatic pathways into banking. Cross-country evidence indicates that broader financial inclusion is associated with a smaller informal sector, including in low-income countries (Rojas Cama et al., 2024). This relationship should not be interpreted as implying that finance alone causes formalization; rather, it underscores the interaction between financial access, business registration, income documentation, taxation, and institutional development. For many informal workers, mobile money may provide a first point of entry into formalized transactions, but access to savings, insurance, and productive credit remains more limited than the ability to send and receive payments.

Smallholder farmers encounter related but distinctive barriers. Agricultural income is seasonal, weather-sensitive, geographically dispersed, and often weakly documented. Kikulwe et al. (2014) find that mobile-money use among Kenyan smallholders is associated with greater use of purchased inputs, greater commercialization, higher profits, and improved household welfare. In a randomized field experiment in rural Mozambique, Batista and Vicente (2020) show that improving access to mobile-money savings can promote formal saving and agricultural investment. These findings illustrate how digital

finance can support rural development when services are adapted to agricultural cash-flow patterns rather than simply replicating standard urban banking products.

Small and microenterprises likewise face a structural financing gap. Longstanding cross-country evidence shows that smaller firms experience greater financing constraints and have less access to formal external finance than larger firms (Beck & Demirgüç-Kunt, 2006). More recent work on digital financial inclusion suggests that connectivity, owner education, business experience, and access to digital financial tools shape the ability of microenterprises to use finance effectively (Johri et al., 2024). For low-income-country SMEs, an account or mobile wallet may improve payment efficiency and create a transaction record, but it does not automatically resolve problems of collateral, credit appraisal, high interest rates, short loan maturities, or lender risk perceptions. Thus, financial inclusion for small businesses must be evaluated through access to working capital, investment finance, payments, savings, and risk-management products rather than through account ownership alone.

3.2.5 Regional differences across Africa, Asia, and other low-income regions

Regional differences are substantial and reflect distinct financial histories, regulatory regimes, telecommunications markets, public-payment systems, and socioeconomic structures. Because the World Bank's regional Findex aggregates combine low- and middle-income economies, they should not be interpreted as estimates for low-income countries alone. They are nevertheless useful for locating low-income countries within the broader regional systems in which their banks, mobile-money providers, remittance networks, and fintech firms operate (Klapper et al., 2025).

Table 3. Broad regional patterns in account ownership, 2024

Region	Account ownership (%)	Interpretive feature
East Asia and Pacific	83.3	High regional average, but large country-level variation and uneven digital depth.
South Asia	About 80	High ownership overall; aggregate strongly influenced by India, while usage and connectivity remain uneven.
Latin America and the Caribbean	About 70	Steady expansion of accounts and digital payments, alongside persistent income and location gaps.

Region	Account ownership (%)	Interpretive feature
Sub-Saharan Africa	About 58	World-leading mobile-money penetration; mobile channels compensate partly for limited bank infrastructure.
Middle East and North Africa	About 53	Lower ownership and large gender gaps remain prominent in several economies.

Source: Klapper et al. (2025) and World Bank Global Findex 2025 regional reporting. Regional aggregates cover low- and middle-income economies where applicable; rounded values are used for regions reported by the World Bank in summary form.

Sub-Saharan Africa is distinctive because mobile money plays a larger role in financial inclusion than in any other region. Account ownership reached roughly 58% of adults in 2024, and mobile-money accounts are more prevalent than elsewhere in the world (Klapper et al., 2025). This model has helped bypass limited bank-branch networks, particularly for domestic transfers, merchant payments, and some forms of saving. The evidence from Kenya, Uganda, and other African countries demonstrates genuine welfare and access gains (Munyegera & Matsumoto, 2016; Suri & Jack, 2016). At the same time, large rural and gender gaps, infrastructure limitations, agent-liquidity problems, fraud risks, and uneven ability to use more sophisticated financial products remain important constraints (Mothobi & Grzybowski, 2017; Osabutey & Jackson, 2024).

Asia presents a different pattern. South Asia has achieved high account ownership in aggregate, supported by large-scale account-opening initiatives, digital identification, and government-to-person payment systems in some countries. East Asia and the Pacific has an even higher regional ownership rate, but the difference between economies such as China and several lower-income Southeast Asian and Pacific economies is considerable. In this context, a high regional average can mask exclusion among rural households, migrants, women, and poorer adults in specific countries. The policy challenge in much of Asia is therefore increasingly to convert nominal ownership into regular digital payment, formal saving, responsible borrowing, and financial resilience.

Latin America and the Caribbean occupies an intermediate position, with account ownership around 70% and growing use of digital services, while the Middle East and North Africa continues to record lower average ownership and particularly persistent

gender disparities (Klapper et al., 2025). Across these regions, the balance between banks, mobile-money operators, fintech firms, cooperatives, microfinance institutions, and public digital infrastructure differs substantially. African experiences emphasize mobile-money networks; parts of Asia emphasize public digital infrastructure and mass account opening; and Latin American systems increasingly combine banking with fintech and digital-payment expansion. For low-income countries within each region, the most relevant lesson is that inclusion improves when technology, regulation, identification, consumer protection, payments infrastructure, and product design develop together rather than in isolation.

Overall, the contemporary financial-inclusion landscape shows clear progress but also a shift in the nature of the remaining problem. The first-generation challenge was primarily access: opening an account or bringing a transaction point closer to excluded populations. Women, rural residents, poorer households, informal workers, smallholder farmers, and microenterprises continue to face barriers that are not fully captured by headline ownership statistics. A rigorous assessment of banking and finance in low-income countries should therefore distinguish between (i) account ownership, (ii) active usage, (iii) access to a range of savings, payment, credit, and insurance services, (iv) affordability and reliability, and (v) the extent to which financial services improve resilience and productive capacity. This multidimensional perspective better captures both the achievements of recent digital-finance expansion and the continuing development challenge of financial exclusion.

3.3 Barriers to Financial Inclusion

Financial inclusion in low-income countries is constrained by a combination of supply-side, demand-side, institutional, and socio-cultural barriers. Although digital finance, branchless banking, and mobile money have widened the potential reach of formal finance, access is not equivalent to effective use. Households may live near a service point yet be unable to afford an account; they may own a mobile phone but lack reliable connectivity, identification documents, financial capability, or confidence in providers. Cross-country evidence consistently links inclusion with lower account costs, greater proximity to financial intermediaries, stronger institutional environments, and better socioeconomic conditions, while recent research shows that the effects of formal institutions weaken when transaction costs, distance, documentation problems, financial illiteracy, distrust, and

inadequate income remain severe (Allen et al., 2016; Peng et al., 2026). The Global Findex 2025 evidence similarly indicates that adults without bank or similar accounts commonly report insufficient money, high fees, distance, lack of documentation, and distrust as reasons for remaining outside the formal financial system (Klapper et al., 2025).

3.3.1 Distance from Bank Branches and Financial Institutions

Geographical distance remains an important barrier in low-income countries because formal financial infrastructure is typically concentrated in cities and commercially viable population centers. For a low-income household, distance therefore imposes more than a travel inconvenience: it raises transport expenses, time costs, lost earnings, and uncertainty about whether a transaction can be completed on a single visit. These costs are especially relevant for farmers, daily wage earners, women with mobility constraints, older people, and microentrepreneurs who cannot easily leave work or household responsibilities to travel to a distant branch. Early cross-country banking evidence found that greater physical access and proximity are associated with wider financial outreach, while Allen et al. (2016) showed that formal account ownership and use are greater where financial intermediaries are more accessible.

Distance also interacts with the economics of small transactions. A trip that is tolerable for a large commercial transaction can be uneconomic for depositing small savings, making a low-value payment, or withdrawing a modest remittance. In African economies, Zins and Weill (2016) documented distance as one of the reported barriers to formal financial inclusion, while evidence on mobile money shows why agent networks can partially substitute for scarce bank infrastructure. Mothobi and Grzybowski (2017), using data from 11 Sub-Saharan African countries, found that mobile services can provide financial access in locations where conventional service infrastructure is weak. Digital channels therefore reduce the importance of distance, but they do not eliminate the need for sufficiently dense cash-in/cash-out agents, telecommunications coverage, liquidity, and consumer support.

3.3.2 High Transaction Fees and Minimum-Balance Requirements

Affordability is a second major barrier. Minimum balances are particularly exclusionary because they convert account ownership into a liquidity commitment: money that might otherwise be used for food, health care, transport, school costs, or working capital must

remain idle to keep the account active or avoid penalties. Beck et al. (2008), using information from banks across a large cross-country sample, found that minimum balances, account fees, and documentation requirements were associated with lower banking outreach. Allen et al. (2016) likewise found that lower account costs are associated with greater account ownership and use.

The affordability problem is broader than explicit bank charges. Consumers may face transport costs, mobile-data expenses, handset costs, informal payments, or repeated travel arising from failed transactions and documentation problems. The Global Findex 2025 survey continues to identify high fees as a commonly reported reason for not holding a bank or similar financial-institution account, with marked regional variation (Klapper et al., 2025). This evidence suggests that inclusion policies should assess the total cost of using an account rather than focusing only on whether a basic account can technically be opened. Low-cost accounts, transparent pricing, interoperable payment systems, proportionate agent fees, and competition among providers can reduce affordability barriers, but poorly designed fee structures may leave nominally included clients with dormant or lightly used accounts.

3.3.3 Low and Irregular Household Income

Insufficient and irregular income is among the most fundamental demand-side constraints on financial inclusion. Many households in low-income economies depend on seasonal agriculture, casual labor, informal self-employment, petty trade, or remittances. Under these circumstances, households may perceive little benefit in maintaining a formal account when most available resources are immediately required for consumption. A bank account can therefore be viewed as a service for people with surplus income rather than as a tool for managing scarcity. The Global Findex literature repeatedly identifies lack of money as the most frequently reported reason for not holding an account, and the 2025 database confirms that insufficient funds remain a central barrier in many regions (Klapper et al., 2025).

Empirical evidence also shows a strong socioeconomic gradient in inclusion. Zins and Weill (2016) found that higher income and education significantly increase the probability of formal financial inclusion across African countries, and Allen et al. (2016) found that poor individuals are among those most likely to remain excluded. More recent cross-

country analysis emphasizes that lack of economic opportunity and insufficient income can weaken the positive influence of otherwise supportive institutions on actual financial-service use (Peng et al., 2026). This is particularly important for informal workers and small farmers whose income is not documented through payroll records and may be concentrated around harvests or short-term contracts. Products designed for inclusion therefore need flexible savings mechanisms, low or zero balance requirements, repayment schedules aligned with cash-flow cycles, and transaction sizes that are viable for users with very small surpluses.

3.3.4 Lack of Identification and Documentation

Formal financial institutions are required to establish customer identity and comply with know-your-customer and anti-money-laundering rules. In low-income settings, however, many adults lack a government-issued identity document, proof of address, tax number, formal employment record, business registration, or other documentation traditionally requested by banks. Beck et al. (2008) identified documentation requirements as a measurable barrier associated with lower banking outreach, and Findex evidence continues to show that lack of necessary documentation is an important self-reported reason for remaining unbanked (Klapper et al., 2025).

Documentation requirements can also produce gendered effects because women in some settings are less likely to possess identification in their own name, have proof of residence, own registered assets, or control documents held by other household members. Perrin and Hyland (2026), using individual-level evidence from 148 economies, found that greater legal gender equality is associated with stronger women's financial inclusion and can reduce involuntary exclusion through channels that include documentation constraints. Digital identity, tiered know-your-customer regimes, simplified low-risk accounts, and interoperable national identification systems can lower barriers, provided that they are inclusive, accessible to remote populations, and accompanied by adequate privacy and data-protection safeguards.

3.3.5 Low Levels of Financial Literacy

Financial literacy affects whether individuals understand basic financial products, compare prices, evaluate risks, use digital interfaces, protect personal identification numbers,

distinguish legitimate providers from fraud, and make informed borrowing or savings decisions. Individuals who do not understand account terms may avoid formal services, rely on cash or informal arrangements, or open accounts that subsequently become dormant. Grohmann, Klühs, and Menkhoff (2018) provide cross-country evidence that financial literacy has a significant beneficial relationship with financial inclusion. Their results also indicate that literacy matters not only for initial access but for the effective use of financial services.

The barrier is increasingly important as finance becomes digital. Digital financial services transfer many tasks formerly performed by bank staff to the user, including navigating menus, entering account numbers, recognizing fees, managing passwords, and resolving transaction errors. Research from rural Bangladesh shows that insufficient ICT resources, skills, and knowledge can constrain digital financial inclusion despite the expansion of mobile services (Aziz & Naima, 2021). African evidence similarly identifies education and access to technology and internet infrastructure as important correlates of digital financial inclusion (Elouaourti & Ibourk, 2024). Effective inclusion therefore requires financial capability programs that are practical, local-language, repeated, and linked to the actual products used by target groups rather than one-time classroom instruction alone.

3.3.6 Lack of Trust in Formal Financial Institutions

Trust is a critical but sometimes underestimated determinant of financial participation. Formal finance requires customers to transfer control of money or personal information to an institution and believe that funds will remain accessible, transactions will be correctly recorded, complaints will be resolved, and rules will not change unexpectedly. When people distrust providers, they may prefer cash, rotating savings groups, family networks, livestock, jewelry, or other informal stores of value even when a bank account is available.

Recent micro-level cross-country evidence confirms that trust in banks is positively associated with financial inclusion across diverse groups and countries (Heyert & Weill, 2025). Experimental evidence also suggests that trust is not merely a correlate: Galiani, Gertler, and Navajas-Ahumada (2022) found that an intervention designed to build trust in financial institutions among poor households in Peru increased trust and subsequently increased savings in formal institutions. Consumer protection, transparent pricing, reliable

agent conduct, visible deposit protection, effective complaint-resolution mechanisms, cybersecurity safeguards, and consistent service quality are not peripheral regulatory concerns; they are core components of an inclusion strategy. Digital systems may expand reach, but fraud, failed transfers, unauthorized charges, and weak redress can quickly erode confidence among first-time users.

3.3.7 Social, Cultural, and Gender-Related Barriers

Financial decisions are embedded in households and communities, so social norms and gender relations can determine who is allowed to own assets, travel to service points, possess a phone, control identification documents, earn independent income, or make financial decisions. A systematic review by Saluja, Singh, and Kumar (2023) identified patriarchal structures, low income, low financial literacy, limited accessibility, and other social factors among the prominent barriers to women's financial inclusion. Such constraints can persist even when formal legal rules are gender-neutral.

Recent evidence strengthens this point. Perrin and Hyland (2026) show that legal equality is positively associated with women's access to financial products, but discriminatory social norms can offset the benefits of formal legal reform. African studies likewise find that women, lower-income adults, and less-educated individuals are more likely to be excluded from both traditional and digital financial services (Zins & Weill, 2016; Elouaourti & Ibourk, 2024). Consequently, gender-responsive inclusion requires more than opening accounts in women's names. It requires attention to legal rights, identification, income opportunities, digital-device ownership, agent accessibility, privacy, safety, product design, and women's effective control over the use of funds.

3.3.8 Limited Digital and Physical Infrastructure

Digital finance has transformed the geography of financial access, particularly in parts of Sub-Saharan Africa and South Asia, but its effectiveness depends on foundational infrastructure. A nominally digital service cannot solve exclusion if customers experience weak signals, frequent outages, insufficient agent liquidity, long distances to cash-out points, expensive data, or lack of electricity for charging devices. Mothobi and Grzybowski (2017) show that infrastructure conditions influence mobile-phone adoption in Sub-

Saharan Africa, even though mobile money can partly compensate for weak conventional financial infrastructure.

Evidence from South Asia also indicates that expansion of mobile-phone and internet use is positively associated with greater financial inclusion (Lenka & Barik, 2018). More recent African research identifies access to technology, internet infrastructure, and human capital as central drivers of digital financial inclusion (Elouaourti & Ibourk, 2024). Aziz and Naima (2021) illustrate this problem in rural Bangladesh, where digital and social exclusion continue to constrain the benefits of digital financial services. The infrastructure agenda must therefore combine physical and digital investment: roads and service points remain relevant, while telecommunications coverage, electricity, interoperable payments, secure platforms, and agent networks increasingly determine the practical reach of finance.

3.3.9 Interactions among Barriers and Implications for Low-Income Countries

A central lesson from the literature is that financial-exclusion barriers are cumulative. A rural woman may face a distant bank branch, lack formal identification, earn irregular income, possess limited financial literacy, share a mobile phone, and distrust institutions because of previous negative experiences. For example, constructing a branch does not solve affordability or documentation barriers; introducing a mobile wallet does not solve low digital literacy, weak network coverage, lack of identification, or distrust; and financial education cannot compensate for unaffordable fees or discriminatory legal restrictions. Peng et al. (2026) provide recent cross-country evidence that institutional quality promotes financial inclusion, but its effect is weakened when financial barriers remain high. This supports a systems approach in which institutional, market, technological, and household-level constraints are addressed together.

For low-income countries, this implies that successful inclusion strategies should combine geographically accessible delivery channels with low-cost product design, proportionate identification requirements, financial and digital capability, strong consumer protection, gender-responsive reforms, and investment in digital and physical infrastructure. Sustainable inclusion requires active, safe, affordable, and useful engagement with savings, payments, credit, insurance, and other services that match the cash-flow patterns and risk-management needs of low-income users. In this sense, barriers to inclusion are not simply

characteristics of financially excluded individuals; they are also features of financial markets, institutions, infrastructure, product design, and social systems. Recognizing this broader structure is essential for evaluating banking and finance as instruments of development in low-income economies.

Table 4. Synthesis of Major Barriers to Financial Inclusion and Representative Evidence

Barrier	Mechanism of exclusion	Representative empirical finding	Key references
Geographical distance	Travel time, transport cost, lost earnings; sparse rural branch/ATM networks	Greater proximity is associated with account ownership and use; mobile channels partly substitute for physical access.	Allen et al. (2016); Mothobi & Grzybowski (2017)
Fees and minimum balances	Fixed charges are large relative to small transactions; balances lock up scarce liquidity	Minimum balances and account fees are associated with lower banking outreach.	Beck et al. (2008); Allen et al. (2016)
Low/irregular income	Little surplus cash; seasonal and informal earnings; conventional products poorly match cash flow	Poorer adults are more likely to be excluded; insufficient money remains a leading self-reported barrier.	Zins & Weill (2016); Klapper et al. (2025); Peng et al. (2026)
Identification/documentation	Missing ID, proof of address, formal employment or business records; KYC hurdles	Documentation requirements reduce outreach and can generate involuntary exclusion.	Beck et al. (2008); Perrin & Hyland (2026)
Financial literacy	Difficulty understanding fees, products, risk, digital interfaces and security	Financial literacy has a positive relationship with access and effective use.	Grohmann et al. (2018); Aziz & Naima (2021)
Trust	Fear of loss, fraud, hidden charges, poor redress, institutional	Trust in banks is positively linked to inclusion; trust-	Galiani et al. (2022); Heyert &

Barrier	Mechanism of exclusion	Representative empirical finding	Key references
	failure	building can increase formal saving.	Weill (2025)
Social/cultural/gender barriers	Mobility limits, patriarchal norms, unequal legal rights, device/ID control, unpaid care	Gender inequality and adverse norms constrain women's account ownership and independent use.	Saluja et al. (2023); Perrin & Hyland (2026)
Digital/physical infrastructure	Weak network/electricity, device affordability, insufficient agents/liquidity, unreliable systems	Connectivity and infrastructure are important for digital adoption and inclusion.	Lenka & Barik (2018); Elouaourti & Ibourk (2024)

Source: Author synthesis based on the cited literature.

3.4 Importance of Savings and Payment Services

Savings and payment services are foundational components of financial inclusion because they affect how households protect resources, respond to shocks, receive income, transfer money, and participate in markets. In low-income countries, where earnings are often irregular and social insurance is limited, the capacity to store even small amounts securely and to move money at low cost can have important welfare effects. Recent Global Findex evidence illustrates the continuing expansion of these services: in 2024, 40% of adults in low- and middle-income economies saved formally in an account, while 42% made a digital merchant payment, both substantially higher than in 2021 (Klapper et al., 2025). Yet the developmental value of these services depends on affordability, accessibility, reliability, consumer protection, and active use rather than account ownership alone.

3.4.1 Safe Storage of Household Savings

For poor households, safe savings mechanisms perform a basic protective function. Informal mechanisms such as rotating savings groups, livestock, jewelry, or cash entrusted to another person may be valuable, but they can be illiquid, risky, or costly to convert when urgent expenses arise. A formal deposit or regulated mobile-money account can reduce

some of these risks by separating savings from day-to-day cash and by creating a more secure store of value. The importance of this function is especially pronounced for households that receive income in lump sums - for example, after harvest, from seasonal employment, or through remittances - but must finance consumption over a longer period.

Experimental evidence demonstrates that poor households have meaningful demand for secure savings when products are designed around their constraints. In rural Nepal, Prina (2015) randomly offered female household heads access to zero-fee savings accounts at nearby bank branches. Take-up and usage were high, and treated households reported an improved financial position and a greater ability to cope with shocks. In rural Kenya, Dupas and Robinson (2013) found that access to basic non-interest-bearing bank accounts enabled many female market vendors to save more and increase productive investment and private expenditure, despite withdrawal fees. Instead, they indicate that weak access, unsuitable product design, fees, and the insecurity of available savings mechanisms can suppress formal saving.

The emergence of mobile money has broadened the concept of safe storage beyond conventional bank deposits. Suri and Jack (2016) found that the expansion of M-PESA in Kenya improved long-run consumption and financial resilience, with stronger effects for female-headed households. More recent cross-country measurement work likewise identifies digital financial services as an important driver of financial inclusion in emerging and developing economies (Khera et al., 2022). Nevertheless, digital storage creates new risks, including fraud, loss of credentials, unauthorized access, agent misconduct, and operational outages. Thus, the developmental role of savings accounts depends on both access and confidence that stored funds can be recovered safely and promptly.

3.4.2 Role of Deposit Accounts in Managing Financial Shocks

Low-income households are frequently exposed to idiosyncratic shocks, such as illness, death, crop failure, job loss, and unexpected school or repair expenses, as well as covariate shocks such as droughts, floods, food-price increases, or macroeconomic downturns. Because formal insurance and credit markets are often incomplete, households may respond by reducing food consumption, selling productive assets, withdrawing children from school, or borrowing at high cost. The value of a deposit account is therefore not

limited to earning interest; it can help households preserve consumption and productive capacity during adverse events.

Evidence from savings-account experiments supports this insurance function. Prina (2015) reported that access to nearby no-fee bank accounts improved households' capacity to cope with shocks in Nepal. Mobile money can strengthen the same mechanism by allowing households to combine own savings with rapid transfers from their social networks. Jack and Suri (2014) found that negative shocks reduced consumption among Kenyan households that did not use M-PESA, whereas consumption among users was much less affected. Suri and Jack (2016) further linked mobile-money access to greater financial resilience and higher long-run consumption.

This relationship between savings, payments, and resilience is central to financial inclusion. A household that can save securely but cannot access funds during an emergency remains vulnerable; likewise, a payment account that receives funds but encourages immediate cash-out may provide only limited protection. Product design should also reflect irregular cash flows by avoiding rigid contribution schedules and punitive minimum-balance rules that are poorly matched to seasonal or informal-sector earnings.

3.4.3 Domestic and International Remittance Services

Remittances are a major financial flow for many low-income households. Domestic transfers connect migrant workers in towns and cities with rural families, while international remittances link migrants abroad with households in origin countries. They can also function as informal insurance because migrants often increase transfers when relatives experience hardship. Bettin, Presbitero, and Spatafora (2017), using bilateral remittance data for developing countries, found that remittances tend to increase in response to adverse shocks in recipient economies, supporting their role as a countercyclical source of household support.

Efficient remittance services magnify these benefits by lowering the monetary and time costs of sending funds. Jack and Suri (2014) showed that mobile money in Kenya reduced transaction costs and improved risk sharing through increased remittance receipt. In rural Uganda, Munyegera and Matsumoto (2016) found that mobile-money users were more likely to receive remittances, received them more frequently, and obtained larger amounts;

these changes were associated with higher real per capita consumption. Such findings are particularly relevant to rural populations, for whom traditional transfers may require travel, intermediaries, or physical delivery of cash.

International remittance channels can also deepen engagement with formal finance. Anzoategui, Demirgüç-Kunt, and Martínez Pería (2014) found that remittance receipt in El Salvador increased the likelihood of using deposit accounts, even though the effect on formal credit was less robust. However, high transfer fees, unfavorable exchange-rate margins, lack of interoperability, documentation requirements, and weak last-mile distribution can reduce the net value reaching recipient families. From a development perspective, policy efforts that encourage competition, transparent pricing, digital delivery, safe cash-out networks, and linkage of remittances to appropriate savings products can increase the welfare effect of both domestic and international transfers.

3.4.4 Reduction of Dependence on Cash

Cash remains dominant in many low-income economies because it is widely accepted, immediate, and does not require a device or formal account. Cash can be lost or stolen; long-distance payments may require travel; governments and firms face costs for handling, transporting, safeguarding, and reconciling physical currency; and cash transactions generate little formal transaction history. For households and small firms, these limitations can make payments slower, less secure, and more difficult to document. Digital payments can reduce some of these frictions when infrastructure is reliable and users are able to transact safely.

Mobile money provides a well-studied example of how replacing some cash transactions can reduce transaction costs. Jack and Suri (2014) showed that the Kenyan mobile-money network facilitated transfers over distance and strengthened household risk sharing. Suri and Jack (2016) linked the diffusion of M-PESA to higher consumption and lower extreme poverty, effects partly associated with improved saving, resilience, and labor allocation. Cross-country work by Khera et al. (2022) similarly shows that digital financial services have become an important driver of overall inclusion, particularly in Africa and Asia. The Global Findex 2025 data also indicate that digital merchant payments have grown

substantially across developing economies, signaling a gradual shift from cash-only transactions toward account-based payments (Klapper et al., 2025).

The case for reducing cash dependence should not, however, be interpreted as a case for eliminating cash. A balanced transition is therefore preferable: digital payments should expand where they lower cost and increase security, while cash-in/cash-out channels and cash acceptance remain available for users who cannot yet transact digitally. The aim is greater choice and efficiency rather than compulsory digitization.

3.4.5 Contribution of Payment Systems to Household and Business Efficiency

Efficient payment systems reduce the time, cost, and uncertainty involved in moving money. For firms, especially micro and small enterprises, digital payments can reduce cash-handling costs, improve record keeping, speed settlement with suppliers and customers, and create transaction histories that may support access to working capital. Payment efficiency therefore has both microeconomic and systemic dimensions: it affects the daily organization of household finances and business operations while also improving the circulation of money through the economy.

Recent comparative research on M-PESA in Kenya, UPI in India, Pix in Brazil, and Yape in Peru emphasizes interoperability, public-private coordination, accessible technology, and cash-in/cash-out networks as central features of successful digital payment ecosystems (Aurazo & Gasmi, 2024). These systems illustrate different institutional models but share the objective of making low-value payments faster and cheaper. For governments and employers, direct account payments can also reduce leakage and the administrative burden of distributing physical cash.

The efficiency gains are conditional, however. Fragmented platforms, high merchant fees, non-interoperable wallets, weak dispute-resolution mechanisms, cyber risk, and poor network reliability can erode user benefits. Consequently, payment modernization in low-income countries should be accompanied by competition policy, interoperable infrastructure, strong consumer protection, cybersecurity, accessible redress, and financial and digital literacy. Under these conditions, savings and payments can operate as mutually reinforcing services: payments bring funds into accounts, while convenient savings features help users retain and manage part of those funds over time.

Table 5. Developmental Functions of Savings and Payment Services

Service/function	Development mechanism	Representative evidence	Key references
Safe savings	Protects cash from theft, loss, pressure to spend, and insecure informal storage	Nearby/no-fee accounts generated high take-up; savings access increased saving and productive investment.	Prina (2015); Dupas & Robinson (2013)
Shock management	Provides liquid buffers and supports consumption smoothing	Savings access improved shock coping; mobile money protected consumption after negative shocks.	Prina (2015); Jack & Suri (2014)
Remittances	Moves resources across households and locations; provides informal insurance	Remittances respond to adverse shocks; mobile money increased frequency/value of transfers and household welfare.	Bettin et al. (2017); Munyegera & Matsumoto (2016)
Lower cash dependence	Reduces travel, handling, theft risk, and settlement delays	Mobile and digital payments reduced transaction frictions and supported wider inclusion.	Jack & Suri (2014); Khera et al. (2022)
Household/business efficiency	Speeds payments, improves records and can create usable transaction histories	Successful payment ecosystems emphasize interoperability, regulation, access technology, and agent networks.	Aurazo & Gasmi (2024)

Source: Author synthesis based on the cited literature.

3.5 Financial Literacy and Consumer Capability

Financial inclusion is sustainable only when consumers can understand, select, and use financial services in ways that improve rather than weaken their welfare. Financial literacy

commonly refers to knowledge and understanding of financial concepts, while consumer capability is broader and includes practical skills, attitudes, confidence, planning behavior, and the ability to act on financial information. A household may know what interest means but still be unable to compare loan offers, budget irregular income, protect a mobile-money PIN, recognize fraud, or seek redress after an unauthorized transaction. Accordingly, the literature increasingly treats financial capability as a combination of knowledge, behavior, and enabling institutions rather than as factual knowledge alone (Lusardi & Mitchell, 2014; Morgan & Long, 2020).

The relationship between literacy and inclusion is also two-way. Cross-country evidence indicates that higher financial literacy is associated with greater financial inclusion, while experimental evidence shows that well-designed education can improve both knowledge and downstream financial behavior (Grohmann et al., 2018; Kaiser et al., 2022). The policy challenge is therefore not simply to teach finance in the abstract, but to build practical capability at the moments when households make savings, borrowing, payment, and risk-management decisions.

3.5.1 Understanding Financial Products and Services

Effective participation in formal finance requires consumers to understand the essential characteristics of products they are offered. For loans, consumers need to understand principal, interest, repayment schedules, penalties, collateral, total cost, and the consequences of default. Insurance requires an understanding of premiums, exclusions, covered events, and claims procedures, while digital wallets and payment products require knowledge of transaction charges, transfer confirmation, account security, and complaint mechanisms. Without these competencies, nominal access can expose users to unsuitable products, hidden costs, fraud, over-borrowing, or account dormancy.

Lusardi and Mitchell (2014) conceptualize financial knowledge as a form of human capital that affects economic decision making and household welfare. In developing-country settings, Morgan and Long (2020) found in Laos that a broader financial-literacy measure encompassing knowledge, behavior, and attitudes was significantly related to financial inclusion and saving. These findings support the view that product understanding is not

peripheral to inclusion: it helps determine whether households can translate access into useful and appropriate service use.

Financial products should nevertheless be designed so that safe use does not depend on advanced expertise. The implication is a shared responsibility: consumers need capability, but providers and regulators also need transparent pricing, standardized information, plain-language contracts, suitable default options, and effective consumer protection. Financial literacy should complement - not substitute for - fair product design and supervision.

3.5.2 Household Budgeting, Savings, Borrowing, and Debt Management

Budgeting and cash-flow management are particularly important where income is irregular. Effective budgeting therefore involves matching variable inflows with predictable needs, setting aside funds for future expenses, maintaining emergency savings, and distinguishing between consumption and productive borrowing. These skills can reduce the risk that short-term liquidity shortages lead to costly debt or the sale of productive assets.

Financial education can improve such practices when it is simple, relevant, and behaviorally actionable. Drexler, Fischer, and Schoar (2014) conducted a randomized evaluation with microentrepreneurs in the Dominican Republic and found that simplified rule-of-thumb training improved financial practices and business outcomes more than conventional accounting instruction for less-skilled participants. Carpena et al. (2019), studying a large-scale program in India, found that financial education combined with goal setting and personalized counseling could produce meaningful changes in real financial behavior, including budgeting, saving, and account opening. These studies suggest that capability interventions are more effective when they translate abstract concepts into specific actions.

Debt management is an equally important part of capability. Consumers therefore need to compare total borrowing costs, assess repayment capacity under uncertain income, prioritize high-cost debt, and understand the risks of digital credit products that provide rapid access with limited interpersonal screening. Financial education should be paired with responsible lending standards and disclosure rules because knowledge alone cannot protect consumers from predatory or structurally unaffordable products.

3.5.3 Digital Financial Literacy

As financial services move onto mobile phones and digital platforms, financial literacy increasingly includes a digital dimension. Digital financial literacy covers the ability to operate devices and applications, understand digital fees and transaction processes, protect passwords and personal identification numbers, recognize phishing and social-engineering attempts, verify recipients, interpret transaction confirmations, protect personal data, and use formal complaint channels. These skills are critical because digital finance changes the nature of financial risk: geographic barriers may fall, but exposure to fraud, misinformation, privacy breaches, and mistaken transfers can rise.

Research on digital inclusion indicates that technology alone does not guarantee effective financial inclusion. Aziz and Naima (2021), using evidence from rural Bangladesh, show that insufficient digital skills, ICT constraints, and social exclusion limit the benefits of digital financial services. Khera et al. (2022) find that digital financial services have become a major driver of inclusion across emerging and developing economies, but they also emphasize the need to close the digital divide and maintain trust in financial services. This combination of evidence implies that digital capability must develop alongside connectivity, device access, reliable platforms, and consumer safeguards.

Digital literacy is also becoming more important as payment ecosystems expand. In this environment, educational content should be short, practical, and embedded in the user journey - for example, transaction warnings, fee disclosures, fraud alerts, confirmation screens, and accessible help functions. Such 'just-in-time' capability measures can be especially valuable for users with limited formal education or sporadic use of financial services.

3.5.4 Relationship between Financial Knowledge and Financial-Service Usage

A substantial literature links financial literacy to financial-service use, although the relationship is shaped by income, infrastructure, trust, product availability, and institutional quality. At the cross-country level, Grohmann, Klühs, and Menkhoff (2018) found a clear positive relationship between financial literacy and financial inclusion. Their analysis suggests that literacy can partly substitute for infrastructure in determining access, while greater literacy strengthens the effect of financial depth on actual use of services. This

distinction is important: infrastructure can make an account physically available, but capability influences whether individuals understand its value and use it effectively.

Household evidence from Laos reaches a similar conclusion. Morgan and Long (2020) found that financial literacy was significantly associated with both savings behavior and multidimensional financial inclusion, although different components of literacy had different effects. This cautions against treating financial literacy as a single test score. Knowledge, attitudes, planning behavior, confidence, and experience may influence different financial decisions in different ways.

Causal evidence from financial-education experiments reinforces the broad relationship while also showing its limits. Kaiser et al. (2022), in a meta-analysis of 76 randomized experiments involving more than 160,000 individuals, found that financial education produces positive effects on both financial knowledge and downstream behaviors. At the same time, Carpena et al. (2019) show that knowledge gains do not automatically translate into action; goal setting and personalized counseling can help bridge the knowledge-behavior gap. Thus, the strongest interpretation of the literature is not that education alone solves financial exclusion, but that capability increases the effectiveness of access when products, infrastructure, and institutions are supportive.

3.5.5 Role of Governments, Schools, Banks, and Nongovernmental Organizations

Improving financial capability requires coordinated action because no single institution reaches all population groups or controls all determinants of consumer outcomes. They can establish national financial-literacy strategies, integrate consumer protection with inclusion policies, mandate transparent disclosure, regulate digital and credit providers, strengthen complaint-resolution systems, and support public information campaigns. Governments can also use social-protection payments, public-sector payrolls, and digital government services as opportunities to provide practical financial guidance when citizens first interact with formal accounts.

Schools provide an opportunity to build capability before individuals make high-stakes financial decisions. Kaiser and Menkhoff (2020), in a meta-analysis of school-based financial-education experiments, found sizeable effects on financial knowledge and smaller but positive effects on financial behavior. This supports the inclusion of age-appropriate

budgeting, saving, borrowing, interest, risk, and digital-safety concepts in secondary and tertiary education. However, school curricula should emphasize practical decision making rather than memorization and should be adapted to local financial products and household realities.

Banks, microfinance institutions, mobile-money operators, and fintech firms are positioned to provide product-linked and just-in-time education because they interact with customers at the moment of use. Evidence from Drexler et al. (2014) shows that a bank-partnered, simplified training approach can improve the practices of microentrepreneurs. Providers can therefore contribute through onboarding guidance, plain-language fee explanations, repayment simulations, budgeting tools, fraud warnings, and staff or agent training. Nevertheless, provider-led education must be separated from aggressive sales practices; regulatory oversight is necessary to ensure that 'education' is not used primarily as marketing.

Nongovernmental organizations and community-based organizations are particularly valuable for groups that formal providers reach poorly, including rural women, informal workers, smallholder farmers, migrants, and low-literacy populations. Carpena et al. (2019) demonstrate the value of personalized counseling and goal setting in moving participants from knowledge toward action, while the broader meta-analysis by Kaiser et al. (2022) indicates that financial education can be effective across diverse delivery settings. The most promising model is therefore an ecosystem approach in which public policy sets standards, schools build foundational capability, financial providers support safe product use, and NGOs extend tailored support to underserved communities.

3.5.6 Implications for Financial Inclusion in Low-Income Countries

The evidence reviewed above suggests that financial literacy should be treated as a complement to, rather than a substitute for, inclusive financial-system design. Conversely, expanding accounts without strengthening consumer capability can produce inactive accounts, misuse of credit, vulnerability to fraud, or low trust. Effective policy therefore combines capability with accessible products, consumer protection, interoperable payments, reliable digital infrastructure, and mechanisms for redress.

For low-income countries, financial capability programs are most likely to succeed when they are practical, targeted, timely, and measurable. Content should focus on decisions that households actually face: how to keep savings secure, prepare for irregular income and shocks, compare loan costs, manage repayment, receive remittances safely, use digital payments, protect credentials, and report fraud. Evaluation should measure not only improvements in knowledge but also changes in saving, budgeting, borrowing, digital safety, account activity, and financial resilience.

Table 6. Financial Capability Domains and Evidence for Effective Interventions

Capability domain	Core competencies	Evidence/implication	Key references
Product understanding	Fees, interest, terms, risk, insurance, redress	Financial knowledge is associated with financial decision quality and inclusion.	Lusardi & Mitchell (2014); Morgan & Long (2020)
Budgeting and saving	Cash-flow planning, emergency funds, goal setting	Simplified rules and goal-oriented education improve financial practices.	Drexler et al. (2014); Carpena et al. (2019)
Borrowing/debt management	Total cost, repayment capacity, penalties, over-indebtedness	Capability should be paired with responsible lending and clear disclosure.	Lusardi & Mitchell (2014); Kaiser et al. (2022)
Digital financial literacy	PIN/password safety, fraud recognition, transaction verification, data protection	Digital inclusion is constrained by skills and social/ICT barriers, not technology access alone.	Aziz & Naima (2021); Khera et al. (2022)
Knowledge and service use	Ability to translate access into active and appropriate usage	Cross-country and household evidence links literacy with inclusion and saving.	Grohmann et al. (2018); Morgan & Long (2020)
Institutional delivery	Schools, government, banks, NGOs, counseling and just-in-time support	Education has positive average effects; school and personalized interventions can improve outcomes.	Kaiser & Menkhoff (2020); Kaiser et al. (2022); Carpena et al. (2019)

Source: Author synthesis based on the cited literature.

4. Access to Credit and Financing Constraints

Access to credit is a central component of financial development because households and firms often need to shift resources across time: families borrow to meet urgent consumption and human-capital needs, enterprises borrow to finance working capital and investment, and farmers require finance before harvest when cash flow is weakest. Yet credit markets in low-income countries are characterized by substantial information asymmetry, weak collateral systems, high transaction costs, income volatility, and limited lender reach. The theoretical foundation is the credit-rationing framework of Stiglitz and Weiss (1981), in which lenders may optimally restrict credit rather than simply raise interest rates because higher rates can attract riskier borrowers and alter borrower behavior. This logic remains highly relevant to household, SME, and agricultural finance in low-income settings.

The evidence also indicates that financing constraints are heterogeneous. Accordingly, a useful review of credit access must distinguish between demand for credit, actual borrowing, discouraged borrowing, credit rationing, and over-indebtedness. It must also recognize that recent innovations—credit bureaus, movable-collateral registries, digital transaction records, and alternative credit scoring—can reduce information problems while simultaneously generating new concerns related to data quality, privacy, exclusion through blacklisting, and consumer protection (Beck et al., 2005; Berger & Udell, 2006; Brown et al., 2009; Johnen et al., 2021).

4.1 Household Access to Credit

4.1.1 Household demand for formal and informal loans

Low-income households demand credit for both productive and non-productive purposes, but the source of borrowing depends on accessibility, urgency, loan size, repayment flexibility, and the borrower's ability to satisfy formal requirements. Formal providers such as banks, microfinance institutions, cooperatives, and regulated digital lenders may offer greater legal protection and potentially lower costs, yet they often require documentation, regular repayment schedules, credit histories, guarantors, or collateral. Evidence from Nepal shows that formal-sector expansion has not eliminated informal borrowing; households continue to combine channels because formal and informal credit serve

different purposes and are associated with different investment and consumption patterns (Kondratjeva, 2021).

The coexistence of formal and informal borrowing should therefore not be interpreted simply as a failure of formal finance. Informal arrangements can exploit local information and social enforcement, reducing screening costs in communities where formal credit records are scarce. However, these arrangements may also involve high implicit interest rates, tied transactions, social pressure, or dependence on local elites and traders. Where formal finance is inaccessible, households may borrow informally even when the terms are unfavorable because delaying expenditure on food, health, schooling, or emergencies is not feasible.

4.1.2 Credit for consumption, education, healthcare, housing, and emergencies

Household borrowing is closely linked to consumption smoothing. Credit may finance food and basic consumption during lean periods, school fees and education expenses, medical treatment, housing repairs, weddings and other social obligations, or recovery after climate and economic shocks. These uses are not necessarily 'unproductive': education and health expenditures can protect human capital, while emergency credit can prevent distress sales of productive assets. The welfare effect nevertheless depends on whether the loan is affordable and whether future income is sufficient to service the debt.

Health shocks provide a particularly clear example. A recent cluster-randomized experiment in northern Bangladesh found that simplifying a microfinance health-loan product and reducing transaction costs increased access to health credit and formal healthcare utilization, illustrating the role of appropriately designed emergency credit when prepayment and risk-pooling mechanisms are incomplete (Islam et al., 2024). Similar reasoning applies to education and housing: loans can relax liquidity constraints and enable lumpy expenditures, but repayment schedules must be compatible with household cash flow.

4.1.3 Difficulties faced by low-income borrowers

The central difficulty for low-income borrowers is that their need for credit is often greatest precisely when their observable repayment capacity is weakest. Irregular wages,

seasonal work, self-employment, and small-scale farming generate volatile cash flows that are difficult to document. From the lender's perspective, these features raise the cost of screening and make default risk harder to estimate; from the household's perspective, they increase rejection risk and encourage self-exclusion. Borrowers may also face small-loan diseconomies because the administrative cost of underwriting and monitoring a very small loan can be high relative to the amount lent.

Interest rates and repayment frequency can create additional pressure. Digital credit can reduce travel and processing costs and reach borrowers without conventional histories, yet short maturities, opaque fees, automatic deductions, and rapid reporting of late payments can expose vulnerable users to new forms of risk. Kenyan evidence shows that digital credit expanded borrowing opportunities for people less likely to access conventional credit, but it was also associated with high default and blacklisting rates (Johnen et al., 2021). Thus, access should be evaluated together with affordability, suitability, transparency, and the consequences of default.

4.1.4 Consequences of excessive household indebtedness

Credit can support resilience and investment, but excessive indebtedness may reverse these benefits. Schicks (2014), using evidence from microborrowers in Ghana, shows that over-indebtedness is closely connected to adverse shocks, low returns on investment, and non-productive loan use, and argues that borrower protection requires more than conventional portfolio-quality indicators. Research from Cambodia likewise highlights how multiple borrowing, refinancing, and aggressive collateral enforcement can transmit credit expansion into debt stress, asset loss, and migration (Bylander et al., 2019; Green, 2020).

However, multiple or overlapping borrowing is not uniformly harmful. Panel evidence from Bangladesh shows that households may use overlapping microcredit either as a promotional strategy to expand economic activity or as a coping strategy to respond to shocks; consequences differ markedly between these groups (Osmani et al., 2024). Restricting credit purely on the basis of multiple borrowing may exclude households that use credit productively, whereas weak affordability assessment can leave vulnerable households trapped in debt rollover. Effective household credit policy therefore requires responsible lending standards, transparent pricing, repayment-capacity assessment,

accessible restructuring mechanisms, and financial education that focuses specifically on debt management rather than on general financial knowledge alone.

4.2 Credit Access for Small and Medium-Sized Enterprises

4.2.1 Importance of SMEs in employment and economic development

Small and medium-sized enterprises (SMEs) are central to employment generation, entrepreneurship, local supply chains, and structural transformation in developing economies. Cross-country evidence indicates that small firms make substantial contributions to job creation and that the SME sector's employment contribution is comparable to that of large firms in many developing countries (Ayyagari et al., 2014). Their economic potential, however, depends heavily on access to finance because retained earnings are frequently insufficient to fund working capital, equipment, technology adoption, and expansion.

Financing constraints can therefore have macroeconomic consequences. Beck et al. (2005), using firm-level data across 54 countries, show that financial and institutional obstacles constrain smaller firms much more strongly than large firms. Collateral requirements, bank bureaucracy, high interest rates, and limited access to appropriate financial products all have particularly adverse effects on small-firm growth. These findings help explain why improving SME finance is not only a firm-level issue but also a component of broader employment and productivity policy.

4.2.2 Limited access to working capital and investment finance

SMEs require short-term working capital to purchase inventories, pay wages, finance receivables, and smooth cash flow, as well as longer-term finance for machinery, premises, technology, and business expansion. Banks may prefer short maturities and highly secured loans because deposits are short-term, borrower information is weak, and enforcement is uncertain. SMEs then rely disproportionately on internal funds, supplier credit, informal loans, or retained earnings. This financing pattern can keep otherwise viable firms below efficient scale and may delay investment precisely when growth opportunities are strongest.

The mismatch is especially severe for young firms. Relationship lending can partly overcome information gaps because repeated interaction produces 'soft' information about the owner and business. Berger and Udell (1995) show that stronger banking relationships can improve loan terms and reduce collateral dependence, while Berger and Udell (2006) emphasize that SME credit availability depends on a broader lending infrastructure that includes relationship lending, financial-statement lending, asset-based lending, leasing, credit scoring, and other technologies. Low-income countries often have weaknesses across several of these channels simultaneously.

4.2.3 High collateral requirements

Collateral is intended to reduce lender losses after default and can also signal borrower quality, but it becomes an exclusion mechanism when lenders accept only land and buildings that small firms do not own or cannot document. Evidence from less-developed countries indicates that SME collateral requirements are strongly related to borrower risk and loan characteristics, and that weak enforcement environments intensify reliance on collateral (Hanedar et al., 2014). Duarte et al. (2017) further show that improved information sharing can reduce the need for collateral by lowering informational asymmetry. High collateral ratios therefore often reflect deficiencies in the surrounding information and legal environment rather than the intrinsic risk of the investment project alone.

4.2.4 Information asymmetry between borrowers and lenders

Information asymmetry is one of the most persistent explanations for SME financing constraints. When banks cannot reliably distinguish good borrowers from bad borrowers, they may raise collateral requirements, increase interest rates, shorten maturities, or ration credit. The Stiglitz-Weiss framework demonstrates why credit rationing can persist even when some excluded borrowers are willing to pay more: higher rates can change the risk composition of applicants and encourage riskier behavior after borrowing (Stiglitz & Weiss, 1981). For SMEs, this problem is intensified by informal accounting, limited auditing, mixed household-business finances, and rapidly changing business conditions.

The financing technology used by lenders matters. A weak institutional environment can undermine several technologies at once. This is why SME credit reform cannot be reduced to subsidized interest rates alone; it requires improvements in bookkeeping, payments data,

collateral law, insolvency procedures, lender competition, and credit information infrastructure (Berger & Udell, 2006).

4.2.5 Limited credit histories and financial records

Many SMEs operate partly or wholly outside formal accounting and tax systems. They may have viable businesses but lack financial statements that allow banks to calculate leverage, profitability, cash-flow coverage, and repayment capacity. Banks then rely more heavily on collateral or personal guarantees, which disadvantages younger, smaller, and women-owned firms with fewer titled assets. Credit information sharing is therefore especially valuable for opaque firms: Brown et al. (2009) find that information sharing is associated with improved credit availability and lower borrowing costs, with stronger effects for firms that are less transparent and in countries with weaker legal environments.

4.2.6 Higher financing constraints faced by small firms

The literature consistently finds that financing constraints decline with firm size. Larger firms are more likely to have audited accounts, diversified cash flows, established bank relationships, and marketable collateral. They can spread fixed borrowing costs over larger loans and may access bond, equity, leasing, or international finance. Beck et al. (2005) show that financial obstacles have the strongest negative growth effects among the smallest firms, while evidence on SME lending in less-developed countries confirms the importance of collateral and information weaknesses (Hanedar et al., 2014; Duarte et al., 2017). The financing gap is consequently not simply a shortage of funds; it is a shortage of lending technologies and institutions capable of evaluating small, opaque borrowers at reasonable cost.

Table 7. Major credit needs and constraints across borrower groups

Borrower group	Typical credit needs	Principal constraints	Implications for finance design
Low-income households	Consumption smoothing, health, education, housing, emergencies	Irregular income; small loan sizes; weak documentation; high cost of formal screening	Flexible repayment, transparent pricing, affordability assessment, emergency and health-linked products

SMEs	Working capital, inventories, machinery, technology, expansion	Information opacity; weak records; high collateral requirements; short maturities	Relationship lending, cash-flow lending, movable collateral, credit-information sharing
Smallholder farmers	Seeds, fertilizer, labor, machinery, storage, marketing	Seasonality; climate and price risk; dispersed clients; weak land titles; high transaction costs	Seasonal repayment, value-chain finance, warehouse receipts, index insurance, digital delivery

4.3 Agricultural and Rural Finance

4.3.1 Seasonal credit needs of farmers

Agricultural finance is shaped by the biological and seasonal structure of production. Farmers incur expenses for seed, fertilizer, hired labor, irrigation, pesticides, land preparation, and machinery before they receive harvest income. After harvest, farmers may face another liquidity problem: they often need cash immediately for debt repayment, food, schooling, or household expenses and therefore sell crops when prices are seasonally low. Credit can bridge both pre-harvest and post-harvest periods, but loan maturities and repayment dates must be aligned with the crop cycle rather than with uniform monthly schedules.

Experimental evidence illustrates the importance of this timing. Channa et al. (2022) offered harvest loans to maize farmers in Tanzania and found that recipients stored more grain and shifted more sales into the lean season, when prices are typically higher. Similarly, seasonal credit interventions can reduce consumption gaps and relax liquidity constraints in rural households (Basu & Wong, 2015). A loan that is affordable on an annual basis can still generate distress if repayment falls due before harvest or if income is realized only after marketing.

4.3.2 Agricultural risks and income uncertainty

Agriculture is unusually exposed to covariate risks. Drought, flood, heat, pests, animal disease, and output-price shocks can affect many borrowers in the same region at the same time, limiting the effectiveness of local risk pooling and increasing lender portfolio risk. These uncertainties make lenders cautious because even technically efficient farmers can

default following shocks outside their control. Farmers may respond by avoiding debt or underinvesting in profitable but risky technologies, creating demand-side credit constraints in addition to formal loan rejection.

Recent evidence from Ethiopia and Tanzania confirms that both demand- and supply-side constraints matter. Balana et al. (2022) find that risk aversion, financial literacy, and other demand-side factors are as important as limited supply and borrowing costs, while women are more likely to be credit constrained. Nigerian evidence likewise identifies inadequate collateral, risk perceptions, information gaps, and transaction costs as significant barriers to agricultural borrowing and technology adoption (Balana & Oyeyemi, 2022). Credit policy that ignores production risk may therefore increase nominal loan supply without producing sustainable take-up.

4.3.3 Limited rural banking infrastructure

Rural lending is costly because clients are geographically dispersed, loans are relatively small, transport infrastructure may be weak, and lenders must often verify farms and collateral in person. The result is a spatial financing gap: farmers may incur substantial time and travel costs merely to apply for a loan, make repayments, or resolve an account problem. Agent banking, mobile money, biometric identification, and digital loan applications can reduce these costs, but they do not eliminate the need for local knowledge, reliable connectivity, cash-in/cash-out networks, and mechanisms for handling disputes and restructuring after shocks.

Cooperatives, microfinance institutions, value-chain lenders, input suppliers, traders, and rural banks can complement commercial banks by using local information and linking repayment to crop sales. However, such arrangements may create dependence on a single buyer or embed credit into tied marketing relationships. Effective rural financial systems therefore require multiple channels rather than a single institutional model, and should combine digital delivery with physical service points and agricultural expertise.

4.3.4 Financing for agricultural inputs, machinery, storage, and marketing

The financing needs of agriculture extend beyond seasonal input loans. When these forms of finance are absent, farmers may use too little fertilizer, delay machinery investment, sell output immediately after harvest, or fail to reach higher-value markets. Evidence from

rural Rwanda finds that credit constraints can reduce agricultural productivity, supporting the view that finance affects welfare through investment and production channels (Ali et al., 2014).

Warehouse-receipt and inventory-credit systems attempt to address post-harvest constraints by allowing stored crops to serve as collateral. Miranda et al. (2019) show that warehouse-receipt finance can create such opportunities but also identify important transaction-cost and risk-allocation problems that limit smallholder use. Evidence from Burkina Faso indicates that inventory credit can increase cultivated area, input use, livestock, and grain stocks, showing that combining storage and finance can support both production and consumption smoothing (Le Cotty et al., 2023).

4.3.5 Crop insurance and weather-related financial products

Agricultural insurance can complement credit by reducing the probability that climate shocks translate into default. Index insurance attempts to reduce these problems by tying payouts to an observable index such as rainfall, temperature, vegetation conditions, or area yield rather than to individual farm losses. In theory, insurance can encourage investment and allow lenders to expand agricultural credit because part of the covariate risk is transferred away from borrowers and banks.

The empirical record is nevertheless mixed. Reviews of index insurance in developing-country agriculture find persistent problems of basis risk, low farmer understanding, limited trust, high premiums relative to willingness to pay, and dependence on subsidies (Carter et al., 2017; Cole & Xiong, 2017). Basis risk is particularly important: a farmer can experience severe loss while the index fails to trigger a payment. For this reason, insurance should be viewed as one component of a broader rural risk-management system that includes savings, emergency credit, climate-resilient technologies, extension services, improved weather data, and flexible loan restructuring.

4.4 Credit Rationing and Collateral Problems

4.4.1 Reasons banks reject potentially productive borrowers

Banks can reject potentially productive borrowers even when expected project returns are high because lending decisions depend on expected repayment, not simply on project profitability. Stiglitz and Weiss (1981) show that under asymmetric information a bank

may maximize expected return by rationing credit rather than increasing the interest rate. High rates can induce safer borrowers to withdraw and can encourage funded borrowers to choose riskier projects, so the market need not clear through price alone.

In low-income countries, this theoretical problem is magnified by informality, weak courts, limited bankruptcy procedures, incomplete registries, and scarce audited information. Some productive borrowers are excluded because they cannot satisfy these conditions, not because their projects are economically unviable. This helps explain 'discouraged borrowers' who do not apply because they expect rejection or fear losing collateral.

4.4.2 Lack of acceptable collateral

The collateral problem is fundamentally a mismatch between assets owned by borrowers and assets accepted by lenders. Poor households and small enterprises may own livestock, machinery, vehicles, inventories, receivables, crops, or household assets but lack titled land and buildings. Banks often prefer immovable property because ownership is easier to verify, value is more stable, and repossession procedures are more familiar. Hanedar et al. (2014) document the importance of borrower risk and loan conditions in collateral requirements for SMEs in less-developed countries, while Duarte et al. (2017) show how better information sharing can reduce collateral dependence.

4.4.3 Weak property-registration systems

Collateral is valuable to a lender only when ownership is clear, prior claims can be identified, security interests can be registered, and assets can be repossessed and sold within a predictable legal process. Weak land titling and fragmented registries reduce the collateral value of otherwise useful assets. The result is a 'dead capital' problem in which households and firms possess assets but cannot readily transform them into bankable collateral. Improving property registration can therefore expand credit indirectly by increasing the enforceability and transparency of security interests.

Reform, however, must address both registration and enforcement. A digital registry alone will have limited effect if lenders doubt the ability to seize and dispose of assets after default, if valuation standards are weak, or if borrowers lack information about the system. This point is evident in Malawi, where a movable-collateral registry produced only a marginal increase in MSME bank credit and real property remained the preferred collateral

for many lenders (Pendame & Akotey, 2023). Institutional change therefore requires legal reform, lender adaptation, borrower awareness, and functioning secondary markets for pledged assets.

4.4.4 High borrower-screening and monitoring costs

Small loans can be expensive to underwrite because many screening and monitoring tasks have fixed costs. A bank must collect documents, conduct interviews, verify identity and business activity, assess cash flow, register collateral, monitor repayment, and manage arrears regardless of whether the loan is USD 500 or USD 50,000. Information opacity increases the problem because loan officers must rely on repeated visits and relationship-based assessment rather than standardized financial data.

Technological innovation can lower these costs. Digital applications, electronic know-your-customer procedures, transaction histories, automated reminders, and statistical scoring can make small loans more scalable. Fully automated lending can amplify errors in data, discriminate against thin-file borrowers, or extend high-cost credit too rapidly. The policy objective is therefore not maximal automation but proportionate underwriting that preserves meaningful assessment of repayment capacity.

4.4.5 Use of movable assets and alternative collateral arrangements

Secured-transactions reform broadens the range of assets that borrowers can pledge. Centralized electronic registries can establish priority among creditors and allow lenders to check whether an asset is already pledged. Such systems are especially relevant to SMEs and farmers because movable assets comprise a large share of their productive capital. They can also support asset-based lending and value-chain finance where repayment is linked to receivables or inventory rather than to land ownership.

Evidence suggests potential but not automatic success. Pendame and Akotey (2023) find that Malawi's movable-collateral registry was associated with only a modest increase in MSME bank lending, partly because banks continued to prefer real property and emphasized repayment capacity. Alternative arrangements such as group guarantees, warehouse receipts, leasing, purchase-order finance, and receivables finance can further reduce dependence on fixed property, but each requires clear rules governing claims and default.

4.5 Credit Information Systems

4.5.1 Credit bureaus and credit registries

Credit information systems reduce information asymmetry by allowing lenders to observe part of a borrower's repayment history across institutions. Public credit registries are typically operated or supervised by central banks and often emphasize regulated institutions and larger exposures, whereas private credit bureaus may collect broader positive and negative information from banks, microfinance institutions, retailers, utilities, and other providers. The distinction varies by country, but the central economic function is similar: to make borrower reputation portable and to reduce the need for each lender to recreate information from scratch.

Empirical evidence supports the value of information sharing. Brown et al. (2009) find that information sharing is associated with greater credit availability and lower borrowing costs, particularly for opaque firms and in weak legal environments. More recent cross-country evidence shows that the introduction of credit bureaus in developing countries is associated with a significant reduction in firms' cost of debt, with stronger effects where institutions are weaker and firm opacity is greater (Fosu, 2023). These findings suggest that credit information can partly substitute for collateral and relationship histories by improving lenders' ability to differentiate risk.

4.5.2 Importance of borrower credit histories

A credible repayment history creates reputational collateral. Borrowers who repay on time can demonstrate reliability and potentially obtain larger loans, longer maturities, or better prices in the future. Credit histories can also discipline repayment because default today may reduce access tomorrow. For lenders, histories permit risk-based pricing, portfolio diversification, and faster underwriting. For the financial system, they reduce multiple lending to borrowers whose total indebtedness is otherwise invisible.

However, the quality of a credit history depends on coverage, accuracy, timeliness, and whether positive as well as negative information is reported. Thin files remain common among young adults, informal workers, microenterprises, and people entering formal finance for the first time. Therefore, inclusive credit reporting should enable borrowers to accumulate positive records and should provide accessible processes for correcting errors.

4.5.3 Alternative credit-scoring methods

Alternative credit scoring attempts to evaluate borrowers who lack conventional bank histories by using nontraditional indicators. Methods include psychometric tests, cash-flow analysis, e-commerce activity, point-of-sale data, mobile-money transactions, telecom behavior, and machine-learning models. Björkegren and Grissen (2020), for example, show that behavioral patterns in mobile-phone usage can predict credit repayment and can generate risk information for individuals who cannot be scored using traditional bureau data.

The promise of alternative scoring is especially strong in economies where mobile-phone and digital-payment use has spread faster than formal bank borrowing. Transaction data can reveal regular inflows, merchant sales, utility payments, and expenditure patterns, enabling cash-flow-based lending rather than collateral-based lending. Models can degrade as behavior changes, and variables that appear neutral may proxy for gender, location, ethnicity, or socioeconomic status. Lenders and regulators therefore need validation, explainability, bias testing, and human-review procedures for consequential decisions.

4.5.4 Use of mobile-phone, transaction, and utility-payment data

Mobile-phone and transaction data are particularly valuable because they can be generated continuously and at low marginal cost. In principle, this can extend formal credit to informal workers, microenterprises, and rural borrowers without requiring extensive paper documentation. It can also allow dynamic credit limits that respond to changing cash flow rather than to a one-time application.

Digital credit in Kenya demonstrates both the opportunity and the risk. Johnen et al. (2021) find that digital credit reaches borrowers who are less likely to use conventional formal credit, but also report substantially higher default and blacklisting problems. Credit scoring should therefore be integrated with suitability checks, transparent cost disclosure, limits on abusive collection, and mechanisms for hardship restructuring.

4.5.5 Privacy, accuracy, and consumer-protection concerns

The expansion of credit data creates important governance concerns. Borrowers may not understand what data are being collected, how long they are retained, which firms can access them, or how they affect loan decisions. Alternative scoring may also use sensitive

behavioral information that was originally generated for telecommunications, payments, or utilities rather than for credit assessment. Data minimization and purpose limitation are therefore central consumer-protection principles.

Accuracy is equally important. Incorrect defaults, duplicate identities, delayed updates, or failure to record loan settlement can exclude borrowers from formal finance. The cost of errors is especially severe where lenders rely heavily on automated bureau checks. Kenya's digital-credit experience illustrates how rapid reporting and blacklisting can turn small defaults into broad exclusion from future credit (Johnen et al., 2021). Effective systems should guarantee the right to access one's report, receive clear adverse-action explanations, dispute inaccurate information without prohibitive fees, and obtain timely correction.

Finally, regulators must balance innovation with proportionality. Wider data use can improve credit access, but it can also enable predatory targeting, discriminatory models, excessive borrowing, and aggressive collections. Credit information should function as infrastructure for building financial reputation—not merely as an enforcement tool. This distinction is especially important in low-income countries, where a single erroneous or minor adverse record can push a borrower back toward unregulated informal finance.

Table 8. Credit-information mechanisms: potential benefits and principal risks

Mechanism	Main inclusion benefit	Main risk	Policy safeguard
Credit bureau / registry	Portable repayment history; lower information asymmetry; reduced multiple lending	Incorrect records, thin files, disproportionate blacklisting	Positive and negative reporting; free/low-cost access; rapid dispute and correction
Mobile / transaction scoring	Allows thin-file borrowers to be evaluated from cash-flow and behavioral data	Privacy intrusion, proxy discrimination, model instability	Purpose limitation, consent, validation, bias testing, explainability
Utility / merchant data	Builds financial footprint without prior bank loan	Coverage gaps and data-quality inconsistency	Standardized reporting and consumer access to records

Automated digital lending	Lower screening and delivery costs; rapid small loans	Overborrowing, opaque pricing, aggressive collection	Affordability checks, cost disclosure, responsible limits, hardship options
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4.5.6 Overall implications

Across households, SMEs, and agriculture, financing constraints arise from the interaction of borrower characteristics and institutional conditions. These frictions encourage banks to ration credit, shorten maturities, demand collateral, or avoid small borrowers altogether. At the same time, informal and digital lenders can fill access gaps but may expose borrowers to high costs, rollover debt, privacy risks, and weak consumer protection.

The policy implication is that expanding credit supply alone is insufficient. Sustainable inclusion requires a credit infrastructure that improves information, broadens acceptable collateral, aligns loan products with borrower cash flow, protects consumers, and shares risk. For households, responsible lending and debt-management protections are essential; for SMEs, bookkeeping, relationship lending, movable collateral, and information sharing matter; for agriculture, seasonal design, risk management, storage finance, and rural delivery systems are critical. The objective should therefore be not simply more credit, but better-matched, affordable, and resilient credit that supports welfare and productive investment without creating new forms of financial vulnerability.

5. Institutional, Regulatory, and Governance Challenges

Financial inclusion and credit expansion depend not only on the number of banks or the volume of financial assets, but also on the quality of the institutions that govern financial intermediation. In low-income countries, regulators and banks frequently operate in environments characterized by limited administrative resources, weak contract enforcement, concentrated markets, shallow capital markets, political pressures, and imperfect information. Cross-country evidence indicates that regulatory design cannot be separated from broader institutional quality: rules that appear strong on paper may have little effect when enforcement, disclosure, judicial capacity, or supervisory independence is weak (Barth et al., 2004; Demirgüç-Kunt et al., 2004; Demirgüç-Kunt & Detragiache, 2011).

The institutional challenge is therefore broader than adopting international standards. Effective financial governance requires capable supervisors, credible enforcement, competitive but stable banking markets, transparent ownership and lending practices, reliable loan classification, and workable mechanisms for resolving distressed assets. Political influence can undermine credit appraisal; weak appraisal can increase nonperforming loans (NPLs); high NPLs can weaken bank profitability and capital; and weak banks may subsequently reduce new lending, particularly to smaller and riskier borrowers. The following subsections review these channels with particular attention to their implications for low-income and developing economies.

5.1 Weak Institutional Capacity

5.1.1 Limited supervisory and administrative resources

Effective banking supervision is resource intensive. Supervisors must be able to license institutions, evaluate ownership structures, assess capital and liquidity, verify asset classification, monitor related-party exposures, inspect governance systems, and intervene when risks become excessive. This mismatch becomes more pronounced as financial systems diversify into mobile money, fintech credit, agent banking, cross-border banking groups, and increasingly complex risk-transfer arrangements. A regulator that relies on infrequent reporting, fragmented databases, or manual inspection may be unable to identify deterioration in asset quality until losses have become difficult to contain.

Cross-country research cautions, however, against assuming that stronger formal supervisory powers automatically produce safer banking systems. Barth et al. (2004), using regulatory and supervisory data for more than 100 countries, find that policies encouraging accurate disclosure and private monitoring are often more consistently associated with banking development and stability than simply granting broader discretionary powers to supervisors. Demirgüç-Kunt and Detragiache (2011) similarly find that formal compliance with the Basel Core Principles is not, by itself, robustly associated with bank soundness. These findings are particularly relevant to low-income settings: supervisory effectiveness depends on implementation capacity, information quality, independence, and incentives, not merely the existence of legislation or a checklist of prudential rules.

5.1.2 Shortage of trained financial-sector professionals

Institutional capacity also depends on specialized human capital. Banking supervision increasingly requires expertise in credit-risk modelling, stress testing, cyber and operational risk, anti-money-laundering controls, consolidated supervision, accounting standards, digital finance, and resolution planning. When these skills are scarce, both the regulator and regulated institutions may rely excessively on simple collateral-based lending or mechanical compliance rather than forward-looking risk assessment. The problem can be severe in smaller low-income economies where the same limited pool of professionals is shared among banks, regulators, ministries, audit firms, and international institutions.

The literature on regulation and bank efficiency reinforces this point indirectly. Barth et al. (2013) show that the effects of supervision and monitoring depend on how regulatory arrangements interact with bank efficiency and market discipline. From a development perspective, investment in supervisory technology and professional training is therefore a core part of financial-sector infrastructure, comparable in importance to payment systems or credit registries.

5.1.3 Weak Enforcement of Banking Regulations

Weak enforcement creates a gap between de jure regulation and de facto behavior. If sanctions are uncertain or politically negotiable, compliance becomes less credible and prudent banks may even face a competitive disadvantage relative to institutions willing to take greater risks. This can weaken market discipline and make published capital and asset-quality indicators less informative.

The importance of the broader legal and institutional environment is well established. Demirgüç-Kunt et al. (2004) show that restrictions on entry and bank activities are associated with higher intermediation costs, but many of these effects are closely connected to broader institutions such as property-rights protection and economic freedom. Andrianova et al. (2008) likewise argue that developing countries benefit from strengthening the institutions that support private banking rather than relying only on ownership changes or direct state intervention. In low-income economies, effective enforcement therefore requires credible supervisory action, reliable courts, transparent

accounting, enforceable contracts, and consistent treatment of politically or commercially powerful borrowers.

5.1.4 Political influence over financial institutions

Political influence is one of the most consequential governance risks in banking because credit allocation involves large, discretionary transfers of resources. Dinç (2005) documents that government-owned banks in emerging markets increase lending in election years relative to private banks. Sapienza (2004) similarly finds that lending by state-owned banks in Italy responds to local political conditions, demonstrating how ownership and political incentives can affect loan pricing and allocation.

Evidence from developing economies shows that political connections can also influence default risk. Using a large loan-level dataset from Pakistan, Khwaja and Mian (2005) find that politically connected firms borrow substantially more and default more frequently, with preferential treatment concentrated in government banks. In low-income countries, where public banks may represent a large share of total financial assets, insulating lending decisions from political pressure through professional boards, transparent mandates, disclosure of related-party exposures, and independent supervision is therefore critical.

Table 9. Institutional weaknesses and their transmission to financial-sector outcomes

Institutional weakness	Banking mechanism	Likely financial-sector outcome	Priority response
Limited supervisory resources	Infrequent inspection, weak data analysis, delayed intervention	Late recognition of risk and greater probability of loss accumulation	Risk-based supervision, integrated reporting systems, adequate supervisory budgets
Shortage of skilled professionals	Weak appraisal, internal control, stress testing, and recovery capacity	Poor credit allocation and operational vulnerability	Professional training, retention, certification, and supervisory technology
Weak regulatory enforcement	Forbearance, under-provisioning, circumvention of exposure rules	Misstated asset quality and weaker market discipline	Consistent sanctions, disclosure, external audit, supervisory independence

Institutional weakness	Banking mechanism	Likely financial-sector outcome	Priority response
Political influence	Directed or connected lending and delayed recovery	Misallocation of credit, higher default risk, possible fiscal losses	Transparent mandates, independent boards, related-party controls, public reporting

5.2 Banking-Sector Concentration and Competition

5.2.1 Dominance of a small number of commercial banks

Many low-income banking systems are structurally concentrated because markets are small, fixed operating costs are high, and only a limited number of institutions have the capital, technology, branch networks, correspondent relationships, and regulatory capacity needed to operate at scale. Concentration is not identical to market power, but when a few banks dominate deposits and credit, borrowers may have limited ability to switch providers. This is particularly important for rural customers and small firms whose financial relationships are local and whose credit histories may not be portable across institutions.

Empirical research distinguishes carefully between concentration and effective competition. Claessens and Laeven (2004) find that contestability, foreign-bank entry, and fewer restrictions on entry and activities are more informative about competition than concentration ratios alone. Beck et al. (2006) similarly show that highly concentrated banking systems are not necessarily more crisis-prone once regulatory and institutional factors are taken into account. For low-income countries, the policy problem is therefore not concentration by itself, but concentration combined with high barriers to entry, weak contestability, poor information sharing, and limited customer mobility.

5.2.2 Effects of limited competition on fees and interest rates

Limited competition can increase the price of financial intermediation through wider lending spreads, lower deposit rates, higher service fees, and weaker incentives to improve product quality. Cross-country evidence from more than 1,400 banks indicates that restrictions on entry and bank activities are associated with higher net interest margins and overhead costs (Demirgüç-Kunt et al., 2004). For low-income households and

microenterprises, even relatively small fixed fees can make formal accounts or payments uneconomic, while wide credit spreads can exclude productive but low-margin activities.

Firm-level evidence also links competition to access. Love and Martínez Pería (2015), using enterprise data for 53 countries, find that lower bank competition reduces firms' access to finance and that stronger credit-information systems can mitigate part of this effect. Beck et al. (2004) show that concentration creates greater financing obstacles particularly in countries with low institutional and economic development. These findings suggest that the inclusion consequences of market structure are greatest where alternative financing channels are weak and information systems are underdeveloped—conditions that describe many low-income economies.

5.2.3 Barriers to the entry of new financial-service providers

Entry barriers can be regulatory, technological, infrastructural, or strategic. Excessively demanding licensing procedures, high minimum capital requirements unrelated to actual risk, restrictions on permissible activities, limited access to payment infrastructure, and discriminatory access to credit-information systems can discourage new providers. The policy challenge is proportional regulation: entry requirements should protect depositors and the payment system without unnecessarily shielding incumbent banks from competition.

International evidence indicates that systems with greater foreign-bank entry and fewer restrictions on bank entry and activities tend to be more competitive (Claessens & Laeven, 2004). Claessens et al. (2001) find that foreign-bank entry can improve the functioning and efficiency of domestic banking markets, although the distributional effects may differ across borrower groups. In low-income countries, the competitive role of nonbank financial institutions, microfinance providers, mobile-money operators, and fintech firms can also be important, provided that regulation allows interoperability and fair access to essential infrastructure while applying equivalent consumer-protection and prudential standards to equivalent risks.

5.2.4 Relationship between competition, stability, and inclusion

The relationship between competition and financial stability is theoretically and empirically ambiguous. One view argues that intense competition reduces bank franchise

value and encourages greater risk-taking. A competing view emphasizes that greater market power allows banks to charge higher loan rates, which can increase borrower risk and ultimately weaken bank portfolios (Boyd & De Nicoló, 2005). Beck et al. (2006) report lower crisis probability in more concentrated banking systems after controlling for institutional and regulatory conditions, whereas Schaeck et al. (2009) find evidence that more competitive banking systems can be more stable.

Evidence specific to developing countries also points to trade-offs. Turk Ariss (2010) finds that greater market power is associated with higher bank stability but lower cost efficiency in a sample of developing economies. At the same time, Love and Martínez Pería (2015) and Owen and Pereira (2018) show that competition and market power matter for financial access. Rather, low-income countries require contestable markets, credible prudential regulation, strong resolution arrangements, and information infrastructures that allow competition to expand access without weakening underwriting standards.

Table 10. Competition, concentration, and policy trade-offs

Issue	Potential benefit	Potential risk	Interpretation for low-income countries
Greater bank competition	Lower prices, stronger service incentives, wider firm access	Possible erosion of margins or underwriting standards if supervision is weak	Promote contestability together with prudential and consumer-protection capacity
High concentration	Economies of scale and potentially stronger diversification	Market power, high fees, reduced borrower choice, barriers to entry	Assess market power and contestability rather than concentration alone
Foreign / new-provider entry	Technology transfer, efficiency, new products, stronger rivalry	Cherry-picking, regulatory arbitrage, operational complexity	Use proportional licensing, interoperability, and consolidated supervision
Credit-information sharing	Reduces informational advantage of incumbents and supports switching	Privacy, inaccurate data, exclusion from erroneous records	Ensure coverage, accuracy, correction rights, and data governance

5.3 Nonperforming Loans and Banking Stability

5.3.1 Causes of nonperforming loans

Nonperforming loans arise from both macroeconomic shocks and bank-specific weaknesses. At the bank level, rapid credit growth, weak appraisal, poor monitoring, concentrated exposures, connected lending, and delayed recognition of problem assets can amplify losses. Louzis et al. (2012) show that both macroeconomic conditions and bank management quality explain NPLs, while Beck et al. (2015) find in a global sample that economic conditions are central determinants of NPL variation across countries.

Recent international evidence confirms that NPL formation is not purely cyclical. Salas et al. (2024), analyzing more than 1,600 banks across 111 countries for 2007–2021, identify persistent bank-specific as well as macroeconomic determinants of NPL ratios. This is important for low-income countries because adverse shocks are often more frequent and financial buffers thinner, but the severity of resulting banking problems depends heavily on pre-existing governance, underwriting quality, sectoral concentration, and the speed with which losses are recognized and resolved.

5.3.2 Weak loan appraisal and monitoring practices

Loan appraisal is the first line of defense against future asset-quality problems. Banks must evaluate the borrower's cash flow, leverage, business model, repayment history, exposure to shocks, and the realistic value and enforceability of collateral. After disbursement, limited monitoring can allow deterioration to continue unnoticed, especially when borrowers operate informally or financial statements are infrequent and unaudited.

Berger and DeYoung (1997) identify a strong relationship between poor management efficiency and subsequent problem loans, consistent with a “bad management” channel in which weak internal practices contribute to asset-quality deterioration. Louzis et al. (2012) also find management quality relevant to NPL formation. For low-income banking systems, strengthening underwriting requires sector-specific credit expertise, independent risk functions, reliable borrower information, realistic collateral valuation, early-warning systems, and incentives that do not reward loan officers solely for expanding loan volumes.

5.3.3 Connected lending and political interference

Connected lending weakens the normal screening and pricing process because decisions may depend on ownership, personal relationships, or political influence rather than expected repayment. La Porta et al. (2003), studying related lending in Mexico, find that loans to related parties were made on more favorable terms but were substantially more likely to default and had lower recovery rates. Khwaja and Mian (2005) likewise show that politically connected firms in Pakistan obtained more credit and experienced higher default rates, with preferential treatment concentrated in government-owned banks.

These findings are highly relevant where ownership structures are opaque, beneficial owners are difficult to identify, and supervisory agencies have limited independence. Connected lending can also conceal concentration risk: a portfolio that appears diversified across legal entities may in fact be exposed to a single business group or political network. Effective governance therefore requires strict related-party exposure limits, beneficial-ownership disclosure, independent credit committees, external audit, and supervisory powers to aggregate exposures across connected borrowers.

5.3.4 Effects on bank profitability, liquidity, and new lending

High NPLs weaken banks through several mutually reinforcing channels. Berger and DeYoung (1997) show that problem loans precede declines in measured cost efficiency, illustrating the operational burden created by distressed assets. When capital is depleted, banks may respond by shrinking risk-weighted assets or tightening lending standards rather than raising new equity.

The macroeconomic consequences can be persistent. Ari et al. (2021), using data from 92 banking crises since 1990, document substantial variation in the speed of NPL resolution and show that high, unresolved NPLs deepen post-crisis recessions. The objective of NPL policy should consequently be early recognition and credible resolution rather than repeated evergreening that merely postpones losses.

5.3.5 Loan-recovery and insolvency mechanisms

Loan recovery is not simply a bank-level collection issue; it depends on the legal infrastructure for enforcing contracts and restructuring insolvent borrowers. When lenders anticipate that collateral will take years to seize or that insolvency proceedings will destroy

going-concern value, they compensate through higher interest rates, more conservative lending, or stronger collateral requirements. These responses disproportionately exclude small firms and borrowers with limited fixed assets.

Cross-country evidence demonstrates the importance of efficient debt enforcement. Djankov et al. (2008), using comparable insolvency cases across 88 countries, show large differences in the time, cost, and recovery efficiency of debt-enforcement procedures and link more efficient enforcement to deeper debt markets. Djankov et al. (2007) also find that creditor protection and information-sharing institutions are associated with higher private credit. For low-income countries, effective reform therefore requires a balanced insolvency framework that supports viable restructuring, permits efficient realization of collateral when necessary, protects creditor rights, and avoids keeping economically nonviable borrowers permanently alive through regulatory or political forbearance.

5.3.6 Overall implications

Institutional capacity, market structure, and asset quality are closely connected. Weak supervisory capacity and political interference can reduce the quality of screening and enforcement; poorly designed entry restrictions can increase intermediation costs and protect inefficient incumbents; and unresolved NPLs can weaken banks sufficiently to reduce new lending. More competition without adequate supervision may weaken underwriting, while stricter prudential rules without institutional capacity may generate formal compliance with little substantive improvement. The scholarly literature therefore supports a system-wide approach in which regulation, governance, competition policy, credit infrastructure, and insolvency reform are designed as complementary institutions rather than isolated interventions.

For low-income countries, the central policy priority is institutional credibility. Supervisors need operational independence, adequate resources, skilled staff, and high-quality data; state-owned and private banks need transparent governance and strong related-party controls; market entry should be contestable but prudentially sound; and NPLs should be recognized, provisioned, restructured, or resolved promptly. These reforms strengthen both financial stability and financial inclusion because a well-governed, competitive, and solvent banking system is better able to extend sustainable credit to households, farmers, and small firms that are otherwise most vulnerable to institutional weaknesses.

5.4 Legal and Contractual Institutions

Financial development depends not only on the availability of savings and capital, but also on the legal institutions that determine who owns assets, how contracts are enforced, and what happens when borrowers default. In low-income countries, these institutions are particularly important because lending is often relationship based, collateral markets are thin, courts have limited capacity, and formal financial institutions face high uncertainty about recovery values. A large law-and-finance literature therefore treats property rights, creditor protection, judicial effectiveness, and insolvency procedures as core determinants of the depth and efficiency of banking systems (La Porta et al., 1998; Levine, 1998; Beck et al., 2003).

The central issue is implementation rather than legislation alone. Conversely, credible enforcement lowers uncertainty surrounding financial contracts and can make lenders more willing to extend longer-maturity and lower-cost credit. This distinction between de jure legal rules and de facto enforcement is especially relevant for low-income economies, where institutional capacity frequently constrains the practical value of formal creditor rights (Bae & Goyal, 2009; Djankov et al., 2008).

5.4.1 Property rights and contract enforcement

Secure property rights provide the foundation for collateralized lending. When households and firms possess clearly defined and transferable rights over land, buildings, equipment, or other assets, lenders can more confidently assess borrower wealth and establish claims that can be exercised in the event of default. Cross-country evidence links stronger investor and creditor rights, together with effective contract enforcement, to deeper financial systems and greater use of external finance by firms (La Porta et al., 1998; Demirguc-Kunt & Maksimovic, 1998; Levine, 1998).

Contract enforcement affects both the quantity and the price of bank credit. Bae and Goyal (2009), using international syndicated-loan data, show that weaker contract enforceability is associated with smaller loans, shorter maturities, and higher interest-rate spreads. Laeven and Majnoni (2005) similarly find that judicial efficiency is an important determinant of bank lending spreads across countries. These findings imply that weak enforcement behaves like an additional risk premium: banks must price expected delays, legal expenses, uncertain recovery, and strategic default into the terms offered to borrowers.

5.4.2 Bankruptcy and insolvency frameworks

Bankruptcy and insolvency frameworks determine how losses are allocated when a borrower can no longer meet contractual obligations. Effective systems should distinguish between viable but temporarily distressed borrowers and economically nonviable borrowers, allow orderly restructuring when continuation value is high, and provide predictable liquidation when it is not. Clear rules on priority, control, stays on enforcement, and treatment of secured creditors reduce uncertainty before lending takes place because creditors can better estimate recovery in default (Djankov et al., 2008).

The design of insolvency law involves trade-offs. Haselmann et al. (2010) find that legal reforms strengthening collateral law produced substantial increases in bank lending in transition economies, while changes in bankruptcy law had weaker effects. Vig (2013), however, shows that stronger secured-creditor rights in India caused firms to reduce secured and total debt and to hold more liquidity, illustrating that creditor protection can alter borrower behavior in ways that are not uniformly expansionary. The policy objective is therefore not maximal creditor power, but a predictable balance between recovery, restructuring, and preservation of viable economic activity.

5.4.3 Judicial delays in loan recovery

Judicial delay is one of the most direct channels through which weak institutions restrict finance. Lenders respond by demanding more collateral, shortening maturities, increasing spreads, or refusing applications from borrowers whose assets are difficult to enforce. This mechanism is especially damaging for small firms and low-income households because they are least able to compensate for institutional risk with large collateral buffers or extensive credit histories.

Evidence from Brazil demonstrates that court performance can determine whether legal reform translates into real financial development. Ponticelli and Alencar (2016) exploit differences in court congestion across municipalities following a bankruptcy reform and find that firms in locations with less congested courts experienced larger increases in secured borrowing, investment, and output. The result highlights a broader lesson for low-income countries: improving statutory bankruptcy provisions without strengthening court administration, case management, and enforcement capacity may produce limited gains.

5.4.4 Investor and creditor protection

Investor and creditor protection affects willingness to provide both debt and equity finance. Where minority shareholders face expropriation, secured creditors can be displaced in insolvency, or insiders can divert assets with little legal consequence, outside investors require higher returns or avoid the market altogether. The seminal analysis by La Porta et al. (1998) documents large international differences in shareholder and creditor protection, while subsequent research shows that both legal protection and information-sharing institutions are associated with greater private credit (Djankov et al., 2007).

Creditor protection is most effective when rights can actually be enforced. Bae and Goyal (2009) find that enforceability has economically large effects on loan size, maturity, and spreads, often exceeding the effect of formal creditor-rights indices. Legal reform should therefore combine clear statutory rights with functioning registries, predictable court procedures, professional insolvency practitioners, transparent asset sales, and credible mechanisms for appeals and enforcement.

5.4.5 Importance of reliable legal institutions for financial development

Reliable legal institutions contribute to financial development by reducing uncertainty in intertemporal exchange. Levine (1998) shows that legal systems emphasizing creditor rights and contract enforcement are associated with better-developed banks and, through banking development, stronger long-run economic performance. Beck et al. (2003) likewise find that institutional and legal characteristics help explain cross-country differences in financial development.

For low-income countries, the practical implication is that financial-sector reform cannot be separated from broader legal and administrative reform. Digitizing property and collateral registries, improving land-titling reliability, establishing specialized commercial or insolvency procedures, reducing case backlogs, strengthening judicial independence, and improving the professional capacity of courts can lower financial intermediation costs. Such measures can also improve the effectiveness of the credit-information and collateral reforms discussed in Section 4 because information and security interests have limited value if legal claims cannot be enforced predictably.

Table 11. Legal and contractual institutions and their financial consequences

Institutional area	Primary financial mechanism	Evidence from the literature	Implication for low-income countries
Property rights and contract enforcement	Increase collateral certainty and reduce expected enforcement loss.	Better enforcement is associated with larger, longer-maturity, and lower-spread loans (Bae & Goyal, 2009).	Improve ownership records, registries, enforcement procedures, and legal predictability.
Bankruptcy and insolvency	Determine restructuring, liquidation, creditor priority, and expected recovery.	Debt-enforcement efficiency predicts debt-market development; design of collateral and bankruptcy law matters (Djankov et al., 2008; Haselmann et al., 2010).	Build efficient restructuring and liquidation systems rather than relying only on stronger formal creditor rights.
Judicial efficiency	Reduces time, cost, and uncertainty of recovery.	Less-congested courts increased the impact of bankruptcy reform on secured lending and investment in Brazil (Ponticelli & Alencar, 2016).	Court capacity is a necessary complement to legal reform.
Investor and creditor protection	Reduces expropriation risk and improves willingness to supply external finance.	Creditor protection and information sharing are associated with greater private credit (Djankov et al., 2007).	Strengthen both rights and implementation, including transparent insolvency administration.
Reliable legal institutions	Support confidence in long-term financial contracting.	Legal environment and banking development are positively associated with long-run financial and economic development (Levine, 1998).	Treat judicial and legal reform as part of financial-sector development policy.

5.5 Monetary-Policy Transmission

Monetary-policy transmission describes the process through which central-bank actions influence market interest rates, bank credit, aggregate demand, output, and inflation.

Commercial banks therefore occupy a central position between the policy instrument and household or business borrowing conditions. At the same time, precisely the features that make banks important - concentrated market structures, high liquidity holdings, weak competition, limited information, and shallow interbank markets - can make transmission incomplete or delayed (Mishra et al., 2014).

The literature does not imply that monetary policy is universally ineffective in low-income economies. Recent loan-level evidence from Uganda, for example, finds meaningful pass-through from policy-rate increases to household lending rates and loan terms, while also showing that transmission differs across banks and borrowers (Conesa-Martinez et al., 2026). This heterogeneity makes institutional and financial structure central to the design of stabilization policy.

5.5.1 Role of commercial banks in transmitting monetary policy

Commercial banks transmit monetary policy through both the interest-rate channel and the bank-lending channel. A change in the central-bank policy rate affects banks' marginal funding costs, returns on liquid assets and government securities, deposit pricing, and incentives to expand or contract loan supply. The bank-lending channel is especially relevant when borrowers cannot easily substitute toward securities markets or nonbank funding.

In low-income economies, bank characteristics can strongly condition this response. Conesa-Martinez et al. (2026), using Uganda's credit-registry data, find that a 100-basis-point policy-rate increase is associated with a substantial rise in household lending rates and that loan quantities and maturities also adjust with lags. Kame Babilla (2024) similarly finds that the bank-lending channel in the West African Economic and Monetary Union becomes more effective as financial depth increases, reinforcing the idea that banking-system development and monetary-policy effectiveness are jointly determined.

5.5.2 Weak relationship between policy rates and lending rates

A central challenge in many low-income countries is incomplete pass-through from the official policy rate to the rates paid by firms and households. Mishra et al. (2014), using a heterogeneous panel of advanced, emerging, and low-income economies, find that lending-rate responses to monetary-policy shocks are significantly weaker in low-income countries.

The study links this weakness to less-developed financial structures, weaker institutional frameworks, and more concentrated banking systems. Thus, changing the policy rate may alter the central bank's stance without producing a proportionate change in retail credit conditions.

Country evidence illustrates this problem. Akosah et al. (2021) report that Ghana's policy rate has only a low-to-moderate influence on the volatility dynamics of other money-market rates, while the Treasury-bill rate plays a major role in transmitting shocks to lending rates. Such patterns can arise because bank lending rates also incorporate operating costs, expected credit losses, sovereign yields, market power, and structural risk premiums. Consequently, a policy-rate reduction may be only partly passed through to borrowers when these other components remain high.

5.5.3 Effects of shallow financial markets

Shallow financial markets weaken transmission at several stages. Thin interbank markets make it difficult for liquidity conditions to generate a common short-term market rate; underdeveloped government-security yield curves provide weak pricing benchmarks; and small corporate-bond and equity markets limit substitution between bank and market finance. Financial segmentation can therefore disconnect the central bank's operating target from the financing conditions faced by private borrowers. These weaknesses also complicate liquidity forecasting and open-market operations.

The empirical evidence is consistent with this structural interpretation. Mishra et al. (2014) find stronger lending-rate transmission in economies with more developed financial structures, while Kame Babilla (2024) shows within WAEMU that greater financial depth strengthens the bank-lending channel and the macroeconomic effects of monetary policy. In practice, deepening interbank markets, developing reliable government-security benchmarks, improving payment and settlement systems, and broadening access to formal finance can enhance both financial development and monetary-policy effectiveness.

5.5.4 Influence of excess liquidity and banking concentration

Excess bank liquidity can reduce the sensitivity of lending decisions to central-bank liquidity operations. Agénor and El Aynaoui (2010) show theoretically that excess liquidity

can alter bank pricing behavior and weaken conventional policy effects under credit-market imperfections. In low-income settings, persistent excess liquidity may reflect precautionary motives, weak credit demand, limited bankable projects, information problems, or attractive returns on government securities.

Banking concentration can reinforce these effects because banks with substantial market power need not adjust deposit and lending rates quickly in response to policy changes. Mishra et al. (2014) find that monetary-policy shocks are more likely to move lending rates in the expected direction where banking systems are less concentrated. Policies that promote contestable banking markets, interoperable payment systems, credible credit information, and responsible entry of new providers can therefore complement monetary-policy reform.

5.5.5 Implications for inflation control and economic stability

Weak or uncertain transmission complicates inflation control because the central bank must judge how large and how persistent a policy adjustment is required to influence demand. If lending rates respond slowly, a central bank may need larger or longer-lasting policy moves, increasing the risk of unnecessary output and credit volatility. Structural change therefore makes continuous empirical monitoring essential.

Transmission weakness can also interact with fiscal conditions. Akosah et al. (2021) find that Ghana's Treasury-bill rate is an important transmitter of money-market shocks, consistent with a strong role for government financing conditions. Recent evidence from Uganda further shows that sovereign exposure can shape how monetary tightening affects household credit (Conesa-Martinez et al., 2026). Where banks hold large portfolios of government securities, changes in sovereign yields can influence the opportunity cost of private lending, potentially weakening or redistributing the effects of monetary policy.

For low-income countries, effective inflation control therefore requires more than setting an appropriate policy rate. Financial-sector policies should simultaneously reduce structural impediments to pass-through by improving competition, resolving weak banks, strengthening credit infrastructure, developing domestic securities markets, and limiting distortions that encourage banks to hold excessive liquidity rather than lend productively.

Monetary stability and financial development are thus mutually reinforcing rather than separate policy objectives.

Table 12. Structural constraints on monetary-policy transmission in low-income countries

Constraint	Transmission effect	Selected evidence	Policy implication
Bank-dependent financial system	Policy must pass primarily through commercial-bank pricing and credit supply.	Uganda loan-level evidence confirms meaningful but heterogeneous bank and household responses (Conesa-Martinez et al., 2026).	Monitor bank-level transmission and strengthen bank balance sheets and credit infrastructure.
Incomplete rate pass-through	Policy-rate changes produce smaller or slower changes in retail lending rates.	LIC lending-rate transmission is weaker where institutions and financial structures are less developed (Mishra et al., 2014).	Improve the operating framework, competition, transparency, and market integration.
Shallow financial markets	Weak interbank and securities-market links interrupt the chain from policy rate to broader financing conditions.	Greater financial depth strengthens the bank-lending channel in WAEMU (Kame Babilla, 2024).	Deepen interbank, government-securities, payment, and settlement markets.
Excess bank liquidity	Banks can absorb policy changes without materially changing credit supply or pricing.	Excess liquidity changes bank pricing responses under credit-market imperfections (Agénor & El Aynaoui, 2010).	Improve liquidity management and address structural reasons for persistent surplus liquidity.
Banking concentration and sovereign exposure	Market power and high government-security holdings can weaken or reshape pass-through.	Less-concentrated systems show stronger rate transmission; sovereign exposure affects household-credit transmission (Mishra et al., 2014; Conesa-Martinez et al., 2026).	Promote contestability, manage sovereign-bank linkages, and reduce barriers to borrower switching.

Constraint	Transmission effect	Selected evidence	Policy implication
Fiscal and structural pressures	Government yields and other risk premia may dominate the policy-rate signal.	Ghana evidence identifies Treasury-bill rates as major transmitters of money-market shocks (Akosah et al., 2021).	Coordinate macroeconomic policies while preserving central-bank credibility and independence.

5.5.6 Synthesis

Sections 5.4 and 5.5 are closely connected. Weak legal and contractual institutions increase credit risk, recovery costs, and lending spreads; these same frictions can make bank lending rates less responsive to monetary-policy changes. Institutional reform therefore has a dual macro-financial payoff: it can expand sustainable credit while making interest-rate-based monetary policy more predictable and effective.

For low-income countries, the policy agenda should emphasize institutional complementarity. Better creditor and investor protection should be accompanied by efficient courts and insolvency systems; deeper financial markets should be supported by sound supervision and competition; and modern monetary-policy frameworks should be backed by active liquidity management and reliable market infrastructure. Without these complementary reforms, formal changes in law or central-bank instruments may have only limited effects on actual financial behavior and macroeconomic stability.

5.6 Consumer Protection

Financial inclusion is beneficial only when consumers can use financial services on fair, transparent, and reasonably safe terms. These characteristics make consumer protection especially important because rapid expansion of microcredit, mobile money, app-based lending, and other digital financial services can widen access while simultaneously creating new forms of consumer harm. The literature therefore increasingly treats financial consumer protection as a complement to financial inclusion rather than as a constraint on it: weak protection can undermine trust, discourage sustained usage, and turn otherwise useful credit or payment products into sources of over-indebtedness, loss, or exclusion (Schicks, 2014; Kim & Duvendack, 2025; Ntsalaze & Chipunza, 2025).

A sound consumer-protection framework generally combines conduct rules for providers, disclosure and suitability requirements, limits on unfair practices, mechanisms for complaint resolution and redress, safeguards for customer funds and transactions, and supervisory capacity to enforce these standards. The challenge in low-income economies is not only to adopt formal rules, but also to ensure that protection extends to small banks, microfinance institutions, mobile-money operators, fintech lenders, agents, and other providers that may serve the poorest consumers. Digital delivery makes this more urgent because a product can scale nationally within a short period, allowing both benefits and harmful practices to spread faster than under traditional branch-based banking (World Bank, 2017; Kim & Duvendack, 2025).

5.6.1 Transparent disclosure of fees and interest rates

Transparent pricing is a basic condition for informed financial choice. In markets where products are advertised using flat rates, short repayment periods, or fee-heavy structures, the headline price may substantially understate the effective cost of borrowing. This problem is particularly serious for low-income borrowers because even small undisclosed charges can represent a large share of disposable income and because limited numeracy makes it difficult to compare products expressed in different pricing formats.

Disclosure, however, is not effective merely because a lengthy contract exists. Research on financial consumer protection increasingly emphasizes simple key-facts statements, total-cost measures, and standardized comparison formats rather than reliance on complex legal documents. The recent Kenyan digital-credit evidence is illustrative: borrowers reported deceptive marketing, high interest charges, and weak understanding of terms in a market where credit could be obtained rapidly through mobile phones (Kim & Duvendack, 2025). This suggests that digital convenience should be matched by equally accessible disclosure, including clear display of the total repayment amount and all charges before confirmation.

5.6.2 Prevention of abusive lending practices

Consumer protection must also address provider conduct after disclosure. Abusive lending includes extending loans without adequate assessment of repayment capacity, encouraging repeated refinancing, using misleading advertising, imposing disproportionate penalties, coercive collection, or exploiting borrower vulnerability. These practices can be especially

damaging in microfinance and digital credit, where small nominal loan sizes can create an impression of low risk even when repayment schedules are frequent and borrowers hold multiple simultaneous debts.

Evidence from Ghana shows that microfinance over-indebtedness is associated with adverse shocks, low returns on loan-financed activities, non-productive loan use, and weak debt-specific literacy; severely indebted borrowers may make unacceptable sacrifices to continue repayment (Schicks, 2014). More recent synthesis research identifies responsible lending and borrowing, microfinance-driven over-indebtedness, and the welfare consequences of excessive debt as major themes in the global literature (Ntsalaze & Chipunza, 2025). In Kenya, qualitative evidence from digital borrowers documents aggressive collection, blacklisting, very high borrowing costs, deceptive marketing, and misuse of personal information (Kim & Duvendack, 2025). These findings support conduct rules that prohibit harassment and deceptive sales, require affordability assessment, and create supervisory consequences for persistent harmful lending practices.

5.6.3 Complaint-resolution mechanisms

An effective market requires a credible mechanism through which consumers can challenge errors, unauthorized transactions, unfair charges, mis-selling, or abusive treatment. Internal complaint systems within financial institutions are usually the first level of redress, but they are insufficient if consumers do not know that they exist, channels are inaccessible, cases are not tracked, or the institution is effectively judging its own conduct. Good systems therefore require clear submission channels, time limits for response, record keeping, escalation procedures, and access to an independent ombudsman, regulator, mediator, or other external dispute-resolution body when internal resolution fails.

Empirical evidence indicates that consumer-protection policy can improve dispute outcomes when it is enforced. Xia et al. (2024), using more than 12,000 complaints in China and a quasi-experimental design, find that a strengthened financial consumer-protection policy improved consumers' perceptions of dispute resolution, with regulatory punishment and media attention acting as potential channels. Recurrent complaints can reveal hidden fees, agent misconduct, system outages, identity theft, or aggressive collection that conventional prudential supervision may not detect.

5.6.4 Protection against fraud and unauthorized transactions

The expansion of electronic payments and mobile money changes the nature of consumer risk. Cash theft remains important, but digital users may face phishing, social engineering, SIM-swap fraud, account takeover, agent fraud, malware, credential theft, mistaken transfers, and transactions initiated without valid authorization. Protection therefore requires both preventive controls and clear rules allocating liability when a disputed transaction occurs.

Research on Ghanaian mobile money identifies fraud as a material threat to the sustainability of mobile financial services and emphasizes coordinated controls involving operators, agents, banks, regulators, and users (Akomea-Frimpong et al., 2019). More recent work from rural India finds that cyber fraud weakens trust and adoption of payment banking, while cybersecurity awareness positively supports digital financial inclusion (Afzal et al., 2025). Providers should apply strong authentication, transaction monitoring, fraud alerts, agent controls, rapid account blocking, and fair investigation procedures, while regulators should define when consumers are reimbursed for unauthorized transactions and how quickly disputes must be resolved.

5.6.5 Responsible lending and borrowing standards

Responsible lending aims to ensure that credit is suitable and affordable, not merely legally available. A lender should assess income, existing obligations, repayment capacity, and the purpose and structure of the loan rather than relying only on collateral value or a borrower's willingness to accept credit. Responsible borrowing is the complementary demand-side concept: consumers should receive information and capability support that helps them compare alternatives, understand repayment obligations, avoid unnecessary multiple borrowing, and seek assistance early when distress emerges.

The institutional case for client protection is not limited to borrower welfare. Hossain et al. (2026), using panel data from 984 microfinance institutions in 88 countries, find that implementation of client-protection principles in the lending process is associated with lower credit risk. In low-income-country policy, responsible lending should therefore be integrated into credit assessment, sales incentives, debt collection, restructuring, and product governance. The objective is not to prevent poor households from borrowing, but

to make credit expansion sustainable and to reduce the probability that inclusion deteriorates into repeated refinancing, distress sales of assets, or long-term exclusion from formal finance.

Table 13. Consumer-protection risks and appropriate safeguards

Consumer-protection issue	Potential harm	Evidence highlighted in the literature	Priority safeguard
Opaque pricing and disclosure	Consumers underestimate the total cost of credit or payments and cannot compare products.	Kenyan digital-credit borrowers report high costs, deceptive marketing, and weak transparency (Kim & Duvendack, 2025).	Standardized key-facts disclosure; effective-cost measures; clear total repayment and fee information before consent.
Abusive or unsuitable lending	Over-indebtedness, refinancing cycles, coercive collection, and welfare losses.	Borrower-level evidence links microfinance over-indebtedness to shocks, low returns, non-productive loan use, and weak debt literacy (Schicks, 2014).	Affordability assessment, product suitability, limits on harassment and deceptive sales, and early restructuring.
Weak complaint resolution	Errors and misconduct remain unresolved; trust declines; supervisors lose market-conduct intelligence.	A quasi-experimental study finds stronger consumer-protection policy improved perceived dispute resolution (Xia et al., 2024).	Accessible internal complaints, response deadlines, records, escalation, and independent external redress.
Fraud and unauthorized transactions	Direct financial loss, identity theft, reduced trust, and withdrawal from digital finance.	Mobile-money fraud is documented in Ghana; cyber fraud reduces trust and digital adoption in rural India (Akomea-Frimpong et al., 2019; Afzal et al., 2025).	Strong authentication, monitoring, agent controls, rapid reporting/blocking, and clear liability/reimbursement rules.
Weak responsible-lending standards	Credit access expands faster than borrowers' capacity to repay.	Client-protection principles are associated with lower MFI credit risk across 88 countries (Hossain et al., 2026).	Repayment-capacity assessment, responsible sales incentives, credit-data checks, restructuring, and fair collections.

5.7 Financial Integrity and Cybersecurity

Financial inclusion must develop within a system that protects the integrity of financial transactions and the security of customer data. These objectives are complementary to inclusion when they build confidence and move transactions into regulated channels. They can, however, become barriers when compliance requirements are applied rigidly, when customers cannot satisfy documentation rules, or when security failures make formal digital finance appear more dangerous than cash or informal alternatives (Shehu, 2012; Ofoeda, 2022; Halim & Basu, 2024).

The central policy problem is therefore proportionality. Applying a high-cost compliance model designed for wealthy banked populations may discourage providers from serving small accounts, while weak AML/CFT and cybersecurity controls can undermine confidence and expose the system to crime. The appropriate approach is risk-based: controls should be strong where risk is high, simplified where risk is demonstrably lower, and supported by technology, supervision, and consumer safeguards (Shehu, 2012; FATF, 2025).

5.7.1 Anti-money-laundering requirements

AML/CFT frameworks require financial institutions to identify and assess customer risk, monitor transactions, maintain records, report suspicious activity, and apply enhanced controls in higher-risk circumstances. These measures protect financial-system integrity by making it harder to conceal illicit funds and by creating records that support investigation. An inclusive formal system can itself strengthen AML/CFT because transactions that would otherwise remain in cash or informal channels become visible to regulated institutions (Shehu, 2012).

Empirical evidence suggests that the relationship is nonlinear rather than uniformly restrictive. Ofoeda (2022), using data for 212 economies over 2012-2019, finds that AML regulation can promote financial inclusion up to a point, but overly intensive regulation may become damaging in some settings. The objective should be a system capable of identifying suspicious activity without making a low-value savings account or payment wallet so expensive to open and maintain that providers or customers abandon formal finance.

5.7.2 Know-your-customer regulations

Know-your-customer and customer-due-diligence requirements are the operational foundation of AML/CFT. In low-income countries, however, potential customers may lack a conventional identity document, proof of address, tax record, utility bill, or stable residence. Women, migrants, refugees, rural residents, informal workers, and displaced people are often disproportionately affected by these documentation requirements.

Research on Malaysia illustrates how this can produce exclusion even where the law formally permits a risk-based approach. Halim and Basu (2024) find that CDD requirements can impede access for marginalized groups and that financial institutions may engage in overly cautious compliance rather than use available flexibility. The same principle applies to many low-income countries: tiered KYC can allow low-risk accounts with lower transaction limits to be opened using simplified identification, while more extensive verification is required as account functionality or risk increases.

5.7.3 Balancing financial integrity with inclusion

Financial integrity and inclusion should not be framed as opposing objectives. Shehu (2012) argues that appropriately simplified KYC and CDD for lower-risk products can support both inclusion and AML/CFT effectiveness. Consistent with this reasoning, the FATF strengthened its risk-based approach in 2025 to emphasize proportionality and simplified measures in lower-risk circumstances, explicitly linking implementation of the standards with financial inclusion (FATF, 2025).

The main danger is indiscriminate de-risking: institutions may reject whole customer categories, regions, occupations, or nationalities because they are perceived as costly or risky rather than assessing actual risk at the customer or product level. Recent research on customer due diligence similarly highlights the risk that over-compliance can neutralize regulatory flexibility (Halim & Basu, 2024). A balanced framework therefore requires supervisors to evaluate not only whether institutions comply with AML/CFT rules, but also whether their risk models, account closures, documentation policies, and simplified-measure decisions are reasonable and evidence-based.

5.7.4 Cybersecurity risks in digital banking

Digital finance creates a large attack surface because accounts depend on phones, networks, applications, agents, APIs, cloud systems, payment switches, and third-party service providers. Threats range from phishing and social engineering at the customer level to credential theft, SIM swapping, insider abuse, malware, ransomware, denial-of-service attacks, database breaches, and attacks on payment infrastructure. In low-income countries, cybersecurity risk is magnified when service providers grow rapidly, regulatory capacity is limited, legacy telecommunications technologies remain in use, and consumers have little experience recognizing fraud.

The inclusion consequences are increasingly visible. Afzal et al. (2025) find that cyber fraud reduces trust and adoption of payment banking in rural India, whereas cybersecurity awareness supports digital financial inclusion. Akomea-Frimpong et al. (2019) document mobile-money fraud risks and the need for coordinated controls in Ghana. Most recently, Mvogo et al. (2026), using household survey data from Cameroon, show that active risk monitoring and process-based trust are important for continuous mobile-money use in an environment exposed to cyberattacks. These studies reinforce a key point: cybersecurity is not only an operational-risk issue for providers; it is also a determinant of whether financially excluded households are willing to remain in the formal digital system.

An inclusion-sensitive cybersecurity strategy should combine provider-level controls with consumer-facing safeguards. Providers need secure system architecture, access controls, encryption, multifactor or risk-based authentication, transaction monitoring, vulnerability management, incident response, backup and recovery, third-party risk management, and rapid fraud containment. Regulators also need incident-reporting rules and the capability to assess whether providers have proportionate cybersecurity governance rather than relying solely on customer vigilance.

5.7.5 Protection of personal and financial data

Digital financial services increasingly depend on data. Research demonstrates the predictive value of these data: Björkegren and Grissen (2020) show that patterns in mobile-phone usage can predict credit repayment, while Berg et al. (2020) find that simple digital-footprint variables can contain information comparable to traditional credit-bureau scores.

These innovations may expand credit access for consumers with thin or nonexistent formal records.

The same technologies create major privacy and fairness concerns. Data collected for one purpose may be reused for marketing, debt collection, or behavioral profiling; inaccurate records may lead to unjust denial of services; and a breach can expose both identity and financial information. Kshetri (2021) notes that artificial intelligence can support inclusion in developing countries while also raising concerns related to privacy, bias, cybersecurity, and institutional capacity. Kenyan digital-credit evidence likewise documents data-privacy infringements and the use of personal information in aggressive collection practices (Kim & Duvendack, 2025).

Effective data protection therefore requires more than nominal consent. Core principles include lawful and limited collection, purpose limitation, data minimization, accuracy, security safeguards, retention limits, transparency, access and correction rights, restrictions on inappropriate sharing, and accountability for third-party processors. In low-income settings, these protections are central to maintaining trust because consumers who experience identity theft, public exposure of debt, or unexplained digital exclusion may return to cash and informal finance, reversing gains in inclusion.

Table 14. Financial-integrity and cybersecurity challenges in inclusive finance

Challenge	Inclusion risk if poorly managed	Evidence highlighted in the literature	Inclusion-sensitive response
AML/CFT compliance	High compliance costs or blanket restrictions may make small accounts commercially unattractive.	Cross-country evidence indicates a nonlinear AML regulation-inclusion relationship (Ofoeda, 2022).	Apply proportional, risk-based controls; focus enhanced measures on genuinely higher-risk activity.
KYC/CDD documentation	Customers without formal ID or proof of address may be denied basic accounts.	CDD can impede marginalized groups when banks over-comply and do not use regulatory flexibility (Halim & Basu, 2024).	Tiered KYC, broader acceptable documents, e-KYC where reliable, and low-risk entry-level accounts.

Challenge	Inclusion risk if poorly managed	Evidence highlighted in the literature	Inclusion-sensitive response
De-risking	Entire customer groups may lose access to payments, remittances, salaries, and savings.	Scholarly and FATF guidance emphasizes risk-sensitive rather than categorical exclusion (Shehu, 2012; FATF, 2025).	Individual/product-level risk assessment, review of closures, and supervisory scrutiny of blanket exclusions.
Cyber fraud and attacks	Losses and repeated scams reduce confidence and sustained use of digital finance.	Fraud harms adoption in rural India; monitoring and trust support continuous mobile-money use in Cameroon (Afzal et al., 2025; Mvogo et al., 2026).	Authentication, monitoring, incident response, agent controls, awareness, rapid reporting, and fair reimbursement processes.
Data-intensive finance	Privacy breaches, opaque profiling, discriminatory scoring, and misuse of personal information.	Digital footprints and mobile usage can predict credit outcomes, creating both inclusion potential and governance concerns (Berg et al., 2020; Björkegren & Grissen, 2020).	Data minimization, purpose limitation, security, correction rights, algorithmic governance, and accountable third-party sharing.

5.7.6 Synthesis

Sections 5.6 and 5.7 show that the quality of inclusion matters as much as the number of accounts opened. Consumer protection determines whether households can use credit, savings, and payment products without being misled, over-indebted, defrauded, or denied effective redress. Cybersecurity and data governance determine whether digital finance remains trustworthy as services become increasingly remote, automated, and data-intensive. These policy areas should therefore be designed as a single architecture of responsible inclusion rather than as separate regulatory silos.

For low-income countries, the practical agenda is to combine simple and enforceable consumer rules with risk-based integrity standards and minimum digital-security requirements. Regulators need the capacity to supervise market conduct as well as prudential soundness; providers need incentives to assess affordability, resolve complaints, protect data, and manage cyber risk; and consumers need understandable information and

accessible avenues for redress. When they are weak, rapid expansion of digital finance can amplify fraud, abusive lending, privacy violations, and exclusion, undermining the developmental purpose of financial inclusion itself.

6. Microfinance and Cooperative Finance

Microfinance emerged as an institutional response to a persistent problem in low-income countries: large segments of the population have viable financial needs but remain unattractive to conventional banks because they lack formal collateral, documented income, credit histories, and convenient access to branches. Modern microfinance encompasses credit, savings, insurance, payments, and other small-value financial services designed around the cash-flow patterns and risk exposure of low-income clients (Matin, Hulme, & Rutherford, 2002; Meki & Quinn, 2024). This broader perspective is important because poor households require financial instruments not only to invest in enterprises but also to accumulate lump sums, smooth consumption, respond to shocks, and manage irregular income.

6.1 Development of Microfinance

6.1.1 Historical development of microfinance institutions

The roots of microfinance predate the modern microcredit movement and can be traced to rotating savings and credit associations, cooperatives, credit unions, moneylenders, and community-based savings groups. The modern institutional phase, however, gained global visibility from the 1970s onward, particularly through experiments in Bangladesh that demonstrated that poor borrowers could repay very small, unsecured loans when lending contracts were adapted to local information and enforcement conditions. Morduch (1999) described this period as a 'microfinance promise': institutions showed that lending to poor households without traditional collateral could achieve high repayment rates, although evidence on profitability and poverty reduction remained more mixed.

Bangladesh subsequently became one of the major laboratories of microfinance innovation. Hassan (2002) documents how the Grameen experience influenced the international spread of microfinance by demonstrating methods for serving borrowers previously considered too costly or risky for formal banks. Over time, the sector evolved from subsidized NGO-led programs toward a heterogeneous industry that includes

regulated microfinance banks, nonbank financial institutions, cooperatives, commercial providers, and digitally enabled lenders. Recent reviews emphasize that this evolution has also been shaped by crises, consumer-protection concerns, greater attention to savings, and the adoption of digital technologies (Meki & Quinn, 2024).

6.1.2 Group-based lending and joint liability

Group-based lending became one of the defining institutional innovations of early microfinance. This structure can use local information to reduce problems of adverse selection and moral hazard: group members often know more about one another's reliability and business prospects than an outside lender does, and repeated interaction can strengthen screening, monitoring, and repayment incentives. Ghatak and Guinnane (1999) show theoretically how joint liability can improve borrower selection and enforcement when conventional collateral is unavailable. Besley and Coate (1995), however, demonstrate that group liability can have both positive and negative repayment effects because social collateral may encourage repayment but interdependence may also transmit one member's default to others.

Subsequent experimental evidence has refined the early view that joint liability is essential for microfinance. Giné and Karlan (2014), studying Philippine lending groups, found that converting established groups from joint to individual liability did not increase default, while group meetings and social interaction were retained. This result indicates that information exchange, repeated contact, repayment discipline, and lender-client relationships may be as important as the legal assignment of joint liability itself. Consequently, many MFIs have moved toward more flexible individual-liability products while preserving some group-based delivery features.

6.1.3 Small loans for low-income households and microenterprises

The core microcredit product is a relatively small loan designed for borrowers with limited assets and irregular income. The attraction of microcredit lies in its ability to substitute cash-flow-based lending and relationship mechanisms for the collateral and formal financial records demanded by mainstream banks. In this sense, microfinance lowers the entry threshold to formal or semi-formal finance and can enable low-income households to

undertake investments that would otherwise be financed through costly informal debt or foregone altogether.

Nevertheless, high-quality impact evaluations caution against treating microcredit as a universally transformative anti-poverty instrument. Across six randomized evaluations, Banerjee, Karlan, and Zinman (2015) identify a broad pattern of modestly positive but not transformative effects. In Hyderabad, expanded access to group microcredit increased investment and profits among some pre-existing businesses but did not produce broad increases in consumption, health, education, or women's empowerment (Banerjee et al., 2015). In rural Morocco, access to microcredit increased self-employment investment and profits among likely borrowers, but average household income and consumption did not rise significantly (Crépon et al., 2015). These findings suggest that microcredit is best understood as a financial tool whose benefits depend on borrower characteristics, investment opportunities, loan design, and local economic conditions rather than as an automatic route out of poverty.

6.1.4 Expansion of micro-savings and insurance products

A major development in the sector has been the shift from 'microcredit' to 'microfinance.' Low-income households often need safe and flexible savings facilities as much as they need loans. Matin et al. (2002) argue that finance for the poor should be understood as a portfolio of mechanisms that help households transform small, irregular cash flows into useful lump sums for business, consumption, social obligations, and emergencies. In Bangladesh, MFIs gradually moved from compulsory savings linked to borrowing toward more flexible deposit products, reflecting growing recognition that poor households are active savers rather than merely borrowers (Dowla & Alamgir, 2003). Rutherford (2024) similarly emphasizes that successful microsavings models often build on familiar informal money-management practices and provide convenience, safety, and liquidity.

Evidence from Kenya illustrates the economic importance of accessible savings. Dupas and Robinson (2013) randomly offered basic bank accounts to self-employed individuals and found that many female market vendors used the accounts, increased savings, and raised productive investment and private expenditure. Microinsurance represents a parallel effort to protect low-income clients against health, weather, death, livestock, and other

shocks. However, demand is often constrained by price, liquidity, limited understanding, basis risk, product quality, and lack of trust (Platteau, Gelade, & De Bock, 2017). Thus, the broadening of microfinance toward savings and insurance has increased its relevance for household risk management, but effective product design and consumer protection remain essential.

6.2 Contribution of Microfinance to Financial Inclusion

6.2.1 Reaching people excluded from conventional banks

Microfinance contributes to financial inclusion by designing institutions around clients whom conventional banks often exclude. Typical microfinance borrowers have small transaction sizes, little formal collateral, irregular earnings, short or nonexistent credit histories, and high geographic or informational barriers to mainstream finance. MFIs respond through simplified products, relationship-based screening, local branches or field officers, group meetings, frequent repayment, and progressively larger repeat loans. Morduch (1999) emphasizes that this institutional innovation was central to the sector's early achievement: microfinance demonstrated that financial services could be extended to populations previously treated as 'unbankable.'

Financial inclusion through microfinance should, however, be assessed by useful access and sustained usage rather than the number of loans disbursed. The systematic review by Van Rooyen, Stewart, and de Wet (2012) found that microcredit and microsavings in sub-Saharan Africa could produce both positive and negative livelihood effects. Likewise, the randomized-evaluation literature reports considerable heterogeneity in take-up and outcomes (Banerjee, Karlan, & Zinman, 2015). Therefore, outreach is most developmentally meaningful when services are affordable, transparent, suited to client cash flows, and accompanied by safeguards against multiple borrowing and over-indebtedness.

6.2.2 Credit access for women and rural households

Women and rural households have been priority groups for many MFIs because both face structural disadvantages in formal finance. Women may own fewer titled assets, have less control over household property, face mobility or documentation constraints, and be underserved by male-dominated banking networks. Group-based microfinance can

partially overcome these constraints by taking services closer to communities, accepting social rather than physical collateral, and allowing small, frequent transactions.

Evidence from Bangladesh has frequently linked women's microfinance participation with greater household agency. Pitt, Khandker, and Cartwright (2006) found results consistent with women's participation in microcredit improving several dimensions of empowerment. However, later experimental evidence cautions that empowerment gains are not automatic: Banerjee et al. (2015) found no significant average effect on women's empowerment in their Hyderabad experiment. The appropriate review conclusion is therefore that microfinance can expand women's financial access and may strengthen agency in some institutional settings, but outcomes depend on control over loan use, household norms, repayment pressure, complementary capabilities, and the profitability of available activities.

6.2.3 Financing self-employment and microenterprises

Microfinance is closely linked to self-employment because many low-income economies contain large informal sectors and numerous household enterprises that require only small amounts of working capital. Savings services can complement credit by allowing entrepreneurs to self-finance and avoid rigid repayment obligations. Dupas and Robinson (2013) show that access to a simple savings account substantially increased productive investment among female market vendors in Kenya, demonstrating that capital constraints can arise from inadequate savings technology as well as from lack of credit.

The microcredit experiments further show that enterprise effects are concentrated among particular borrowers rather than uniformly distributed. Banerjee et al. (2015) observed higher investment and stronger profits among some pre-existing businesses, while Crépon et al. (2015) found increased investment and profit among households most likely to borrow. Where local markets are saturated or returns are low, simply expanding debt may have limited development impact.

6.2.4 Supporting household consumption and emergency needs

Low-income households use financial services for consumption smoothing as well as production. Income is often irregular while food, school fees, medical costs, ceremonies,

rent, and emergency expenses arrive at specific times. Matin et al. (2002) argue that appropriate microfinancial services help households assemble lump sums for a wide range of life-cycle and emergency needs. From a welfare perspective, a loan or withdrawal that prevents distress sale of productive assets can be valuable even if it does not directly finance a business.

Evidence from rural Bangladesh supports this risk-management role. Islam and Maitra (2012) found that access to microcredit mitigated the effect of health shocks by reducing households' need to sell livestock in order to smooth consumption. Savings and microinsurance can play similar roles by creating buffers before shocks occur and providing resources when losses materialize. Yet insurance uptake is often low because poor households face liquidity, trust, and comprehension constraints (Platteau et al., 2017). Thus, the contribution of microfinance to resilience is strongest when clients can combine credit with voluntary savings and credible insurance rather than rely repeatedly on debt after every shock.

6.2.5 Overall assessment

The evidence indicates that microfinance has made a durable contribution to financial inclusion by proving that low-income, female, rural, and informal-sector clients can be served through specialized financial technologies. Its most important achievement is therefore institutional as well as economic: it widened the frontier of whom financial institutions are willing and able to serve. Average impacts on income and consumption are often modest, while effects on enterprise investment, risk management, and empowerment vary considerably across clients and settings (Banerjee, Karlan, & Zinman, 2015).

For low-income countries, the policy implication is to treat microfinance as one component of an inclusive financial system rather than a substitute for broader development. Sustainable inclusion requires diversified products, sound regulation, strong consumer protection, appropriate pricing, credit-information systems, digital and physical infrastructure, and links between MFIs, cooperatives, banks, payment providers, and insurance markets. The evolution from microcredit toward savings, insurance, payments, and digital services is therefore central to the sector's future relevance (Meki & Quinn, 2024).

6.3 Microfinance and Poverty Reduction

The relationship between microfinance and poverty reduction remains one of the most debated issues in development finance. Early observational and panel-data studies generated considerable optimism by linking participation in microfinance programs with higher household consumption, lower poverty, and stronger outcomes for female borrowers. The contemporary literature therefore no longer treats microcredit as a uniformly transformative anti-poverty intervention. Instead, it emphasizes heterogeneity: impacts vary according to borrower characteristics, existing business experience, local market opportunities, loan design, repayment flexibility, and the length of exposure to financial services (Banerjee, Karlan, & Zinman, 2015; Meager, 2019; Meki & Quinn, 2024).

6.3.1 Evidence on household income and consumption

Earlier evidence from Bangladesh suggested that microfinance could reduce poverty through sustained effects on household consumption. Using panel data, Khandker (2005) reported that access to microfinance contributed to poverty reduction among participants, particularly female participants, and also generated village-level effects. These findings were influential because they suggested that microfinance could produce benefits beyond the borrowing household. Roodman and Morduch (2014), in a re-analysis of influential non-experimental evidence, showed that estimated poverty effects were highly sensitive to outliers, functional-form assumptions, and estimation methods, concluding that the original data could not definitively answer the impact question.

The wave of randomized evaluations published in 2015 produced more consistent evidence across different countries. Banerjee, Karlan, and Zinman (2015), synthesizing six randomized evaluations, concluded that expanded microcredit access generally generated modestly positive but not transformative effects. In Hyderabad, India, Banerjee et al. (2015) found higher business investment and some gains among pre-existing businesses, but no significant increase in average household consumption. In rural Morocco, Crépon et al. (2015) found increased investment and profits among likely borrowers, yet overall income and consumption did not rise because gains in self-employment were partly offset by reduced casual-labor income. Angelucci, Karlan, and Zinman (2015), evaluating a high-

interest group-lending expansion in Mexico, similarly found no transformative effects across a broad set of outcomes. Meager (2019), pooling evidence from seven randomized experiments using a Bayesian hierarchical framework, concluded that average effects on household business and consumption outcomes were unlikely to be transformative and could be close to zero.

6.3.2 Effects on entrepreneurship and employment

The strongest case for microcredit has traditionally rested on the hypothesis that poor households possess profitable investment opportunities but are constrained by lack of capital. The Hyderabad experiment found greater investment in existing businesses and higher profits for some pre-existing enterprises, while the Morocco study found higher investment and profits among households with a greater propensity to borrow (Banerjee et al., 2015; Crépon et al., 2015). These results indicate that microcredit can relax working-capital constraints where entrepreneurs already have skills, customers, and viable business opportunities.

Employment effects are more complicated. In Bosnia and Herzegovina, Augsburg et al. (2015) found higher self-employment and increased inventory among marginal borrowers offered microcredit, but also a reduction in wage employment and no significant increase in total household income. More broadly, Meager (2019) finds larger but more heterogeneous effects among households with prior business experience. Cueva, Osman, and Speer (2024) similarly argue that modest average treatment effects can conceal large differences across borrowers: a financial product that has little average impact may still be highly valuable for a subset of clients with high-return opportunities.

6.3.3 Women's empowerment and control over household resources

Microfinance programs have often targeted women on the expectation that access to finance can increase their bargaining power, economic participation, and control over household resources. Pitt, Khandker, and Cartwright (2006) reported that women's participation in microcredit programs was associated with improvements in multiple dimensions of autonomy and decision-making. Such findings helped establish women-focused group lending as a central feature of the microfinance movement.

However, the broader causal evidence is substantially more cautious. The Hyderabad randomized evaluation found no statistically significant average effect on women's empowerment (Banerjee et al., 2015). A systematic review and meta-analysis by Vaessen et al. (2014), focused specifically on women's control over household spending, concluded that the pooled effect was not statistically different from zero among studies meeting minimum quality criteria. Empowerment effects are therefore likely to depend on product design and complementary interventions such as skills development, market access, legal rights, and mechanisms that strengthen women's actual control over income and assets.

6.3.4 Differences between short-term and long-term impacts

The timing of evaluation is crucial because short-run credit use may differ from longer-run adjustments in enterprise investment, household portfolios, and debt exposure. In Hyderabad, several initial effects on business investment were visible after approximately 15–18 months, but by the later follow-up—after control areas had also gained access and treatment households had borrowed for longer—few significant differences persisted (Banerjee et al., 2015). This pattern weakens the argument that standard microcredit necessarily creates cumulative, compounding poverty-reduction effects for the average borrower.

Contract design can nevertheless change the time profile of impacts. Field et al. (2013) compared the classic immediate-repayment model with a two-month grace period in India. The grace period increased short-run business investment and produced higher longer-run profits, although it also increased default risk. Recent reviews therefore emphasize repayment flexibility as an important direction for redesigning microfinance products (Barboni, 2024). Overall, long-term impacts appear to depend less on repeated access to small loans per se than on whether contracts allow borrowers to undertake productive investments, manage cash-flow volatility, and avoid debt stress.

6.4 Limitations and Criticisms of Microfinance

The rapid expansion of microfinance generated concerns that the institutional features responsible for its scale—small loans, frequent repayment, intensive monitoring, group-based discipline, and commercial pressure for sustainability—can also constrain its development impact. The most useful interpretation of these criticisms is not that

microfinance is inherently harmful, but that financial inclusion can create risks when products are too small for productive investment, too expensive for low-return activities, poorly coordinated across lenders, or designed around repayment performance rather than borrower welfare. Contemporary scholarship therefore increasingly focuses on responsible product design, borrower protection, heterogeneity in returns, and the balance between financial sustainability and social outreach (Meki & Quinn, 2024; Mendelson & Rozas, 2024).

6.4.1 Small average loan sizes

Small loan size is both a defining strength and a limitation of traditional microfinance. Very small loans make finance accessible to clients with limited repayment capacity and reduce lender exposure, but they may be insufficient for investments that require a large initial outlay, such as machinery, durable equipment, irrigation, transport assets, or expansion into higher-value production. Barboni (2024) notes that standard microcredit contracts remain characterized by relatively small ticket sizes and frequent repayments. These features can be appropriate for working capital but may prevent entrepreneurs from exploiting high-return, illiquid investments.

Loan size also has an institutional dimension. Cull, Demirgüç-Kunt, and Morduch (2007) show that profitability and outreach can involve trade-offs, while Hermes, Lensink, and Meesters (2011) find that MFIs serving clients with lower average loan balances tend to be less operationally efficient. Consequently, increasing loan size may improve institutional economics but can also shift portfolios toward relatively better-off customers. The policy challenge is therefore not simply to make loans larger, but to offer graduated products that match borrower capacity and investment needs without sacrificing access for poorer clients.

6.4.2 High effective interest rates

Microfinance interest rates are often substantially higher than conventional bank lending rates because small loans generate high administrative costs per unit lent. Cull, Demirgüç-Kunt, and Morduch (2009) show that high operating costs are a central reason microfinance providers charge relatively high rates, and they caution that strong repayment performance does not mean the underlying model is inexpensive. More recent cross-

country evidence likewise identifies operating costs, financial costs, loan losses, loan size, and macroeconomic conditions as important determinants of MFI interest rates (Rauf et al., 2022).

High rates are particularly problematic when borrowers finance low-return or consumption activities, because repayment obligations can absorb a large share of household cash flow. The Compartamos experiment evaluated group lending at an annual percentage rate of approximately 110 percent and found no transformative effects across a wide range of outcomes (Angelucci et al., 2015). Interest-rate regulation must nevertheless be designed carefully because blunt caps can make very small loans commercially unviable and thereby reduce outreach.

6.4.3 Multiple borrowing and over-indebtedness

Competition among MFIs can improve convenience and service quality, but rapid lender expansion without effective credit-information sharing can also facilitate multiple borrowing. Households may take new loans to repay existing obligations, accumulate overlapping installments, or become exposed to shocks that make their total debt service unsustainable. Schicks (2014), using borrower-level data from Ghana, shows that over-indebtedness is associated with adverse shocks, low investment returns, and non-productive loan use, and that borrowers experiencing debt stress make substantial sacrifices to maintain repayment.

Historical microfinance crises reinforce this concern. Mendelson and Rozas (2024) review episodes including Andhra Pradesh and show how rapid expansion, weak safeguards, aggressive lending, and repayment problems have repeatedly prompted major regulatory reforms. The appropriate response is therefore stronger responsible-lending standards, effective credit bureaus, affordability assessment, limits on harmful refinancing, and early restructuring mechanisms rather than assuming that high repayment rates alone demonstrate healthy borrower outcomes.

6.4.4 Pressure created by frequent repayment schedules

Traditional microfinance often requires repayment to begin shortly after disbursement and continue weekly or monthly. Field et al. (2013) provide direct experimental evidence for this trade-off: borrowers receiving a grace period invested more in businesses and earned

higher long-run profits, but they also defaulted more often. Thus, rigid repayment is not merely an administrative feature; it can influence the type and risk profile of investments borrowers undertake.

Barboni (2024) reviews a growing literature on flexible repayment structures and concludes that greater flexibility can improve business outcomes by helping borrowers respond to income volatility and undertake larger investments. However, flexibility also raises screening and credit-risk challenges for lenders. The design problem is therefore to create repayment schedules that respond to seasonal and irregular cash flows without eliminating repayment discipline or increasing costs excessively.

6.4.5 Limited impact on the poorest households

The poorest households may be the least able to benefit from conventional debt-based microfinance. Extreme poverty is often associated with poor health, food insecurity, lack of productive assets, weak skills, low risk-bearing capacity, and unstable income. When returns to available activities are low, debt can finance consumption or survival needs without creating a future income stream large enough to comfortably repay the loan.

Institution-level evidence also points to a trade-off between serving poorer clients and financial performance. Cull et al. (2007) find that institutions can achieve profitability while serving poor borrowers, but the data reveal tension between profitability and depth of outreach. Hermes et al. (2011) similarly find lower efficiency among MFIs with smaller average loan balances and higher shares of women borrowers. Its comparative advantage is greater for clients who can use liquidity productively or to smooth temporary shocks.

6.4.6 Risk of mission drift

Mission drift refers to a shift away from the original social objective of serving poor and marginalized clients toward relatively wealthier or lower-cost customers as institutions pursue profitability, scale, or investor returns. The concern is intuitive because serving very poor clients is costly: transactions are small, clients may live in remote locations, and intensive monitoring is often required. Commercialization can therefore create incentives to increase average loan size, adopt individual rather than group loans, move toward urban markets, or prioritize clients with more predictable repayment capacity.

Empirical evidence is nuanced rather than uniformly negative. Mersland and Strøm (2010), using a multi-country panel of rated MFIs, found no general industry-wide increase in average loan size or broad shift away from women and group lending, although greater profit and higher costs were associated with some indicators of drift. Cull et al. (2009) likewise show that institutions serving poorer clients and women are not always the most attractive targets for purely profit-maximizing investors. Mission drift is therefore best treated as a governance risk requiring explicit social-performance indicators, transparent pricing, client-outcome measurement, appropriate investor incentives, and regulation that rewards sustainable inclusion rather than portfolio growth alone.

6.4.7 Overall assessment

The limitations of microfinance do not negate its contribution to financial inclusion. Credit works better when borrowers have viable opportunities, loan sizes match investment needs, repayment schedules fit cash flows, prices are transparent, and lenders prevent harmful multiple borrowing. For the poorest households, debt may need to be combined with savings, insurance, social protection, training, asset transfers, or market-development interventions. The current research agenda has therefore moved beyond the binary question of whether microfinance “works” toward identifying which clients benefit, which contract features improve outcomes, and how financial institutions can expand access without transferring excessive risk to vulnerable borrowers (Cueva et al., 2024; Meki & Quinn, 2024).

6.5 Sustainability–Outreach Trade-Off

The sustainability–outreach debate concerns whether microfinance institutions (MFIs) can remain financially viable while continuing to serve poor and geographically dispersed clients. They are financial intermediaries that must cover operating, funding, credit-loss, and administrative costs, yet they also pursue social objectives such as serving low-income households, women, rural clients, and microenterprises that conventional banks may consider too costly or risky. The tension is particularly important in low-income countries because the cost per unit of lending is often high when loans are small, transactions are frequent, and branch or field-officer networks must reach remote communities. Conning (1999) formalized this problem by showing that sustainable institutions targeting poorer

borrowers generally face higher monitoring and staff costs per unit of lending, making the depth of outreach intrinsically costly in many settings.

6.5.1 Financial self-sufficiency of microfinance institutions

Financial self-sufficiency refers to the ability of an MFI to cover the full economic cost of providing financial services from internally generated revenues, after allowing for operating expenses, loan losses, financing costs, and, in stricter measures, the implicit cost of subsidized capital. Financial self-sufficiency is important because institutions that continually lose money may be unable to expand, invest in technology, retain qualified staff, withstand shocks, or maintain services once external support ends. A financially viable MFI can potentially expand its client base, attract deposits and commercial funds, and continue operations without repeated donor rescue.

The empirical literature, however, shows that sustainability may be harder to achieve when an institution reaches poorer clients. Cull, Demirgüç-Kunt, and Morduch (2007), using data from leading microbanks across 49 countries, found that profitability and outreach can coexist but identified a trade-off between profitability and serving the poorest borrowers. Hermes, Lensink, and Meesters (2011) similarly reported that MFIs with smaller average loan balances and higher shares of female borrowers tended to be less cost efficient. These findings are consistent with the fact that a loan of US\$100 can require almost as much screening, monitoring, record keeping, and repayment collection as a much larger loan, so transaction costs represent a larger proportion of the principal for poor clients.

At the same time, the relationship is not universal. Mersland and Strøm (2010) found no general industry-wide trend toward larger average loans or urban clients that would indicate systematic mission drift. The appropriate interpretation is therefore that financial self-sufficiency changes the incentives and operating constraints of MFIs, but its social consequences depend on governance, ownership, technology, product design, competition, regulation, and the characteristics of the clients served.

6.5.2 Dependence on subsidies and donor funding

Subsidies and donor finance played a central role in the historical expansion of microfinance. Subsidies can be justified when the social benefits of inclusion exceed the

private financial returns captured by the MFI, especially in sparsely populated rural areas or among extremely poor households where service delivery is costly. Hermes and Lensink (2011) note that the high transaction and information costs of microfinance have left many programs dependent, at least during part of their development, on donor support.

Long-term dependence on subsidies nevertheless raises several concerns. Persistent subsidies may also weaken incentives for cost control or distort competition if subsidized institutions underprice sustainable local providers. Conversely, removing subsidies too quickly may induce an MFI to raise prices, reduce costly rural outreach, increase average loan size, or shift toward clients with more predictable income. Evidence from the microfinance literature therefore supports a distinction between poorly designed permanent subsidies and transparent, performance-oriented support targeted at market-building functions, innovation, infrastructure, or clearly defined high-cost social objectives. The central policy question is not simply whether subsidies exist, but whether they generate additional and durable outreach that would not otherwise be provided.

6.5.3 Commercialization of microfinance

Commercialization refers to the growing use of market-based funding, for-profit ownership, commercial management practices, regulated financial-company structures, and investor capital in the microfinance sector. Access to equity and debt markets can release MFIs from the scale limitations of donor budgets, while stronger accounting, governance, risk management, and performance incentives can improve institutional discipline. Commercial funding may also enable investment in digital systems, deposit services, product diversification, and wider geographic expansion. For this reason, commercialization should not automatically be equated with a loss of social mission.

The main criticism is that commercialization can alter the institution's target function. Larger loans to less-poor borrowers are often cheaper to administer and may generate higher revenue per transaction, while remote rural clients and very poor borrowers may require greater staff time and more flexible products. Xu, Copestake, and Peng (2016) found that higher operational self-sufficiency was associated with larger average loan balances, consistent with a possible mission-drift mechanism. Mia and Lee (2017), using panel data from 169 Bangladeshi MFIs, found that greater reliance on commercial funding

and stronger profit orientation were associated with shallower outreach. Evidence from a large Chinese MFI also shows that commercialization changes frontline incentives, although organizational practices and loan-officer characteristics can help preserve outreach to poorer borrowers (Jia et al., 2016).

Other studies caution against generalizing these findings. Mersland and Strøm (2010) did not find systematic mission drift across a large multicountry dataset, and theoretical work shows that for-profit structures need not necessarily exclude poorer borrowers if contract design permits cross-client or product differentiation (Awaworyi Churchill, 2018). The commercialization debate is therefore best understood as a governance problem: commercial capital can support large-scale inclusion, but boards, regulators, and investors must ensure that social performance indicators remain part of institutional decision-making rather than being displaced by narrow profitability targets.

6.5.4 Balancing institutional profitability with social objectives

The most useful framework for understanding the trade-off is the “double bottom line.” Under this approach, MFIs are evaluated simultaneously on financial indicators and social-outreach indicators. Financial measures include operational self-sufficiency, return on assets, portfolio quality, cost per borrower, and productivity. Social indicators include number of active borrowers and savers, average loan size relative to national income, rural penetration, share of female clients, retention of vulnerable borrowers, product suitability, and client outcomes. For example, rapid growth in borrower numbers may conceal weak repayment quality, while a rise in profitability may reflect a shift toward larger and less-poor clients rather than efficiency gains.

Empirical studies support this multidimensional interpretation. Cull et al. (2007) demonstrate that institutions can be profitable while serving low-income clients, but the deepest outreach is often more costly. Hermes et al. (2011) identify a negative relationship between depth of outreach and efficiency, whereas Mersland and Strøm (2010) show that mission drift is not inevitable. Recent work also finds that macroeconomic and institutional conditions affect the sustainability–outreach relationship (Xu et al., 2024). Some institutions may specialize in commercially sustainable mass-market microfinance, while

nonprofit or cooperative organizations use member capital, cross-subsidization, or carefully structured public support to serve high-cost groups.

A balanced strategy requires transparent social-performance targets, board-level oversight of mission, suitable incentives for loan officers, responsible pricing, client-protection standards, efficient technology, and funding structures compatible with the institution's objectives. Profitability is valuable when it protects continuity and scale; it becomes problematic when achieved by transferring excessive risk or cost to vulnerable borrowers or by abandoning groups the institution was established to serve. The sustainability–outreach challenge is therefore not to eliminate profit but to align financial discipline with the social purpose of inclusive finance.

6.6 Cooperatives and Community-Based Finance

Cooperatives and community-based financial organizations represent a distinct pathway to financial inclusion because ownership, capital formation, and accountability are located partly or wholly within the member community. These institutions include savings and credit cooperatives (SACCOs), credit unions, rotating savings and credit associations (ROSCAs), accumulating savings and credit associations, self-help groups, and Village Savings and Loan Associations (VSLAs). Their comparative advantage lies in local information, social relationships, low-cost savings mobilization, and the ability to design rules around the financial practices of members. Their comparative weakness is that the same local character can generate governance, management, liquidity, and concentration risks if internal controls are weak.

6.6.1 Savings and credit cooperatives

Savings and credit cooperatives are member-owned financial institutions in which users typically supply savings and share capital and obtain loans from the pooled resources. This structure can strengthen incentives to provide affordable services tailored to members rather than maximize returns to external shareholders. SACCOs can mobilize small local savings that might otherwise remain outside the formal financial system and recycle them into household, agricultural, and microenterprise credit. They may therefore be particularly valuable in rural districts where transaction sizes are too small to attract commercial banks.

Evidence from Eastern Ethiopia illustrates the potential of the model. Henock (2019) found that sampled SACCOs were financially sustainable on average and achieved moderate outreach, with deposit mobilization and financial self-sufficiency playing important roles in performance. Comparative evidence from Ethiopia also suggests that financial cooperatives can sometimes contain costs and combine small loan sizes with strong female outreach more successfully than some specialized MFIs (Abate, Borzaga, & Getnet, 2013). These results show why member-owned finance should not be treated merely as an informal transitional form; under suitable governance and supervision, it can be a durable component of inclusive financial systems.

6.6.2 Rotating savings and credit associations

ROSCAs are among the most widespread forms of informal finance. Members contribute a fixed amount at regular intervals, and the pooled amount is allocated to one member in each round until every participant has received the pot. ROSCAs allow members to transform small periodic savings into a larger lump sum without relying on a formal financial institution. Their durability reflects more than lack of bank access: they can provide commitment, discipline, social support, and a mechanism for protecting savings from immediate household claims.

The economics literature identifies several functions of ROSCAs. Anderson and Baland (2002), using evidence from Kenya, show that participation can help women protect savings and influence intrahousehold resource allocation. Gugerty (2007) finds that Kenyan ROSCAs also operate as commitment devices for members who find it difficult to save individually. Empirical work in Jamaica documents how contract design and leadership arrangements contribute to ROSCA sustainability and transaction-cost minimization (Handa & Kirton, 1999). More recent reviews conclude that ROSCAs can generate both financial benefits and social-capital effects, although outcomes depend on trust, enforcement, group composition, and the capacity of members to maintain regular contributions.

6.6.3 Village savings groups

Village savings groups, especially VSLAs, adapt community finance to a more flexible accumulating model. Interest paid on internal loans becomes part of the group's assets and

is normally distributed together with savings at the end of a cycle. Because the fund is built primarily from member savings rather than external loan capital, VSLAs can operate in remote communities without permanent bank branches and without creating large external debt obligations.

Randomized evidence provides support for important but bounded effects. Ksoll, Lilleør, Lønborg, and Rasmussen (2016) found that VSLAs in northern Malawi increased savings and credit use and were associated with improvements in several household outcomes, agricultural investment, and small-business income. In a large randomized evaluation across Ghana, Malawi, and Uganda, Karlan, Savonitto, Thuysbaert, and Udry (2017) found improvements in business outcomes and women's empowerment, while average consumption and broader livelihood outcomes showed little change. These findings suggest that savings groups improve local financial intermediation and some dimensions of resilience and enterprise activity, but should not be interpreted as a stand-alone solution to poverty.

Community-managed finance can also struggle to reach the very poorest. Lønborg and Rasmussen (2014) found that the poorest households were attracted to a VSLA intervention in Malawi but were less likely to complete participation, indicating that even savings-led models impose contribution, time, and participation requirements. Program design therefore needs flexible contribution rules, appropriate meeting schedules, and complementary support when the objective is inclusion of households with extremely limited cash flow.

6.6.4 Community ownership and local accountability

Community ownership is one of the central strengths of cooperative finance. Members elect leaders, approve rules, contribute capital, observe one another's transactions, and can use local knowledge to assess borrowers. Member ownership may also increase trust because users have a direct stake in the institution and can participate in decisions about interest rates, loan priorities, surplus distribution, and enforcement. Schmidt (2017), examining Ugandan SACCOs and savings groups, emphasizes the importance of genuinely implementing cooperative principles and cooperation between cooperatives if member-owned finance is to translate formal ownership into effective governance.

Local accountability, however, is not automatic. Cooperative democracy may also weaken when attendance falls or when institutions grow beyond the scale at which members can easily monitor managers. Research on cooperative governance therefore emphasizes the coexistence of different and sometimes conflicting roles: boards must represent members, monitor management, provide strategic leadership, and safeguard the organization simultaneously (Cornforth, 2004). Effective member ownership requires transparent elections, accessible financial statements, segregation of duties, independent audits, and credible sanctions for misuse of funds.

6.6.5 Governance and management challenges

Governance is the principal vulnerability of many community-based financial institutions. Common problems include weak bookkeeping, inadequate loan appraisal, insider lending, fraud, low capital buffers, liquidity shortages, delinquency, concentration of loans among a few members, and insufficient separation between elected boards and professional management. As organizations expand, the information advantage of close community relationships can diminish even as the financial consequences of managerial mistakes grow.

The cooperative literature also highlights collective-action problems. Cazzuffi and Moradi (2012), studying historical Ghanaian cocoa cooperatives, found evidence that larger groups experienced interaction problems, although economies of scale outweighed these costs over much of the observed range. Cornforth (2004) similarly describes cooperative governance as involving persistent tensions between democratic representation and expert control. In SACCOs, these tensions can become particularly serious when member boards approve risky lending, fail to enforce repayment against influential borrowers, or do not adequately supervise salaried managers.

Regulation must therefore be proportionate to institutional size and risk. Very small savings groups may be best supported through standardized constitutions, transparent cash-box procedures, member training, and external facilitation rather than bank-like prudential supervision. Evidence from Uganda indicates that SACCO governance and the practical application of cooperative principles remain essential to sustainable performance (Schmidt,

2017), while broader sub-Saharan evidence shows that governance and institutional quality influence both financial performance and outreach (Barry & Tacneng, 2014).

6.6.6 Overall contribution of cooperative and community finance

Cooperatives, ROSCAs, and village savings groups broaden the institutional diversity of financial systems in low-income countries. They mobilize local savings, create lump sums, provide emergency liquidity, finance microenterprises and agricultural activities, and can strengthen women's financial autonomy and social capital. Because they are embedded in communities, they can also build financial capability by making saving, borrowing, record keeping, and collective decision-making regular practices.

Their limitations are equally important. Community finance cannot substitute for safe national payment systems, deposit insurance, long-term investment finance, formal credit reporting, or sophisticated risk pooling. The most promising policy approach is therefore a layered financial system in which community groups and cooperatives retain their local strengths while gaining access, where appropriate, to regulated banks, digital payments, insurance, apex cooperative structures, audit services, liquidity facilities, and proportionate supervision. Such linkages can preserve community ownership while reducing the risks created by isolation and limited managerial capacity.

7. Digital Finance and Financial Technology

Digital finance has become one of the most important structural changes in the financial systems of low- and middle-income economies. The Global Findex 2025, based on surveys conducted in 2024, reports that 75% of adults in low- and middle-income economies now own a financial account and 61% made or received a digital payment, with mobile money making a particularly large contribution to inclusion in Sub-Saharan Africa (World Bank, 2025). Scholarly research nevertheless shows that the development impact of digital finance depends on reliable telecommunications, accessible cash-in/cash-out points, appropriate regulation, consumer capability, and the ability of digital services to move beyond simple transfers toward savings, credit, payments, and risk management (Aron, 2018; Ahmad, 2020; Kim et al., 2018).

7.1 Mobile Money

7.1.1 Development of mobile-money services

Mobile money refers to electronically stored monetary value that can be accessed and transferred through a mobile device, often without requiring the user to hold a conventional bank account. Early systems appeared in emerging markets at the beginning of the 2000s, including SMART Money in the Philippines, but the launch and rapid diffusion of M-PESA in Kenya from 2007 became the canonical example of mobile money as a financial-inclusion technology. Pelletier, Khavul, and Estrin (2020) show that mobile money expanded particularly rapidly in emerging economies where conventional banking institutions and market-supporting infrastructure were weak. Aron (2018) similarly argues that mobile money can partially leapfrog deficiencies in branch banking by combining ubiquitous mobile communications with low-value electronic transactions.

The expansion of mobile money has altered the institutional boundaries of finance. In many countries, nonbank mobile-network operators pioneered the service, while regulated banks increasingly provide linked savings, credit, and settlement functions. This institutional diversity has helped widen access but has also created regulatory questions concerning safeguarding of customer funds, interoperability, agent oversight, competition, consumer protection, and know-your-customer requirements (Reynolds et al., 2018; Ahmad, 2020). More recent evidence confirms that agent credibility and service quality are important determinants of sustained mobile-money use, especially among less financially empowered customers (Shaikh et al., 2023).

7.1.2 Cash-in and cash-out agent networks

Agent networks are the physical backbone of mobile money. Agents - often small retailers, pharmacies, airtime sellers, post offices, or dedicated kiosks - perform these cash-in and cash-out functions and may also support account registration, bill payment, transfers, and customer assistance. Reynolds et al. (2018) emphasize that cash-in/cash-out networks are indispensable to branchless finance because the digital account itself does not remove the need to interface with physical cash.

The geographic density, liquidity, reliability, and trustworthiness of agents strongly influence adoption and continued use. The Kenyan experience illustrates the importance of

network scale: Jack and Suri (2014) use the rapid expansion of the M-PESA agent network as a source of variation in access and show that reduced transaction costs improved households' ability to receive remittances and smooth consumption after shocks. Thus, successful mobile money depends on a hybrid infrastructure in which digital platforms reduce back-office costs while local agents provide the last-mile physical interface.

7.1.3 Person-to-person transfers

Person-to-person transfers were among the earliest and most widely used mobile-money services. They are particularly valuable where workers migrate to towns and cities while supporting relatives in rural areas, or where households rely on extended family networks to manage risk. Digital transfer systems allow users to send small amounts rapidly over long distances while maintaining a transaction record.

The welfare importance of this function is supported by some of the strongest causal evidence in the mobile-money literature. Jack and Suri (2014) find that Kenyan mobile-money users were better able to smooth consumption in response to negative shocks because they received more remittances from a wider network of senders. Suri and Jack (2016) further show that the long-run spread of M-PESA increased consumption and reduced extreme poverty in Kenya, with especially strong effects for female-headed households. These results indicate that person-to-person transfers can improve financial resilience not by creating income directly, but by reducing the friction involved in sharing resources across households and locations.

7.1.4 Payment of wages, bills, and government benefits

As mobile-money ecosystems mature, usage tends to expand beyond transfers into recurring payments. Employers can pay wages directly into digital accounts; households can settle electricity, water, school, and merchant bills without traveling to a payment office; and governments can deliver pensions, social assistance, emergency transfers, and public-sector wages electronically. This transition is important because routine incoming payments can create a gateway to broader account use, while digital records may strengthen transparency and reduce administrative leakage.

Experimental evidence from Niger demonstrates the potential of mobile delivery of government transfers. Aker et al. (2016) found that recipients of mobile cash transfers

spent less time traveling and waiting for payments than recipients of manually delivered transfers, while treated households experienced improvements in diet diversity and women's intrahousehold bargaining position. Evidence from India also shows that technology-enabled government-payment infrastructure can improve speed, predictability, and integrity: Muralidharan, Niehaus, and Sukhtankar (2016) found that biometric Smartcard payments reduced payment delays and leakage in large employment and pension programs. Together, these studies suggest that digitizing wages and government benefits can reduce the transaction costs of receiving income, although reliable agent and authentication infrastructure remains essential.

7.1.5 Contribution to rural financial access

Mobile money has particular relevance for rural financial inclusion because conventional branch expansion is expensive in sparsely populated areas with low average balances and transaction sizes. This architecture can lower travel time, improve remittance access, and create an entry point for rural households to save, pay, and eventually borrow through digital channels. The literature therefore treats mobile money as both a payment technology and an institutional mechanism for extending the financial frontier (Aron, 2018; Ahmad, 2020).

However, rural inclusion is not automatic. Cross-country research also indicates that improved mobile-network proximity does not translate uniformly into greater mobile-money adoption, suggesting that infrastructure must be complemented by trust, relevant products, affordable pricing, and active agent markets. Recent evidence from Bangladesh likewise finds that rural digital-finance gains are stronger when households are close to agent outlets and possess adequate digital literacy (Noor, 2026). Therefore, rural digital inclusion should be understood as an ecosystem outcome rather than as a consequence of mobile coverage alone.

7.2 Digital Banking

7.2.1 Mobile and internet banking services

Digital banking differs conceptually from mobile money because it generally refers to access to regulated bank accounts and banking products through mobile applications, internet platforms, USSD channels, or other electronic interfaces. In practice, the boundary

is increasingly blurred: mobile-money wallets can be linked to banks, banks can operate app-based wallets, and fintech providers can distribute bank-originated credit and savings products. Kim et al. (2018) describe mobile financial services as a broad category including mobile banking, payments, money transfer, and remittances, reflecting this convergence.

For customers, mobile and internet banking can make balance inquiries, transfers, bill payments, merchant payments, account statements, and other routine services available without visiting a branch. This reduces travel costs and waiting time, which is especially important for low-income customers whose opportunity cost of a branch visit may be high relative to the value of the transaction. Recent survey evidence from Bangladesh and Indonesia finds that access to banking or payment apps is associated with a 4% to 10% lower preference for cash, suggesting that digital banking can encourage movement from informal cash-based activity toward traceable formal transactions (Hunter et al., 2024).

7.2.2 Agent banking and branchless banking

Agent banking applies the branchless-finance logic within the regulated banking sector. Banks authorize third-party retailers or business correspondents to perform specified transactions such as deposits, withdrawals, transfers, remittance receipt, account opening support, and balance inquiries. For customers, the benefits include closer service points, longer opening hours, and lower travel costs.

Rigorous evidence from rural India demonstrates that such models can affect financial behavior. Kochar (2018) evaluates the expansion of local business correspondents and finds that branchless banking increased both total and financial savings, with larger effects among poorer households. Evidence from Bangladesh also identifies agent banking as an important channel for bringing deposits, remittances, and other bank services into rural and previously unbanked locations, although sustainability depends on agent profitability, liquidity, consumer trust, and regulatory oversight.

7.2.3 Digital savings and loan products

Once customers can transact digitally, financial institutions can offer savings and credit products at lower marginal distribution cost. Automated recurring deposits, goal-based

accounts, and instant transfers can make saving more convenient for households with irregular cash flows. Digital transaction histories can also create data that help lenders assess customers with limited conventional credit records.

Digital lending illustrates both the opportunities and risks of this model. Yet digital credit may also carry short maturities, high effective annualized costs, opaque terms, and default risk. Evidence from Malawi shows substantial demand for small digital loans but also widespread misunderstanding of loan terms, late repayment, and fees (Robinson et al., 2024). This implies that the expansion of digital loan products should be accompanied by transparent pricing, responsible lending standards, and safeguards against repeated borrowing. Digital banking therefore expands product access, but product quality and consumer capability determine whether access improves welfare.

7.2.4 Reduced transaction and service-delivery costs

Cost reduction is one of the principal economic mechanisms through which digital banking can expand inclusion. Traditional branches require buildings, security, cash handling, salaried staff, and relatively high fixed operating expenses. Digital channels allow software, centralized processing, electronic records, and agents to serve many customers at lower marginal cost. Pelletier et al. (2020) interpret the rise of mobile money through transaction-cost and institutional theories, emphasizing its ability to reduce the frictions that characterize financial exchange in emerging markets.

Lower delivery costs can translate into lower customer costs through reduced travel, waiting time, and sometimes lower fees, although these savings are not guaranteed if providers possess significant market power or charge high digital fees. Therefore, the relevant comparison is not between a costless digital channel and a costly physical channel, but between different service architectures. Well-designed digital-agent models can reduce average costs substantially while preserving the local physical access required in cash-based economies.

7.2.5 Expansion of banking beyond physical branches

The most important structural effect of digital banking is the separation of financial access from the location of a conventional branch. This increases the feasible service radius of banks and creates new opportunities to reach villages and peri-urban settlements where a

branch would not be profitable. Kochar (2018) provides direct evidence that doorstep branchless banking can raise household financial savings, while the broader mobile-finance literature finds that digital channels can reduce geographic and institutional barriers to formal finance (Aron, 2018; Kim et al., 2018).

Nevertheless, the expansion of digital banking should not be equated with the disappearance of branches or cash. The emerging model is therefore hybrid: centralized digital infrastructure handles information and transactions, mobile applications provide self-service access, agents provide local cash and basic banking functions, and branches concentrate on higher-value or more complex services. For low-income countries, this hybrid structure can provide a more economically viable route to universal access than branch-led expansion alone.

7.2.6 Overall assessment

Mobile money and digital banking have significantly changed the economics of financial inclusion. Their strongest contribution lies in lowering the geographic and transaction-cost barriers that previously made small-value financial services difficult to deliver profitably. Current Global Findex evidence confirms that digital channels are now central to account ownership and payment use in low- and middle-income economies, while peer-reviewed studies show measurable benefits in risk sharing, savings, payment efficiency, government-transfer delivery, and rural access (Jack & Suri, 2014; Kochar, 2018; World Bank, 2025).

At the same time, digitalization creates new dependencies and risks. Consequently, the development value of fintech depends on a supportive institutional environment: interoperable payment systems, competitive agent markets, reliable connectivity, proportionate regulation, consumer protection, digital identification, cybersecurity, and effective complaint mechanisms. Digital finance is therefore best viewed as an enabling infrastructure for inclusion rather than a substitute for sound financial institutions.

7.3 Digital Payments

7.3.1 Merchant payments and QR-code systems

Merchant digital payments are an important step beyond the use of mobile money only for remittances or cash transfers. Low-cost quick-response (QR) codes have been especially significant because they allow small merchants to accept payments without investing in

conventional point-of-sale terminals. QR-based systems can therefore reduce the fixed cost of merchant acceptance and are particularly relevant for microenterprises, market vendors, and other businesses with small transaction values.

Evidence from India illustrates both the promise and the limitations of merchant digitization. Ligon et al. (2019), studying more than 1,000 small merchants in Jaipur, found that many non-adopters already possessed bank accounts, suitable devices, literacy, and the means to afford digital-payment infrastructure. More recent evidence on small-scale merchants using India's Unified Payments Interface (UPI) similarly emphasizes ease of use, facilitating conditions, trust, and perceived usefulness as central determinants of sustained merchant adoption (Rao & Upadhyaya, 2026).

The development importance of QR systems is therefore not simply that they replace cash at the point of sale. Digital merchant payments can connect microenterprises to formal accounts, generate transaction records, support inventory and cash-flow management, and potentially create data that later support credit assessment. However, low adoption or low transaction intensity may persist if customers continue to prefer cash, network reliability is weak, merchants fear taxes or surveillance, or settlement into formal accounts creates liquidity inconveniences.

7.3.2 Government-to-person transfers

Government-to-person (G2P) payments include pensions, social-assistance transfers, public-sector wages, scholarships, emergency relief, and other benefits paid directly to individuals. Their digitization can reduce travel time, administrative cost, payment delays, leakage, and opportunities for informal extraction while simultaneously introducing beneficiaries to transaction accounts. Klapper and Singer (2017) argue that government payments can serve as an entry point into formal finance when beneficiaries receive funds into accounts that are useful beyond the transfer itself.

Randomized and large-scale program evidence supports several of these mechanisms. In Niger, Aker et al. (2016) found that mobile delivery of cash transfers reduced the time beneficiaries spent traveling and waiting for payments and was associated with improved household diet diversity and greater privacy for female recipients. In India, Muralidharan, Niehaus, and Sukhtankar (2016) showed that biometrically authenticated payment

infrastructure made public employment and pension payments faster and more predictable and reduced leakage. These studies indicate that digital delivery can improve state capacity and recipient welfare, although the benefits depend on reliable identification, cash-out infrastructure, interoperability, and effective grievance mechanisms.

7.3.3 Digital payment of taxes, fees, and social benefits

Digital payment systems also reshape transactions between citizens, businesses, and the state. Digitization can simplify payment procedures, reduce queuing and travel costs, produce electronic receipts, and lower the scope for cash-based leakage. These effects are particularly valuable in low-capacity settings where physical government offices are sparse and compliance costs are high.

Cross-country evidence suggests that digital finance may strengthen revenue mobilization. Using data from 104 developing countries, Apeti and Edoh (2023) find that mobile-money adoption is associated with higher tax revenue, with broader tax bases, better institutional quality, and simplification of tax-payment procedures identified as important channels. This does not imply that every tax imposed through or on digital platforms is inclusion-enhancing. The appropriate policy distinction is between using digital rails to reduce the cost of paying legitimate taxes and taxing the use of digital payment systems so heavily that adoption is discouraged.

7.3.4 Formalization of household and business transactions

Digital payments can contribute to economic formalization by creating transaction trails that are absent in purely cash-based economies. For households, electronic histories can document receipt of wages, remittances, government benefits, and routine payments. These records can improve bookkeeping and may help previously 'thin-file' borrowers establish a financial identity. In this sense, payments infrastructure can become an informational layer for savings, credit, taxation, and business services.

However, formalization is not automatic. Ligon et al. (2019) show that some merchants view the traceability of digital transactions as a potential tax cost, which can weaken adoption incentives. The strongest development case is therefore for digital payments embedded within a wider environment of simple business registration, predictable taxation, consumer protection, and interoperable financial services.

7.3.5 Reduction of cash-handling costs

Cash is familiar and widely accepted, but it imposes costs that are often hidden: travel to obtain or deposit cash, theft risk, counting and reconciliation, payment delays, storage, counterfeit risk, and the need to physically coordinate transactions. Digital payments reduce some of these frictions by allowing value to move remotely and quickly. Annan et al. (2024) emphasize transaction costs as a central factor influencing both adoption and usage of digital payments in low-income countries.

Firm-level and agricultural evidence demonstrates the relevance of these savings. Yao et al. (2022) find that smallholders in Côte d'Ivoire and Tanzania who used mobile money for commercial transactions were substantially more likely to participate in distant markets, consistent with digital payments lowering transaction and enforcement costs. Konte and Tetteh (2023), using enterprise data from 14 African countries, find that mobile money can complement traditional banking services and improve firm productivity, particularly through reduced transaction frictions. The policy implication is that the value of digital payments extends beyond convenience: lower payment costs can change where firms trade, how they allocate working capital, and how easily they connect to formal financial services.

7.4 Fintech Lending

7.4.1 Digital credit platforms

Fintech lending uses digital channels to originate, assess, disburse, and collect loans. Platforms range from bank-fintech partnerships embedded in mobile-money systems to independent app-based lenders and marketplace platforms. By automating application and underwriting processes, digital lenders can make small loans available remotely and at high speed. This can reduce geographic barriers, paperwork, and the fixed costs that make conventional banks reluctant to serve low-balance borrowers.

The Kenyan experience shows why digital credit is simultaneously viewed as an inclusion innovation and a consumer-protection challenge. Johnen, Parlasca, and Mußhoff (2021) find that digital credit expands borrowing opportunities, including for people less likely to access conventional credit, but also accounts for a very high share of borrower blacklistings. Kim and Duvendack (2025) likewise show that the distributional promise of

mobile loans must be assessed against who actually receives credit and whether product design produces sustainable inclusion.

7.4.2 Automated and alternative credit scoring

A defining feature of fintech lending is the use of automated scoring based on data beyond conventional bureau files. Alternative information can include mobile-phone usage, digital transactions, device characteristics, e-commerce behavior, education, employment, cash-flow records, and other behavioral indicators. Machine-learning models can process these variables at scale and potentially identify creditworthy borrowers who appear risky or cannot be scored under traditional methods.

Several influential studies demonstrate the predictive value of such data. Björkegren and Grissen (2020) show that behavioral patterns in mobile-phone usage can predict loan repayment among people with thin or nonexistent formal financial histories. Berg et al. (2020) find that simple digital-footprint variables can match or complement traditional credit-bureau information in predicting consumer default. Jagtiani and Lemieux (2019) show that alternative data and machine learning in fintech lending can reclassify some borrowers who would be considered subprime under traditional measures into better risk categories. More recently, Di Maggio and Ratnadiwakara (2026) find that alternative data can identify 'invisible prime' borrowers whose formal credit files understate their true credit quality.

These gains must be balanced against concerns about privacy, consent, representativeness, bias, model opacity, and the possibility that nonfinancial behavior becomes a de facto condition of credit access. Alternative scoring is most inclusion-enhancing when the data are accurate and relevant, customers understand how information is used, adverse decisions can be explained or challenged, and models are tested for discriminatory outcomes.

7.4.3 Short-term mobile loans

Many low-income-country digital-credit products are very small, unsecured, and short term. Their appeal lies in immediacy: borrowers can obtain liquidity for food, transport, medical needs, school expenses, emergencies, or working capital without a branch visit. Yet short maturities can make seemingly modest fees extremely expensive when

annualized, and rapid disbursement may encourage borrowing before users have fully assessed repayment capacity.

Evidence from Malawi illustrates this tension. Brailovskaya, Dupas, and Robinson (2024) document substantial demand for a 15-day digital loan, but many borrowers did not understand the loan terms, repaid late, and incurred significant late charges. Complementary evidence from Mexico shows that speed itself can affect repayment: Burlando, Kuhn, and Prina (2025) find that doubling the delivery delay from roughly ten to twenty hours reduced default by about one-fifth. These findings challenge the assumption that maximum lending speed is always welfare-enhancing.

7.4.4 Opportunities for borrowers without traditional credit histories

The strongest inclusion argument for fintech lending is its potential to serve 'thin-file' and 'no-file' borrowers. Informal workers, young adults, migrants, microentrepreneurs, and rural households may therefore be rejected even when they have the capacity and willingness to repay. Digital transaction data can partially substitute for missing formal histories and can lower screening costs sufficiently to make small-value lending commercially viable.

The empirical literature supports this possibility but also warns that alternative-data lending does not automatically reach the most excluded. Björkegren and Grissen (2020) demonstrate that mobile data can score borrowers with no conventional financial history, while Berg et al. (2020) show that digital footprints can improve access for otherwise unscorable consumers. Fintech inclusion therefore depends on broader digital infrastructure and on rules that prevent alternative data from becoming an opaque new barrier.

7.4.5 Risks of high interest, hidden charges, and aggressive collection

The most serious criticism of digital credit concerns consumer harm. Automated lending allows providers to issue large numbers of small loans at very low marginal cost, but it can also facilitate repeated borrowing, rapid refinancing, and aggressive collection. Because the decision process is remote and fast, borrowers may receive less explanation than in face-to-face lending.

Kenyan evidence highlights these risks. Johnen et al. (2021) report that digital credit increases access but is associated with higher default and blacklisting. Recent qualitative work on Kenya documents complaints involving high prices, deceptive marketing, data-privacy violations, and aggressive debt collection. These concerns are consistent with the broader consumer-finance framework of Garz et al. (2021), who identify high or hidden prices, over-indebtedness, post-contract exploitation, fraud, and discrimination as central risks in rapidly digitizing financial markets.

Regulatory responses therefore need to move beyond licensing alone. Effective frameworks should require standardized disclosure of total borrowing costs, responsible affordability assessment, limits on abusive contact and debt shaming, clear complaint and redress channels, lawful use of personal data, accurate credit reporting, and proportionate treatment of small late payments. Algorithmic lenders should also maintain audit trails and explainability standards so that automation does not eliminate accountability.

7.4.6 Overall assessment

Fintech lending can reduce screening and delivery costs, transform transaction data into credit information, and reach some borrowers who are invisible to conventional lenders. Yet the same characteristics that make digital lending scalable—automation, speed, remote contracting, and data intensity—can amplify consumer risk. The evidence therefore favors a model of 'responsible digital credit' rather than unrestricted expansion. Inclusion should be evaluated not only by the number of loans approved but also by repayment sustainability, price transparency, fair data use, borrower welfare, and continued access to finance after the loan cycle.

7.5 Digital Financial Inclusion

7.5.1 Benefits for women, rural residents, migrants, and informal workers

Digital finance can relax several barriers that disproportionately affect women, rural residents, migrants, and informal workers. Mobile money and digital banking reduce the importance of physical distance and allow small-value transactions at times and locations more compatible with irregular work and household responsibilities. In rural Bangladesh, Aziz and Naima (2021) show that digital finance can bridge physical-access gaps, although actual use remains constrained by connectivity, literacy, and social exclusion. Recent evidence from Bangladesh further indicates that digital financial-service adoption can

strengthen women's empowerment through greater savings autonomy, control over remittances, and access to liquidity, with the largest effects among women who have stronger digital literacy and live close to agent outlets (Noor, 2026).

Women may benefit particularly when digital channels reduce the need to negotiate with male-dominated bank branches or allow private control of accounts and transfers. Lee, Morduch, Ravindran, and Shonchoy (2022) show through field experiments in Bangladesh that training greatly increased active mobile-banking usage among both female and male migrants and sharply narrowed the adoption gap, yet men increased digital remittances far more than women. The finding demonstrates that technology and training can overcome some access barriers while underlying gender differences in income, employment, household roles, and control of resources continue to shape actual financial behavior.

For migrants, digital finance can lower the cost and risk of sending money to geographically separated families and can connect urban labor markets with rural households. Lee et al. (2021) found that introducing mobile banking to poor Bangladeshi migrants and their rural families increased remittance flows among active users, raised rural consumption, increased saving, and reduced extreme poverty. Informal workers and firms may also benefit because mobile financial services allow transactions without formal payroll systems or branch accounts. Using data from 101 emerging and developing economies, Jacolin, Keneck Massil, and Noah (2021) find that mobile financial services are associated with a smaller informal sector, consistent with channels involving improved credit access and firm productivity. These benefits, however, should not be interpreted as automatic formalization of all informal activity.

7.5.2 Importance of mobile-phone ownership

Mobile-phone ownership is a basic enabling condition for most forms of digital financial inclusion. The Global Findex 2025 makes this connection explicit by combining financial-inclusion data with globally comparable measures of mobile ownership and digital connectivity. The database shows that phone ownership is widespread, but important gaps remain among poorer adults, rural residents, and women in some countries; adults without financial accounts are also disproportionately likely to lack a mobile phone (Klapper, Singer, Starita, & Norris, 2025).

The distinction between access to a phone and personal ownership is important. Smartphone ownership matters even more as financial services migrate from USSD and basic-phone menus toward applications that require data access, larger screens, and updated operating systems. In rural Bangladesh, Matsuura (2026) finds that women's mobile-phone ownership significantly increases off-farm income by increasing the probability of off-farm employment, illustrating that personal access to digital technology can affect economic opportunities beyond finance itself. For financial inclusion policy, handset affordability, SIM registration, device security, and gender-equitable ownership therefore belong alongside bank-account targets.

7.5.3 Role of digital identification

Reliable identification is central to formal finance because regulated providers must verify customer identity, satisfy know-your-customer requirements, prevent duplicate accounts, and protect against impersonation. Digital identification can lower the cost and time required for these processes by allowing electronic verification and remote onboarding. Ghosh (2017), using household data, finds strong evidence of complementarity between Aadhaar biometric identification and basic financial accounts under the Jan-Dhan program. More recent work on India's digital public infrastructure similarly emphasizes the role of digital identity, interoperable payments, and consent-based data exchange in expanding access to banking and payments (Chopra, Sidana, & Arora, 2026).

Digital ID is not inclusionary by definition. Enrollment costs, documentation requirements, biometric failures, inaccessible registration centers, inaccurate records, or exclusion from authentication systems can prevent vulnerable people from accessing services. Privacy and surveillance risks also become more serious when identity systems are linked across payments, welfare, telecom, and credit databases. Strong digital-ID systems require legal recognition, accuracy, accessible correction mechanisms, cybersecurity, data minimization, and alternatives for people who cannot authenticate through standard channels.

7.5.4 Interoperability between banks, fintech companies, and mobile operators

Interoperability allows customers of one institution or platform to transact with customers of another without maintaining multiple separate accounts or converting repeatedly through cash. Interoperability is therefore both a technical and a market-structure issue. It

can strengthen network effects, reduce switching costs, and prevent closed platforms from fragmenting users into separate payment ecosystems.

Evidence suggests that interoperability can deepen the connection between fintech and conventional banking. Aracil, Jung, and Melguizo (2025), using approximately 70,000 observations across 70 developing countries, find that mobile money supports transition toward formal deposit and credit services when institutional conditions and banks' financial technologies are well aligned. Ahmad (2020) similarly identifies interoperability as an important dimension of mobile-money development in Africa. Brunnermeier, Limodio, and Spadavecchia (2023) find that mobile-money interoperability can lower fees while also weakening incentives for investment in network coverage, particularly in rural and poor districts. Interoperability policy must therefore combine open access and competition with incentives to preserve last-mile infrastructure.

7.5.5 Overall contribution of digital finance to inclusion

Taken together, the literature suggests that digital finance expands the frontier of financial access by lowering distance and transaction costs, connecting remittances to formal accounts, generating digital transaction histories, and enabling new delivery models for populations that conventional banking serves poorly. Khera et al. (2022) find substantial variation across emerging and developing economies but identify fintech adoption as a major contributor to the expansion of financial inclusion. The most successful systems combine technology with human and institutional infrastructure: nearby agents, usable identification, affordable devices, appropriate literacy support, consumer protection, and interoperable payment rails.

7.6 Risks and Limitations of Digital Finance

7.6.1 Digital divide and unequal access to technology

The digital divide is the most fundamental limitation of technology-led financial inclusion. If access to digital finance requires a handset, smartphone, data plan, SIM registration, electricity, and digital identification, the poorest households may face a stack of prerequisites before they can use the financial service itself. Khera et al. (2022) emphasize that closing the digital divide is necessary for continued gains in financial inclusion, while

Osabutey and Jackson (2024) identify infrastructure and resource constraints as core challenges to the mobile-money inclusion model in Africa.

This divide is multidimensional rather than purely geographic. Raheem, Addo, Shaffakat, and Lunberry (2024), studying the design of digital financial services for low-income women in Ghana, show that inclusive design must account for the surrounding social and technological environment rather than assuming that supplying an application is sufficient. This is especially important as providers move toward smartphone-only products that may exclude users who previously accessed services through basic phones.

7.6.2 Low digital literacy

Digital financial literacy combines knowledge of financial concepts with practical ability to navigate devices, interfaces, passwords, PINs, digital records, fees, and fraud warnings. Aziz and Naima (2021) identify limited financial literacy and social awareness as major reasons why rural users in Bangladesh do not fully utilize available digital financial services. Adel (2024), using a cross-country sample covering Africa, Asia, and Latin America, also finds that the relationship between digital literacy and inclusion differs by region, reinforcing the need for locally designed capability programs rather than one universal model.

Literacy programs are most effective when they teach tasks rather than abstract concepts: recognizing official channels, setting secure PINs, checking recipient details, comparing total fees, identifying scams, and using complaint channels. The experimental evidence of Lee et al. (2022) further demonstrates that practical training and enrollment support can sharply increase active mobile-banking use among poor and low-literacy users. Digital capability should therefore be treated as part of financial infrastructure, not merely an individual responsibility.

7.6.3 Network and electricity limitations

Digital finance depends on infrastructure that may be unreliable precisely where branchless services are most valuable. These problems are particularly significant in remote rural areas, where users may travel long distances to find a signal or an agent with cash. Osabutey and Jackson (2024) identify resource and infrastructure constraints as a major unresolved challenge in African mobile-money markets, while Noor (2026) shows that the

empowerment benefits of digital finance in rural Bangladesh are stronger for households closer to agent outlets.

Infrastructure failures also create financial and reputational risks. A delayed transfer, failed confirmation message, or unavailable cash-out point can be more damaging to a low-income household than to a customer with multiple accounts and liquidity buffers. For this reason, measures of digital inclusion should incorporate service reliability, agent liquidity, and outage frequency rather than counting registered accounts alone.

7.6.4 Cybercrime, fraud, and identity theft

The expansion of digital finance increases exposure to phishing, social engineering, SIM-swap fraud, account takeover, malicious apps, identity theft, false-agent schemes, unauthorized transfers, and other forms of cybercrime. Garz et al. (2021) identify fraud as one of the central consumer-protection problems accompanying the rapid expansion of digital financial markets in low- and middle-income countries. Khan, Mubarik, and Naghavi (2023) provides developing-country evidence that cybercrime can undermine financial inclusion and that cybersecurity capacity can moderate this effect.

Cybersecurity measures must be designed for the capabilities of actual users. Effective protection therefore combines secure provider systems with transaction alerts, simple authentication, rapid account freezing, agent oversight, reimbursement rules for unauthorized transactions, and accessible reporting mechanisms. Security should be understood as a prerequisite for sustainable inclusion rather than a technical issue separate from it.

7.6.5 Data privacy and unauthorized data use

Digital financial services generate extensive personal data, including identities, transaction histories, device information, locations, contacts, behavioral patterns, and sometimes social-network information. Garz et al. (2021) stress that consumer harm in digital finance can arise from imperfect information, post-contract exploitation, fraud, and discrimination. Trotta, Gallucci, Rania, Strano, and Tipaldi (2026), synthesizing 47 reviews, identify data exploitation, cybersecurity, and ethical challenges as central barriers to genuinely inclusive digital finance.

Privacy regulation is especially important where users cannot realistically negotiate lengthy digital consent forms. Meaningful protection requires purpose limitation, data minimization, explicit consent for secondary use, secure storage, limits on access by third parties, correction rights, breach notification, and meaningful penalties for misuse. Digital ID and alternative credit-scoring systems should also separate the legitimate need to verify identity from unrestricted access to a person's wider social and transactional life.

7.6.6 Exclusion of people without phones or identification

A system that makes digital channels mandatory can exclude people who lack devices, SIM cards registered in their own names, official identification, literacy, or reliable biometric authentication. This risk is particularly relevant for displaced people, migrants, women whose documents are controlled by family members, remote rural populations, and very poor households. Ghosh (2017) shows the importance of complementarity between identification and financial accounts, but that complementarity also means that exclusion from identification can propagate into exclusion from finance.

Inclusive digitization therefore requires fallback channels. Tiered or simplified KYC, assisted digital access, non-smartphone options, accessible agent networks, human grievance procedures, and carefully designed exceptions can prevent technology from becoming a new gatekeeper. Policy makers should also avoid measuring success solely through the share of government payments or accounts that have been digitized; the relevant outcome is whether intended beneficiaries can receive, control, and use the funds.

7.6.7 Need for effective fintech regulation

The rapid evolution of fintech creates a regulatory challenge because innovations can scale faster than supervisory rules and institutional capacity. Regulation must address licensing, safeguarding of customer funds, operational resilience, outsourcing, interoperability, data protection, digital credit, competition, cybersecurity, disclosure, complaint resolution, and fair treatment. Overly restrictive regulation can suppress innovation and raise entry costs, while weak regulation can produce fraud, predatory lending, data misuse, and loss of public trust.

A risk-based and activity-based approach is therefore preferable to either regulatory neglect or blanket prohibition. Providers performing similar financial functions should

meet proportionate standards even when they are legally classified as banks, fintechs, telecom operators, or technology platforms. Trotta et al. (2026) emphasize that regulatory and policy gaps are among the interconnected barriers that can prevent digital finance from producing inclusive outcomes. Osabutey and Jackson (2024) similarly argue for policies that integrate the interests of providers, regulators, and local communities rather than assuming that technology adoption alone will benefit the bottom of the pyramid.

7.6.8 Overall assessment

Digital finance has considerable potential to lower transaction costs, expand reach, connect migrants and rural households, strengthen women's financial autonomy, and integrate previously informal users into a broader financial ecosystem. Technology can reduce one barrier while introducing another: branches may become less important, but phones and networks become essential; paper identification may be replaced by digital authentication; and human discretion may be replaced by opaque automated decisions. The policy objective should therefore be inclusive digital transformation rather than digitization for its own sake. Sustainable digital financial inclusion requires reliable connectivity, affordable devices, universal and privacy-preserving identification, interoperability, digital literacy, cybersecurity, consumer protection, data governance, and adaptive regulation.

8. Banking, Finance, and Development Outcomes

The relationship between banking, finance, and economic development is one of the central themes in development economics. Financial systems influence development through several interconnected functions: mobilizing savings, screening investment projects, allocating capital, monitoring borrowers, facilitating payments, diversifying risk, and supporting technological innovation. Foundational theoretical and empirical work therefore treats finance as more than a passive response to development; a well-functioning financial system can shape the pace and pattern of structural transformation (Greenwood & Jovanovic, 1990; King & Levine, 1993a; Levine, 1997). At the same time, later evidence has qualified the proposition that more finance is always better. The developmental effect depends on the quality of intermediation, institutional conditions, the composition of credit, the stability of the system, and whether financial access translates into productive use rather than nominal account ownership or excessive indebtedness.

8.1 Finance and Economic Growth

8.1.1 Mobilization of savings for productive investment

A core function of financial institutions is to mobilize dispersed household and business savings and transform them into funding for investment. In low-income economies, individual savers often hold small, irregular balances that would be costly to channel directly to firms or long-term projects. This transformation can raise the share of resources available for capital formation while reducing the costs associated with matching individual savers and investors. Greenwood and Jovanovic (1990) formalize this mechanism by showing how financial intermediation can raise the return to capital and become increasingly valuable as economies develop.

The classic finance-growth literature emphasizes that the importance of finance lies not only in increasing aggregate saving but also in improving the way savings are used. Levine (1997) argues that financial systems mobilize savings, facilitate risk management, acquire information, monitor investment, and ease transactions, thereby influencing capital accumulation and technological innovation. Empirical evidence from King and Levine (1993b) shows that indicators of financial development are associated with subsequent growth, capital accumulation, and improvements in economic efficiency. However, Beck, Levine, and Loayza (2000) find that the strongest channel operates through total factor productivity rather than through a robust increase in private saving or physical capital accumulation. This suggests that the developmental value of mobilized savings depends critically on allocation and productivity rather than on volume alone.

8.1.2 Improved allocation of capital

Financial intermediaries can improve capital allocation by collecting information about firms, projects, technologies, and entrepreneurs. In markets characterized by information asymmetry, external investors may be unable to distinguish productive projects from poor ones. By directing scarce funds toward projects with higher expected returns, financial development can raise the average productivity of investment and accelerate structural change.

The empirical literature strongly supports this allocation channel. Beck, Levine, and Loayza (2000) find that financial intermediary development exerts a large positive effect

on total factor productivity growth, which in turn feeds into GDP growth. Rajan and Zingales (1998) provide a particularly influential identification strategy: industries that depend more heavily on external finance grow disproportionately faster in countries with more developed financial systems. For low-income countries, where retained earnings are limited and information systems are weak, this screening and allocation role can be especially important.

8.1.3 Financing technological adoption and business expansion

Long-run development requires firms to adopt new technologies, enter new markets, expand production, and experiment with innovative business models. King and Levine (1993a) develop a model in which better financial systems improve the evaluation of prospective entrepreneurs, diversify innovation risk, and raise the probability of successful technological innovation. The resulting link between finance, entrepreneurship, and growth is especially relevant to low-income economies attempting to move labor and capital from low-productivity activities into modern firms.

Aghion, Howitt, and Mayer-Foulkes (2005) extend this argument by linking financial development to technological convergence. Their model predicts that countries above a critical level of financial development are more likely to converge toward the growth rate of the technological frontier, whereas countries below that threshold may remain trapped in slower growth. In practical terms, credit for machinery, working capital, inventories, certification, digitalization, and export entry can allow small and medium-sized firms to increase scale and productivity.

8.1.4 Contribution to productivity and long-term growth

The aggregate finance-growth literature generally finds that financial development is associated with stronger long-term economic performance. King and Levine (1993b), using data for 80 countries, report strong relationships between financial development and future per-capita growth, capital accumulation, and efficiency improvements. Levine, Loayza, and Beck (2000) use instrumental-variable and dynamic-panel methods and find that the exogenous component of financial intermediary development is positively associated with economic growth. These results also emphasize that legal and accounting institutions help

explain cross-country differences in financial development, linking the finance-growth relationship to broader institutional quality.

The distinction between financial intermediation and financial-sector size is important for interpreting these findings. Beck, Degryse, and Kneer (2014) show that traditional intermediation activities are associated with higher long-run growth and lower volatility, whereas expansion of the financial sector along other dimensions does not necessarily produce comparable real-sector gains. Their results are especially relevant for low-income economies: a financial system contributes to development when it effectively channels resources to productive users, not simply when balance sheets or financial-sector employment expand.

8.1.5 Conditions under which finance may fail to promote growth

Finance can fail to promote growth when credit expands faster than the capacity of institutions to allocate and monitor it. Rousseau and Wachtel (2011) show that the finance-growth relationship weakened in more recent decades compared with earlier samples and identify financial crises and excessively rapid credit growth as plausible explanations. Weak regulation, poor credit assessment, political lending, and inadequate legal systems can redirect finance toward connected borrowers, real-estate booms, consumption, or speculative activities rather than productivity-enhancing investment.

The literature also identifies nonlinearities. Arcand, Berkes, and Panizza (2015) find evidence that the positive relationship between financial depth and growth can vanish and eventually become negative at very high levels of private-sector credit. Beck, Büyükkarabacak, Rioja, and Valev (2012) reinforce this point by decomposing private credit into enterprise and household lending. Enterprise credit is positively associated with growth and faster reductions in inequality, whereas household credit is not. Thus, the composition and use of finance matter as much as aggregate financial depth.

Macroeconomic instability can further weaken the finance-growth mechanism. In such environments, banks may prefer government securities or short-term trade finance rather than financing innovation and productive expansion. Financial development promotes growth most reliably when it is embedded in credible macroeconomic policy, effective

regulation, strong creditor and property rights, transparent accounting, competition, and institutions capable of resolving distressed loans.

8.2 Finance and Poverty Reduction

8.2.1 Direct access to savings, payments, insurance, and credit

Finance can reduce poverty directly by improving the financial tools available to poor households. Safe savings allow households to accumulate reserves, protect money from theft or social claims, and finance predictable expenses. Insurance can protect productive assets and consumption when shocks occur, while credit can finance education, health, enterprises, agriculture, housing, and emergency needs. The welfare effect of financial access therefore operates through a portfolio of services rather than through credit alone.

Experimental evidence shows that appropriately designed financial products can generate meaningful benefits. Dupas and Robinson (2013) find that access to simple savings accounts increased savings and productive investment among female market vendors in Kenya. Karlan, Osei, Osei-Akoto, and Udry (2014) show in northern Ghana that rainfall insurance induced farmers to increase agricultural investment and choose riskier but potentially more profitable production strategies, illustrating how risk protection can unlock investment even when cash constraints are not the only binding problem. These studies demonstrate why productive finance includes savings and insurance as well as loans.

8.2.2 Indirect effects through employment and economic growth

Financial development can also reduce poverty indirectly by expanding firms, creating jobs, raising wages, and accelerating aggregate economic growth. Beck, Demirgüç-Kunt, and Levine (2007) find that financial development disproportionately raises the incomes of the poorest quintile and reduces poverty. Their estimates suggest that most of the long-run effect on poor households operates through aggregate growth, while a substantial share also operates through reduced income inequality.

Country-level quasi-experiments provide complementary evidence. Burgess and Pande (2005) exploit India's rural branch-expansion policy and find that rural bank expansion significantly reduced rural poverty and increased non-agricultural output. Bruhn and Love (2014), studying the rapid opening of Banco Azteca branches in Mexico, identify an

important labor-market channel: improved access to finance increased economic activity and income, with particularly strong effects among low-income individuals and in areas with low initial bank penetration. These studies show that the poverty effects of finance can arise through local enterprise creation and employment, not only through household borrowing.

8.2.3 Household resilience against financial shocks

Poverty is dynamic: households can move into poverty when illness, crop failure, job loss, disasters, or family emergencies force them to cut consumption or sell productive assets. Financial services can reduce this vulnerability by allowing households to save before a shock, receive transfers after it, insure major risks, or borrow temporarily. Karlan, Ratan, and Zinman (2014) emphasize that weak savings technology can generate low resilience, volatile consumption, and foregone productive investments among poor households.

Mobile money provides particularly strong evidence of the risk-sharing channel. Jack and Suri (2014) find that negative shocks reduced consumption by about 7 percent among nonusers in their Kenyan sample, while consumption among mobile-money users was largely protected; users received more remittances from a wider network. Suri and Jack (2016) subsequently find that the expansion of M-PESA increased consumption and lifted an estimated 194,000 Kenyan households, or about 2 percent of households, out of poverty, with especially strong effects for female-headed households. Their results link financial access to resilience, saving behavior, and occupational change.

8.2.4 Differences between access to accounts and access to productive finance

A critical distinction in the financial-inclusion literature is between formal account ownership and effective access to finance that improves welfare or productive capacity. An account can be useful only if it is affordable, trusted, accessible, and connected to relevant saving, payment, credit, or insurance opportunities. Dupas, Karlan, Robinson, and Ubfal (2018) experimentally expanded basic bank-account access in Uganda, Malawi, and Chile. Their findings show that opening accounts, by itself, is not sufficient.

Credit access presents a similar distinction. Banerjee, Karlan, and Zinman (2015), synthesizing six randomized evaluations of microcredit, find a consistent pattern of modestly positive but not transformative average effects. Beck et al. (2012) make an

analogous point at the macro level: enterprise lending is associated with growth and inequality reduction, while household lending is not. Productive finance therefore refers to financial services that enable investment, enterprise growth, human-capital accumulation, risk management, and sustained income generation, not merely the possession of a financial account or the availability of short-term debt.

8.2.5 Distributional conditions and limits

The relationship between finance and poverty is also shaped by who gains access first. Greenwood and Jovanovic (1990) show theoretically that financial development can initially widen inequality if participation in sophisticated financial arrangements is costly and richer households enter earlier. Demirgüç-Kunt and Levine (2009), reviewing the broader literature, conclude that improvements in financial contracts, markets, and intermediaries generally expand opportunities and reduce inequality, but they emphasize important gaps regarding the distributional effects of regulation and financial-sector policy. In low-income countries, exclusion by gender, geography, informality, documentation, or digital access can therefore limit the poverty-reducing effect of financial development.

A development-oriented financial strategy should consequently focus on quality, usage, and productive opportunity rather than headline access indicators alone. Savings must be safe and liquid; payments must be inexpensive and interoperable; insurance must be trusted and appropriately designed; and credit must match the cash flows and repayment capacity of households and firms. When they are absent, financial deepening may coexist with exclusion, over-indebtedness, or limited real-sector benefits.

8.3 Finance and Income Inequality

8.3.1 Potential of inclusive finance to reduce inequality

Inclusive finance can reduce inequality by relaxing constraints that are more binding for poor households and small entrepreneurs than for wealthy individuals. When low-income households gain access to secure savings, low-cost payments, credit, insurance, and investment opportunities, they are better able to accumulate assets, smooth consumption, invest in education, start businesses, and respond to shocks without selling productive assets. Beck, Demirgüç-Kunt, and Levine (2007), using cross-country data, find that financial development disproportionately raises the incomes of the poorest quintile and is

associated with lower income inequality and lower poverty. Their decomposition suggests that finance benefits poor households through both faster aggregate growth and a more favorable distribution of income.

Theoretical models provide several mechanisms for this result. In the presence of fixed investment costs, imperfect information, and collateral requirements, talented but poor individuals may be unable to finance education or entrepreneurship. Demirgüç-Kunt and Levine (2009) summarize a broad literature in which improvements in financial contracts, intermediaries, and markets can widen opportunity by easing these wealth-based constraints. Inclusive financial infrastructure is therefore potentially equalizing when it reduces entry costs for people who lack assets, formal credit histories, or established relationships with lenders.

8.3.2 Unequal distribution of formal credit

In practice, formal credit is rarely distributed evenly. Low-income households, informal workers, farmers, and small firms often have the opposite characteristics: income is irregular, records are incomplete, transactions are small, and property may be untitled or difficult to enforce as collateral. These conditions generate a credit-allocation pattern in which borrowers with greater initial wealth receive larger and cheaper loans, while poorer borrowers depend on internal funds, informal lenders, or no credit at all.

Evidence from rural and semi-urban Thailand illustrates how financial constraints can link wealth and entrepreneurship. Paulson and Townsend (2004) find that wealthier households are more likely to start businesses, invest more in them, and face fewer financing constraints; the constraints are particularly severe in the poorer Northeast region. Aghion, Fally, and Scarpetta (2007) show across sixteen industrialized and emerging economies that financial development matters most for the entry of small firms and firms in sectors that depend heavily on external finance. Unequal access to formal credit can therefore become a mechanism through which existing asset inequality is translated into persistent differences in business ownership, investment, and income.

8.3.3 Concentration of financial benefits among wealthy households and large firms

The early stages of financial development may disproportionately benefit wealthier groups because they are better positioned to pay account fees, satisfy minimum balances, meet

documentation requirements, diversify risk, and provide collateral. Greenwood and Jovanovic (1990) formalize this idea in a model where participation in sophisticated financial intermediation is costly. During the transition from a financially primitive to a developed economy, richer households enter the financial sector earlier and obtain higher returns, causing inequality to widen before broader participation eventually becomes possible. This mechanism resembles an inverted-U path in which the distributional consequences of finance change with the stage of development.

Large firms may also capture a disproportionate share of financial benefits. They typically have audited statements, tangible collateral, longer credit histories, and the scale necessary to make lending relationships profitable. Small and young firms face higher informational and monitoring costs and may be screened out even when their projects are productive. When new finance flows predominantly to incumbents, it can raise asset values and profits without broadening access to opportunity. Recent cross-country evidence reinforces this multidimensional interpretation: greater access to finance and more efficient intermediaries are associated with lower income inequality, while deeper financial markets and institutions can increase top income shares when the gains accrue disproportionately to those already holding financial assets (Mareš & Horvath, 2026).

8.3.4 Nonlinear relationship between financial development and inequality

A growing literature rejects a purely linear relationship between financial development and inequality. Greenwood and Jovanovic (1990) provide the classic theoretical foundation for this transitional pattern. Empirical threshold analysis by Tan and Law (2012) similarly finds that the effect of financial development on income inequality depends on the stage of financial development and that a threshold level is necessary before finance consistently reduces inequality.

Recent evidence extends this argument from income to wealth inequality. A 2025 cross-country study finds that below a threshold, financial development is associated with greater wealth concentration at the top and a lower share for the bottom half of the distribution, whereas above the threshold it narrows both wealth and income inequality; entrepreneurship is identified as one transmission channel (Kim, Liu, & Lin, 2025). This result is consistent with the view that shallow systems can be captured by high-income

borrowers, while mature systems provide wider access and more competitive intermediation. Institutional quality, banking competition, financial structure, public policy, and the composition of credit can all alter the distributional effect of financial development.

8.3.5 Why financial structure and credit composition matter

The distributional impact of finance depends on what kind of finance expands. Beck, Büyükkarabacak, Rioja, and Valev (2012) show that enterprise credit is associated with faster economic growth and faster reductions in income inequality, while household credit has no comparable growth effect. The implication is that aggregate private-credit ratios can hide major differences in who receives credit and what the funds finance.

For low-income countries, the policy objective should therefore be inclusive and productive financial deepening. This calls for collateral reform, credit-information systems, low-cost payment infrastructure, competition, digital and agent banking, financial capability, and legal institutions that reduce the fixed costs of serving small clients. It also requires safeguards against predatory debt, excessive household leverage, and financial structures that privatize gains while socializing losses.

8.4 Finance, Investment, and Entrepreneurship

8.4.1 Financing business start-ups

Starting a business normally requires an initial lump sum for premises, licenses, inventory, tools, transport, marketing, and early operating losses. In low-income settings, prospective entrepreneurs often rely on household savings and family networks because banks are reluctant to lend to firms with no track record or collateral. Paulson and Townsend (2004) show that household wealth strongly influences entrepreneurship in Thailand, consistent with binding financial constraints.

Recent evidence from Cameroon quantifies this delay. Using informal-sector data and a structural occupational-choice model, Tchakounte Njoda (2024) estimates that prospective entrepreneurs may need to spend roughly seven years in subsistence work to accumulate the minimum savings required to establish a microenterprise. Aghion, Fally, and Scarpetta (2007) likewise find that financial development particularly encourages the entry of small firms and firms that depend on external finance.

Banking-sector reforms can have visible effects on entry. Kerr and Nanda (2009) study U.S. banking deregulation and find substantial growth in entrepreneurship after financing constraints were relaxed. Importantly, greater entry also brings greater exit because many new ventures fail. This is not necessarily a sign that finance was misallocated; experimentation and creative destruction require financing many uncertain ventures in order to discover a smaller number of high-growth firms.

8.4.2 Working-capital availability

Working capital finances the gap between paying for inputs and receiving revenue from customers. Small firms are especially vulnerable to working-capital shortages because they hold smaller cash buffers and face greater difficulty obtaining overdrafts or short-term bank credit. A temporary liquidity constraint can therefore reduce production even when the underlying business is profitable.

Banerjee and Duflo (2014) provide strong evidence of binding firm-level credit constraints using changes in eligibility for a directed lending program in India. This result indicates that the marginal return to capital among constrained firms can be high. It also illustrates why working-capital finance is developmentally important: productive capacity may already exist, but firms cannot operate it fully without adequate liquidity.

Working-capital management also affects performance after credit is obtained. Recent evidence for SMEs finds an inverted-U relationship between working-capital investment and profitability, with financially constrained firms facing a lower optimal level and larger losses when they deviate from it (Silva & Silva, 2026). Thus, the development challenge is not unlimited short-term credit but timely, affordable liquidity combined with sound cash-flow management.

8.4.3 Investment in equipment, technology, and expansion

Longer-term investment requires finance with maturities that match the expected return horizon of the asset. Machinery, irrigation equipment, vehicles, digital systems, energy upgrades, warehouses, processing equipment, and new production lines often require expenditures that exceed a small firm's internal cash flow. When only very short-term loans are available, firms may underinvest or use inappropriate financing structures that create repayment pressure before investments begin to generate returns.

The importance of external finance for expansion is supported by both cross-country and firm-level evidence. Rajan and Zingales (1998) show that industries that are naturally more dependent on external finance grow faster in countries with more developed financial systems, suggesting that finance enables investment that internal funds alone cannot support. Aghion et al. (2007) further find that financial development not only supports firm entry but also helps successful new firms expand after entry. In low-income economies, where many firms are small and retained earnings are limited, access to medium- and long-term finance is therefore central to moving from subsistence-scale activity toward productive enterprise growth.

8.4.4 Reduction of financing constraints

Financing constraints arise when firms cannot obtain funds for positive-return investments at reasonable terms because of collateral shortages, information asymmetry, weak credit histories, high transaction costs, or limited competition among lenders. These constraints are generally more severe for young, small, and informal firms. Aghion et al. (2007) find that finance has its strongest entry effects for small firms, while Paulson and Townsend (2004) show that wealth determines entrepreneurial participation when external finance is imperfect.

Competition among financial institutions can reduce some of these constraints. Firm-level evidence from 48 developing economies shows that stronger banking competition is associated with lower financing constraints among SMEs (Khan & Kutan, 2023). The mechanism is plausible: competition can pressure banks to search for new clients, improve service quality, reduce margins, and develop better screening technologies. Effective reduction of financing constraints therefore combines banking competition with credit bureaus, movable-collateral systems, digital transaction records, reliable contract enforcement, and suitable long-term funding instruments.

8.4.5 Role of finance in innovation

Innovation is particularly difficult to finance because its returns are uncertain, knowledge assets are often intangible, and outsiders may struggle to evaluate technical quality. Innovative firms may therefore face stronger information problems than firms financing conventional machinery or inventory. Kerr and Nanda (2015) review the financing-of-innovation literature and emphasize that banks, venture capital, internal cash flow, and

other financing structures play distinct roles depending on uncertainty, experimentation, collateral, and the stage of innovation.

Evidence from developing countries confirms that financial constraints suppress innovation. Using firm-level data from eleven African countries, Ayalew and Xianzhi (2020) find that financial constraints reduce firms' probability of undertaking innovative activity and of introducing product and process innovations, with effects varying by sector, firm size, and age. More recent African evidence finds that financially constrained and low-technology firms relying heavily on internal finance are less likely to innovate, whereas greater use of new equity, debt, bank credit, and trade credit is associated with higher innovation activity (Ayalew & Zhang, 2024). Finance therefore influences not only firm scale but also firms' capacity to upgrade technology and compete.

8.4.6 Role of finance in firm survival and post-entry growth

Finance remains important after a firm is established. If lenders ration credit because they have little information about firm quality, otherwise viable firms may fail during temporary downturns or miss opportunities to expand. Holtz-Eakin, Joulfaian, and Rosen (1994) show that liquidity constraints affect entrepreneurial survival, while Cooley and Quadrini (2001) model how financial frictions interact with firm age and growth dynamics.

Empirical evidence on post-entry performance reinforces this view. Cressy (1996) and subsequent research show that survival is closely related to initial capitalization and entrepreneur quality, while Aghion et al. (2007) find that financial development helps successful entrants expand. A large manufacturing study in China finds that financing constraints materially influence firm survival and that productive and profitable firms are better able to alleviate these constraints (Zhang, 2021). In developing economies, recent World Bank Enterprise Survey evidence also shows that financing constraints reduce firm growth, employment, productivity, and innovation, with small firms especially vulnerable when financial constraints interact with corruption or crisis conditions (Priya & Sharma, 2023).

8.4.7 Overall assessment

The finance-investment-entrepreneurship relationship is strongest when financial systems allocate funds toward firms with productive opportunities but insufficient internal

resources. Finance can enable entry, stabilize working capital, fund equipment and technology, support experimentation, and allow successful firms to survive and scale. Poor underwriting can create nonperforming loans, while very short maturities or expensive debt can weaken rather than strengthen young firms. The policy objective in low-income countries should therefore be to broaden access while improving the fit between financial products and enterprise cash flows.

This requires an ecosystem rather than a single credit program: competitive banks and nonbank lenders, credit guarantees where justified, movable-collateral registries, trade credit, leasing, equity and venture finance, reliable credit information, digital payments that create verifiable transaction histories, efficient insolvency systems, and policies that support transparent accounting by smaller firms. When these institutions reduce information and enforcement costs, finance can become a mechanism for entrepreneurial mobility rather than a privilege attached to initial wealth.

8.5 Employment and Enterprise Development

8.5.1 Financing labor-intensive sectors

The employment impact of finance is likely to be strongest in sectors where expansion requires working capital and where production is relatively labor intensive. Firms in manufacturing, agro-processing, construction, trade, transport, and many local services often need external finance to purchase inventories, inputs, equipment, and intermediate goods before revenues are realized. When such firms face binding credit constraints, even profitable opportunities may not translate into additional hiring. Brixiová, Kangoye, and Yogo (2020), using firm-level data from 42 African countries, find that SMEs with formal financing create more jobs than otherwise comparable firms, and that the employment effect is stronger in manufacturing than in services. Larger loans, longer maturities, and lower collateral burdens are also associated with stronger employment growth.

Ayyagari, Juarros, Martinez Peria, and Singh (2021) provide broader evidence from more than 780,000 firms in 22 developing countries. This evidence is important for low-income economies because employment is frequently concentrated in small enterprises, while these firms also face the largest financing obstacles. However, sectoral targeting should not become rigid credit allocation: lending remains most effective when financial institutions

can assess productivity, repayment capacity, and market demand rather than merely classifying sectors as employment intensive.

8.5.2 Growth of SMEs and microenterprises

SMEs and microenterprises constitute a large share of firms and employment in developing economies, yet their reliance on internal funds and informal finance can prevent them from reaching efficient scale. Beck and Demirgüç-Kunt (2006) review cross-country evidence showing that small firms face disproportionately severe financing constraints and finance smaller shares of investment and working capital from formal sources. Improved financial and legal institutions can therefore level the playing field between small and large firms rather than simply subsidize firms because they are small.

Experimental evidence illustrates the productive potential of relaxing capital constraints while also showing substantial heterogeneity. De Mel, McKenzie, and Woodruff (2008) randomly provided capital grants to Sri Lankan microenterprises and found very high average returns to additional capital, although returns varied sharply across owners. Dupas and Robinson (2013) show that access to simple savings accounts enabled female market vendors in Kenya to save more and increase productive investment. These results indicate that enterprise finance need not take the form of debt alone: secure savings can help microentrepreneurs self-finance working capital and investment without rigid repayment obligations.

The employment response of microenterprises is less automatic than their investment response. De Mel, McKenzie, and Woodruff (2019) experimentally subsidized hiring by Sri Lankan microenterprises. Firms increased employment while the subsidy was in place and treated firms were more likely to survive, but there was no sustained average employment effect after the subsidy ended. Finance can support viable growth, but additional hiring will persist only when firms have sufficient productivity, demand, managerial capacity, and market access.

8.5.3 Formalization of informal businesses

Access to finance can contribute to business formalization because formal accounts, payment records, credit relationships, and registration can reinforce one another. Yet the

literature shows that reducing registration costs alone rarely induces most subsistence firms to formalize. McKenzie (2014) concludes from a broad review that many informal microenterprises perceive limited private benefits from registration, so simpler entry procedures by themselves usually generate only modest increases in formalization.

The relationship becomes stronger when formal status provides concrete financial benefits. Campos, Goldstein, and McKenzie (2023) conducted a randomized experiment among more than 3,000 informal firms in Malawi. When registration assistance was combined with a bank information session and the opportunity to open a business account, firms increased their use of formal financial services, sales rose by about 20 percent, and profits by about 15 percent. The evidence implies that formalization is more attractive when it is connected to useful services rather than imposed primarily as an administrative or tax obligation.

8.5.4 Direct and indirect employment creation

Finance can create employment directly when firms use loans, savings, leasing, or equity to expand production and hire workers. The distinction matters because the labor-market impact of financial development can extend beyond firms that actually borrow. Bruhn and Love (2014), exploiting the rapid entry of Banco Azteca in Mexico, find that expanded financial access increased economic activity and income among low-income households and identify labor-market activity as an important channel. Such general-equilibrium effects are particularly relevant where large numbers of households depend on local service, retail, and informal labor markets.

At the firm level, local financial development can also influence survival and investment. Evidence from Moroccan manufacturing shows that greater local bank availability is associated with faster growth among small and medium firms with growth opportunities, a lower probability of exit, and a higher probability of investment (Fafchamps & Schündeln, 2013). Its strongest effects arise when finance complements demand, infrastructure, skills, market access, and a business environment in which productive firms can enter, expand, and survive.

8.6 Household Welfare and Resilience

8.6.1 Consumption smoothing

Low-income households often face volatile earnings while food, rent, education, healthcare, and social obligations require regular expenditure. Savings allow households to carry resources from good periods into bad periods; credit provides temporary liquidity; insurance transfers resources across states of the world; and remittances connect households to geographically diversified income sources. The value of these services is particularly high where formal public insurance is weak.

Mobile money provides strong evidence for this risk-sharing channel. Jack and Suri (2014) find that negative shocks reduced consumption by approximately 7 percent among Kenyan households that did not use M-PESA, whereas user households were able to maintain consumption. Suri and Jack (2016) later find that expansion of mobile money increased long-run consumption and reduced extreme poverty, with especially strong effects among female-headed households. Finance can therefore raise welfare not only by increasing average income, but also by making consumption less sensitive to temporary shocks.

8.6.2 Emergency savings

Emergency savings provide a first line of defense against illness, temporary unemployment, crop loss, funerals, school payments, and other unplanned expenditures. In practice, poor households frequently save through cash, livestock, rotating groups, or claims on relatives because formal accounts are costly or inaccessible. Prina (2015) randomly offered zero-fee local savings accounts to poor female household heads in Nepal and found exceptionally high take-up and usage. Treated households reported greater ability to cope with shocks and reallocated expenditure toward education and food, even though effects on aggregate assets and expenditure were imprecisely estimated.

Formal savings may also reinforce informal insurance networks rather than replace them. Flory (2018), using a rural Malawi field experiment, finds that expanded savings adoption increased agricultural investment and crop income among adopters and increased private transfers to other households during the hungry season. Non-savers, including some of the worst-off households, benefited through increased transfers, food consumption, and health indicators. Thus, household resilience can depend on interactions between formal finance and community risk-sharing institutions.

8.6.3 Health and education expenditure

Health and education are common reasons for accumulating savings or seeking credit because expenditures are often lumpy relative to household cash flow. Prina's (2015) Nepal experiment provides direct evidence that accessible savings accounts increased education expenditure while improving households' reported ability to deal with shocks. More recently, Habyarimana and Jack (2024) find that encouraging Kenyan parents of final-year primary-school students to open mobile-phone-based bank accounts raised the probability of transition to secondary school by 5-6 percentage points. The effect was partly explained by increased saving and borrowing that helped families accumulate resources for school expenses.

Health finance requires more caution. Islam and Maitra (2012), using rural Bangladesh panel data, find that households commonly use livestock sales to protect consumption after health shocks; access to microcredit reduced the need to sell these productive assets. This result highlights a welfare channel that simple expenditure measures can miss: finance may protect future income by preventing distress liquidation. The appropriate policy mix therefore includes precautionary saving and insurance where possible, with emergency credit acting as a complementary rather than exclusive protection mechanism.

8.6.4 Protection against income and climate-related shocks

Agricultural and climate risks are particularly difficult for poor households because shocks may affect many people in the same community simultaneously, weakening local informal insurance. Karlan, Osei, Osei-Akoto, and Udry (2014) show in northern Ghana that rainfall-index insurance caused farmers to increase agricultural investment and adopt riskier but potentially more profitable production choices. Their experiments suggest that uninsured risk, rather than a simple shortage of cash, was the binding constraint for many farmers.

Financial protection must therefore be assessed both *ex ante* and *ex post*. *Ex ante*, reliable insurance can encourage productive risk-taking and prevent households from choosing excessively conservative technologies. Islam and Maitra (2012) show the asset-protection role of microcredit after health shocks, while Jack and Suri (2014) demonstrate the consumption-smoothing role of low-cost remittance transfers. A resilient household

financial system is consequently a portfolio of instruments rather than a single loan product.

8.6.5 Use of insurance and remittance services

Insurance and remittances address risks that conventional savings and credit may not fully manage. At the macro-household interface, Combes and Ebeke (2011) find across developing countries that remittances reduce household consumption instability and act as insurance against natural disasters, agricultural shocks, financial crises, and exchange-rate instability. The stabilizing effect is stronger in less financially developed countries, consistent with remittances substituting partly for missing formal insurance.

The development value of remittances rises further when payment systems reduce transfer costs and recipients can store part of the funds safely. Mobile money can enlarge the network from which households receive support and speed transfers during emergencies (Jack & Suri, 2014). Insurance products must be trusted, accurately priced, and designed to minimize basis risk, while remittance-receiving households still need opportunities to save, invest, and diversify their own sources of income.

8.7 Gender and Financial Empowerment

8.7.1 Women's access to accounts, savings, and credit

Women in low-income countries often face lower account ownership and lower usage of formal financial services because they own fewer collateralizable assets, have lower and more irregular earnings, face documentation and mobility barriers, and may have less experience with formal institutions. Expanding access can therefore reduce a structural constraint on women's economic participation. Yet account ownership is only the first step: the account must be affordable, personally controlled, usable, and connected to income, savings, credit, or payment opportunities.

Experimental savings evidence illustrates the importance of product design and control. Ashraf, Karlan, and Yin (2010) find that a commitment savings product in the Philippines increased women's household decision-making power, particularly among women who began with below-median decision-making authority. In Kenya, Dupas and Robinson (2013) find that female market vendors offered savings accounts increased savings and productive investment. Galdo (2025), using a randomized allocation of individual and joint

savings accounts among rural Ethiopian cash-crop households, reports that women in the joint-account treatment gained autonomy and control over savings resources and broader financial empowerment. These studies show that savings access can affect both economic resources and intra-household bargaining.

8.7.2 Control over income and financial decisions

Financial empowerment depends on who controls income, not simply who is formally named on an account. Field, Pande, Rigol, Schaner, and Troyer Moore (2021) provide particularly strong evidence from rural India. Women who received their workfare wages directly into their own bank accounts and were trained to use those accounts increased both public- and private-sector labor supply relative to women who were only offered accounts. Three years later, the intervention also shifted women's own work-related norms and husbands' perceptions of the social costs of female employment.

The implication is that account access without control may have limited empowerment effects. Ashraf (2009) likewise shows experimentally in the Philippines that spousal observability and control shape financial choices. For development policy, women's financial inclusion should therefore be evaluated using indicators of usage, control over balances and income, decision-making authority, and freedom to transact rather than account ownership alone.

8.7.3 Financing women-owned enterprises

Women-owned enterprises face many of the general financing problems of micro and small firms, but gender can interact with sectoral segregation, household obligations, asset ownership, and social norms. De Mel, McKenzie, and Woodruff (2009) find large gender differences in returns to experimentally provided capital among Sri Lankan microenterprises: male-owned firms generated large profit increases, whereas average returns for female-owned firms were much lower. The authors show that this difference cannot be explained solely by ability or risk preferences and provide evidence consistent with constraints arising from industry choice and intra-household allocation.

This result should not be interpreted as evidence that women do not benefit from finance. Instead, it shows why the same capital intervention can produce different outcomes when women face different markets and household claims. Shahriar, Chase, and Shepherd

(2025), in a field experiment on low-income women, find that access to formal banking increased new-venture initiation through improved money skills, opportunity recognition, and entrepreneurial self-efficacy; however, the effects were weaker where restrictive gender norms were stronger. Finance for women-owned enterprises is therefore most effective when combined with access to markets, business capabilities, childcare or time-saving support where relevant, and legal and social conditions that permit women to control business resources.

8.7.4 Social and institutional barriers

Gender gaps in finance reflect both institutional rules and social structure. Women may lack legally registered property, formal identification, independent phone ownership, financial records, collateral, mobility, or permission to visit agents and branches. They may also concentrate in smaller, lower-return sectors because of occupational norms, household care responsibilities, or constraints on travel and market interaction. These barriers mean that a formally gender-neutral financial product can still produce unequal outcomes.

The experimental literature also warns against assuming that financial interventions automatically generate empowerment. Banerjee, Karlan, and Zinman (2015), synthesizing six randomized evaluations of microcredit, find modest and heterogeneous average effects rather than universal transformation, including limited evidence of broad empowerment impacts from standard microcredit. Similarly, de Mel et al. (2009) demonstrate that capital can be reallocated within households or constrained by the sectors in which women operate. Effective gender-responsive finance therefore requires attention to product design, property and inheritance rights, identification, digital access, financial capability, market structure, and social norms.

8.7.5 Gender impacts of mobile money and digital finance

Digital finance can reduce some gender barriers by lowering travel requirements, allowing remote transactions, and giving women a more private channel for receiving income and transfers. The long-run Kenyan evidence is notable: Suri and Jack (2016) find that the expansion of M-PESA had stronger poverty effects for female-headed households and contributed to occupational shifts among women from agriculture into business. Digital payments can therefore affect empowerment through both resilience and labor-market allocation.

However, digital finance does not erase underlying gender inequalities. Lee, Morduch, Ravindran, and Shonchoy (2022) conducted field experiments with poor migrants and rural families in Bangladesh. Training and enrollment assistance increased active mobile-banking use by 51 percentage points for female migrants and 46 percentage points for male migrants, substantially narrowing the adoption gap. Gender-sensitive digital inclusion therefore depends on personal phone ownership, literacy, agent accessibility, privacy, control over income, and the wider economic roles available to women.

8.7.6 Overall assessment

The literature indicates that finance can contribute to women's empowerment through several mutually reinforcing mechanisms: independent savings, greater control over earnings, improved ability to absorb shocks, financing of enterprises, and access to digital payment networks. The strongest effects occur when women can actually control and use the financial resource. Field et al. (2021), Ashraf et al. (2010), and Galdo (2025) show that financial design can change decision-making and autonomy, while Shahriar et al. (2025) and Suri and Jack (2016) demonstrate links to entrepreneurship and occupational change.

At the same time, finance is not sufficient to overcome gender inequality by itself. A comprehensive empowerment strategy should therefore combine accessible accounts, savings, payments, appropriate credit, and digital finance with property rights, identification, phone ownership, financial and digital capability, market access, and policies that reduce constraints on women's time and mobility. This perspective treats financial inclusion as a means of expanding women's effective economic agency rather than as an end measured only by the number of accounts opened.

9. Cross-Cutting and Emerging Issues

Several emerging issues cut across the conventional boundaries of banking, financial inclusion, regulation, and development. At the same time, Islamic banking and other alternative financial models are becoming increasingly important in countries where religious preferences, ethical concerns, and the structure of local financial markets influence demand for formal financial services. Both topics illustrate a broader lesson for low-income countries: financial development must respond to local risks and preferences rather than merely replicate the institutional models of high-income economies.

9.1 Climate Change and Green Finance

9.1.1 Climate vulnerability of low-income countries

Low-income countries are disproportionately exposed to the economic consequences of climate-related hazards because livelihoods depend heavily on climate-sensitive sectors, infrastructure is less resilient, fiscal buffers are limited, and insurance coverage is shallow. Formetta and Feyen (2019), using a global spatial analysis of climate-related hazards between 1980 and 2016, find a clear negative relationship between wealth and both human and economic vulnerability, with the strongest relationship at low income levels. Climate change can therefore amplify existing development constraints through agricultural losses, damaged infrastructure, displacement, health shocks, fiscal stress, and deterioration in borrower repayment capacity.

The financing problem is compounded by the mismatch between adaptation needs and available capital. Nor and Mohamed (2024) document a large and persistent climate-finance gap in least developed countries and emphasize that funding flows are not only inadequate but also unpredictable. Climate vulnerability thus becomes a financial-development issue: countries with the least fiscal and financial depth often face the greatest need for long-term adaptation finance.

9.1.2 Financing climate-resilient agriculture and infrastructure

Agriculture is a central transmission channel from climate risk to household welfare in low-income economies. Huang and Wang (2014) review financing for sustainable agriculture under climate change and conclude that agricultural adaptation and mitigation remain substantially underinvested in developing countries. They emphasize the importance of integrating climate objectives into mainstream agricultural development rather than treating climate finance as a separate project category.

Climate-resilient agricultural finance may include loans for irrigation, water harvesting, stress-tolerant seeds, efficient machinery, renewable-energy systems, soil and land management, storage, cold chains, and diversification. It can also use blended finance, guarantees, concessional credit, and insurance to reduce risks that commercial lenders are unwilling to absorb alone. Roads, bridges, drainage, schools, health facilities, energy systems, and urban infrastructure must increasingly be designed against future rather than

historical climate conditions. Financing instruments should therefore reward life-cycle resilience, not simply the lowest initial construction cost.

Risk-transfer products can complement investment finance. Adeyinka et al. (2022) show that climate index-based agricultural insurance has substantial potential but that research and deployment are highly uneven across climate- and food-insecure countries. Finance for resilience is consequently most effective when credit, savings, insurance, and infrastructure investment are designed as a coordinated package.

9.1.3 Green bonds and sustainable banking

Green bonds are debt securities whose proceeds are earmarked for environmentally beneficial projects such as renewable energy, energy efficiency, clean transport, resilient water systems, and climate adaptation. Banga (2019) identifies green bonds as a potential source of climate finance for developing countries because they can connect institutional investors with long-term environmental projects. Their development can also help create project pipelines, disclosure practices, and domestic capital-market capacity. However, low-income countries face important constraints, including small capital markets, high issuance costs, weak credit ratings, limited project preparation, currency risk, and insufficient volumes of bankable green assets.

The concept of sustainable or green banking is broader than green bonds. Banks can encourage cleaner technologies through preferential green lending, exclude highly damaging activities, require environmental due diligence, and develop green deposits or sustainability-linked products. Recent evidence from Bangladesh shows that green-banking practices can interact with conventional financial-risk management and sustainable bank performance, suggesting that environmental policy need not be separated from core banking strategy (Azad et al., 2026). The critical policy challenge is to distinguish genuine green finance from "greenwashing" through credible taxonomies, use-of-proceeds rules, external review, and transparent reporting.

9.1.4 Climate-risk assessment by financial institutions

Climate change creates both physical risks and transition risks for financial institutions. Physical risk arises from floods, droughts, storms, heatwaves, wildfires, and chronic environmental change that damage assets, interrupt production, and reduce borrowers'

income. Both forms of risk can affect credit losses, collateral values, insurance claims, market prices, liquidity, and operational continuity.

Banks and supervisors are increasingly using scenario analysis and climate stress testing to assess these exposures. Reinders, Schoenmaker, and van Dijk (2025) classify climate-risk stress tests across macro-financial, micro-financial, disaster-risk, and other approaches. These limitations are especially serious in low-income countries, where borrower data, hazard maps, property records, and long historical time series are often incomplete. A practical approach is therefore progressive: banks can begin by mapping sectoral and geographic exposures, identifying climate-sensitive collateral, conducting simple scenarios, and improving data before moving toward highly sophisticated models.

Climate-risk assessment should influence lending without creating indiscriminate exclusion from finance. If banks simply withdraw from agriculture, coastal regions, or other vulnerable sectors, they may increase vulnerability by depriving households and firms of the capital needed to adapt. The objective should be risk-sensitive finance: pricing and managing risk while offering incentives for resilient investment, insurance, diversification, and adaptation.

9.1.5 Financial protection against natural disasters

Natural disasters create sudden financing needs for households, businesses, banks, and governments. Financial protection therefore seeks to arrange resources before disasters occur through emergency savings, insurance, contingent credit, catastrophe reserves, risk pools, and parametric products. Linnerooth-Bayer, Mechler, and Hochrainer-Stigler (2011) emphasize that insurance and other risk-financing instruments can reduce economic insecurity in developing countries, but coverage and affordability remain major constraints.

At the household and farm level, disaster insurance can protect consumption and productive assets. Surminski and Oramas-Dorta (2014), reviewing 27 flood-insurance schemes in low- and middle-income countries, stress that insurance is most valuable when it is linked to risk reduction rather than treated merely as compensation after loss. Premium subsidies or public support may be justified for vulnerable groups, but poorly designed subsidies can weaken incentives for adaptation. A layered strategy is therefore preferable:

households retain frequent small risks through savings, transfer larger risks through insurance, and rely on public or international mechanisms for rare catastrophic events.

9.1.6 Overall assessment

Green finance can support adaptation, resilience, and lower-carbon development, but the financing challenge in low-income countries is not solved by creating a new label for existing lending. Effective climate finance requires investible projects, technical capacity, credible standards, long-term funding, risk-sharing arrangements, transparent disclosure, and coordination between governments, banks, capital markets, insurers, and development-finance institutions. Climate-risk management should strengthen the resilience of vulnerable borrowers, not simply ration them out of the financial system.

9.2 Islamic Banking and Alternative Financial Models

9.2.1 Principles of Islamic finance

Islamic finance is based on commercial and ethical principles derived from Shariah. A defining feature is the prohibition of *riba*, generally understood in modern banking as predetermined interest on lending. Transactions are expected to be connected to identifiable assets or economic activity, and contractual rights and obligations should be clearly specified. Nikonova, Kokh, and Safina (2015) describe the major Islamic financial instruments as arrangements based on identifiable underlying transactions, transparent pricing, and predetermined rules for sharing profit and loss.

The theoretical distinction from conventional banking is therefore broader than the absence of interest. Islamic finance emphasizes asset-backing, contractual fairness, risk sharing, and restrictions on purely speculative transactions. Beck, Demirgüç-Kunt, and Merrouche (2013), comparing Islamic and conventional banks across 22 countries, find relatively few differences in broad business orientation, although Islamic banks were better capitalized, had higher asset quality, and were less likely to disintermediate during crises. This evidence supports a careful distinction between Islamic financial principles and the actual product mix used by modern Islamic banks.

9.2.2 Profit-and-loss-sharing arrangements

Profit-and-loss sharing (PLS) is commonly associated with *mudarabah* and *musharakah*. Under *mudarabah*, one party supplies capital and another provides entrepreneurial effort or

management; profits are shared according to an agreed ratio, while financial loss is normally borne by the capital provider unless negligence or misconduct occurs. Under musharakah, partners contribute capital and share profits and losses according to agreed and legally permissible arrangements. In principle, these contracts align financiers more closely with enterprise performance than fixed-interest debt.

In practice, PLS financing faces substantial information and governance problems. Sapuan (2016) explains that asymmetric information, adverse selection, and moral hazard have reduced the relative use of mudarabah compared with debt-like Islamic instruments. Warninda, Ekaputra, and Rokhim (2019), using data from 63 Islamic banks across the Middle East, South Asia, and Southeast Asia, show that mudarabah and musharakah have distinct risk characteristics and that their relationship with credit risk can be nonlinear. These findings help explain why modern Islamic banks often prefer contracts whose cash flows are more predictable even though PLS occupies a central place in the theoretical literature.

9.2.3 Shariah-compliant savings and financing products

Islamic banks offer a range of savings, financing, and investment products. Financing-side products commonly include murabaha (cost-plus sale), ijara (leasing), musharakah (partnership), mudarabah (trust-based profit sharing), salam (advance purchase, often relevant to agriculture), and istisna (manufacturing or construction finance). Islamic capital markets also use sukuk, which structure investor claims around assets, usufruct, projects, or other Shariah-compliant arrangements rather than conventional interest-bearing bonds.

The composition of products matters for development outcomes. Murabaha and ijara can be relatively straightforward tools for financing working capital, machinery, vehicles, housing, and equipment, while salam can be adapted to seasonal agricultural needs. As a result, Islamic banks face a similar challenge to conventional banks: products must be commercially sustainable while matching the cash flows and risks of households and firms. The distinctive legal form does not remove credit risk, liquidity risk, operational risk, or the need for responsible consumer protection.

9.2.4 Potential contribution to financial inclusion

Islamic finance can contribute to financial inclusion when religious preferences are a genuine barrier to conventional banking. Demirgüç-Kunt, Klapper, and Randall (2014), using data from more than 65,000 adults across 64 economies, find that Muslims were less likely than non-Muslims to own formal accounts or save formally after controlling for individual and country characteristics. In several surveyed Middle Eastern and North African countries, actual use of Shariah-compliant products was low, but a sizeable group expressed a preference for such products even at higher cost. This suggests a latent demand that appropriately designed Islamic banking could serve.

Zulhibri (2016) similarly argues that Islamic finance can complement conventional financial-inclusion policy, particularly where religious requirements interact with cost, distance, documentation, and trust. Shariah-compliant SME finance, agricultural contracts, Islamic microfinance, and social-finance institutions such as zakat, waqf, sadaqah, and qard al-hasan can potentially reach households that are excluded from conventional credit. Yet the available evidence does not support an assumption that the presence of Islamic banks automatically produces high inclusion. Outreach also depends on branch and digital infrastructure, pricing, product simplicity, consumer awareness, and the capacity to serve small clients profitably.

Islamic banking may also appeal to customers for ethical rather than strictly religious reasons because of restrictions on certain activities and the emphasis on real economic transactions. However, policymakers should avoid presenting Islamic finance as a substitute for a competitive and well-regulated financial system. Its inclusion potential is strongest when consumers can choose between credible Shariah-compliant and conventional products under comparable standards of safety, transparency, and consumer protection.

9.2.5 Regulatory and standardization challenges

Islamic banking creates additional regulatory complexity because institutions must satisfy both conventional prudential requirements and Shariah-compliance rules. Fatmawati, Ariffin, Zainal Abidin, and Osman (2022), comparing Shariah-governance arrangements across 11 countries, identify substantial differences in regulatory approaches and

institutional practice. Such variation can increase legal uncertainty and compliance costs, especially for cross-border transactions.

Standardization does not mean eliminating legitimate jurisprudential diversity, but markets require sufficient consistency for contracts to be understood, compared, audited, and enforced. Hassan, Karbhari, and Ahmed (2021) show how Malaysia's centralized regulatory model uses central-bank religious governance to promote standardization. In Bangladesh, Alam (2022) identifies decentralized and heterogeneous Shariah-governance practices and proposes a centralized framework under the central bank to improve consistency, external review, and public confidence. These findings are directly relevant to low-income countries seeking to expand Islamic finance without creating parallel and weakly supervised markets.

Prudential regulation also requires adaptation. Bitar, Ben Naceur, Ayadi, and Walker (2021) find that compliance with Basel Core Principles is associated with stronger stability in conventional banks and has a positive, though less pronounced, effect for Islamic banks. Their findings support the development of Islamic-specific prudential standards such as those issued by the Islamic Financial Services Board alongside general banking supervision.

9.3 Remittances and Development Finance

9.3.1 Importance of domestic and international remittances

Remittances are private transfers sent by migrants or other household members to relatives and communities in their places of origin. International remittances connect labor markets across countries, while domestic remittances commonly link urban workers with rural households. In low-income economies these flows can be important because they reach households directly and often continue when other private capital flows become volatile. Aggarwal, Demirgüç-Kunt, and Martínez Pería (2011), using data for 109 developing countries, find a positive and robust association between remittance inflows and both bank deposits and credit. Remittances can therefore increase the resources intermediated by the domestic financial system when recipients deposit funds or establish relationships with regulated providers.

Their macroeconomic role is particularly important where credit markets are underdeveloped. Giuliano and Ruiz-Arranz (2009) find that remittances can promote growth in countries with less-developed financial systems by helping households and entrepreneurs overcome liquidity constraints. Combes and Ebeke (2011) show across developing countries that remittance inflows reduce household consumption instability and dampen the effects of natural disasters, agricultural shocks, systemic financial crises, and exchange-rate instability. This stabilizing role is strongest where domestic financial development is weak, which makes remittances particularly relevant to low-income-country resilience.

9.3.2 Cost of remittance transfers

The development value of remittances depends partly on how much of each transfer actually reaches the recipient. Transfer prices include explicit fees and the margin embedded in the exchange rate, while recipients may also bear travel and cash-out costs. The World Bank Remittance Prices Worldwide database reported that the global average cost of sending remittances was 6.36 percent in its 2025 data, still more than twice the Sustainable Development Goal target of 3 percent. Competition, transparent exchange-rate disclosure, interoperable payment systems, and digital delivery can reduce these costs, while exclusivity agreements, weak payment infrastructure, limited correspondent-banking relationships, and stringent compliance costs can keep prices high (World Bank, 2025).

Lower prices have both distributional and macroeconomic benefits. However, cost comparisons must account for reliability, access to cash-out points, consumer protection, and foreign-exchange spreads rather than focusing only on the headline transaction fee. Digital channels are therefore most beneficial where regulation permits low-cost providers to compete while maintaining safeguards against fraud, money laundering, and loss of customer funds.

9.3.3 Role of banks, mobile money, and fintech platforms

Banks have traditionally played a central role in international remittances because they provide foreign-exchange conversion, correspondent banking, account-based transfers, and regulatory compliance. Money-transfer operators, mobile-money systems, and fintech platforms have broadened the market by allowing recipients to receive transfers through

agents or digital wallets and by automating customer onboarding and settlement. This diversification is especially important where rural branch networks are sparse.

Evidence from rural Uganda shows how mobile money can reduce the distance and transaction costs associated with financial transfers. Munyegera and Matsumoto (2018) find that mobile-money use increases the likelihood and amount of saving, borrowing, and remittance receipt, with proximity to agents playing a central role. Digital remittance channels can also become an entry point into other financial services: when remittance income is received into a wallet or account, a verifiable transaction history can support saving, bill payment, and potentially credit assessment. Yet digitization does not eliminate physical infrastructure requirements; recipients still need reliable agents, liquidity, networks, electricity, and accessible identification procedures.

9.3.4 Use of remittances for consumption, savings, and investment

The common claim that remittances are “mostly consumed” can be misleading because consumption, human capital, housing, savings, and enterprise investment are all potential welfare-enhancing uses. Adams and Cuecuecha (2010), using nationally representative data from Guatemala, find that households receiving domestic or international remittances spend more at the margin on education and housing than comparable nonrecipient households. This suggests that remittances can relax constraints on long-term household investment even when a substantial share is used for current living expenses.

Quasi-experimental evidence from the Philippines provides a stronger causal link between remittance shocks and investment. Yang (2008) exploits exchange-rate shocks experienced by overseas Filipino workers and finds that positive migrant-income shocks increased remittances, schooling and education expenditure, reduced child labor, and increased entrepreneurship in origin households. At the macro level, Giuliano and Ruiz-Arranz (2009) similarly identify an investment channel through which remittances can compensate for weak domestic credit markets. These findings support a broad interpretation of productive use that includes human capital and housing as well as business formation.

Remittances also serve a precautionary function during crises. Combes, Ebeke, Etoundi, and Yogo (2014) find that remittance inflows dampen the effect of food-price shocks on household consumption in vulnerable developing countries, with low-income economies

and Sub-Saharan Africa among the most exposed. The development objective is to expand attractive savings and investment opportunities while preserving recipient choice.

9.3.5 Policies for directing remittances toward productive activities

Governments often seek to increase the share of remittances used for enterprise finance, housing, infrastructure, or other productive activities. First, cheaper and more formal remittance channels can bring recipients into contact with banks, cooperatives, mobile-money providers, and fintech firms. Second, appropriately designed savings products can help recipients transform frequent transfers into larger balances. Third, credit products can use stable remittance histories as supplementary information about household cash flow, subject to responsible-lending standards. Aggarwal et al. (2011) show that remittances are associated with higher deposits and credit, indicating that the connection between remittance receipt and financial intermediation can develop naturally when formal services are accessible.

Fourth, diaspora investment instruments and remittance-linked products can mobilize long-term funding, but they require credible institutions, transparent project selection, and protection of investor funds. Policies should avoid assuming that every recipient should become an entrepreneur. The evidence from Yang (2008) and Adams and Cuecuecha (2010) shows that education and housing can be legitimate long-term investments, while Combes and Ebeke (2011) demonstrates the insurance value of maintaining liquidity. Productive-remittance policy should therefore increase the menu of secure financial options rather than restrict household use of transfers.

9.4 Financial Crises and External Shocks

9.4.1 Effects of global financial instability

Low-income countries are integrated into the global economy through trade, remittances, aid, commodity markets, foreign investment, bank funding, and exchange rates. Transmission occurs through weaker export demand, lower commodity prices, volatile capital flows, reduced external financing, and pressure on reserves and exchange rates. Raddatz (2007) finds that external shocks explain only part of the unusually high output volatility of low-income countries, emphasizing that domestic conditions remain important. Nevertheless, the absolute impact of external shocks can be significant relative to the historically low growth rates and limited policy buffers of these economies.

Dabla-Norris and Bal Gündüz (2014) develop a vulnerability index for low-income countries and show that the likelihood that an external shock becomes a growth crisis depends on policy, structural, and institutional conditions. Their analysis explains low-income-country experiences during the global financial crisis and underscores the importance of pre-crisis buffers. The central lesson is that the same external shock can produce very different outcomes depending on reserve adequacy, fiscal space, financial soundness, economic diversification, and institutional capacity.

9.4.2 Food, fuel, health, and inflation shocks

Food and fuel price shocks are particularly damaging in low-income countries because necessities occupy a large share of household budgets and many countries rely heavily on imported food, fuel, fertilizer, or transport inputs. Combes et al. (2014) find that low-income countries and Sub-Saharan Africa are especially vulnerable to food-price shocks and that remittances and foreign aid can mitigate consumption instability. Evidence from rural Bangladesh similarly shows that the 2007-2009 food-price and income shocks worsened food insecurity, with immediate effects concentrated among poorer households.

Fuel shocks operate both directly through household energy spending and indirectly through transport, production, and food prices. Kpodar and Liu (2022), using data covering 190 countries, find that fuel-price shocks generate broader and more persistent inflation effects in developing economies than in advanced economies. Temporary and well-targeted social assistance, public transport support, or cash transfers can therefore be more efficient than generalized price controls, while monetary and fiscal responses need to account for second-round inflation effects.

Health shocks can combine household-level income losses with economy-wide disruptions. Demirgüç-Kunt, Pedraza, and Ruiz-Ortega (2021) find that liquidity support, borrower-assistance programs, and monetary easing moderated the adverse impact of the pandemic on banks, although effects varied by institution and country. Feyen, Alonso Gispert, Kliatskova, and Mare (2021) document the extensive use of borrower relief, liquidity support, prudential flexibility, and other financial-sector policies in emerging and developing economies. The experience illustrates the importance of having crisis instruments designed before shocks occur.

9.4.3 Currency depreciation and foreign-exchange shortages

Currency depreciation affects the financial system through inflation, debt service, foreign-currency liquidity, and balance-sheet channels. Duttagupta and Cashin (2011) identify highly dollarized deposits combined with nominal depreciation or low liquidity as one of the conditions associated with banking crises in developing and emerging economies. These vulnerabilities are especially important where confidence in domestic currency is weak and foreign-currency deposits are common.

Foreign-exchange shortages can also restrict the ability of firms to import fuel, medicine, machinery, intermediate inputs, and raw materials, thereby weakening production and loan repayment. A credible macroeconomic adjustment, reserve management, exchange-rate flexibility appropriate to country conditions, and prudential limits on open foreign-currency positions are therefore central to financial stability. Import controls alone cannot resolve a persistent shortage of foreign exchange and can create additional distortions if they prevent productive firms from obtaining essential inputs.

9.4.4 Banking-sector vulnerability during crises

Banking systems can amplify macroeconomic shocks because deteriorating borrower income raises nonperforming loans at the same time that depositors and firms demand liquidity. Duttagupta and Cashin (2011) show that very high inflation, dollarization combined with depreciation or weak liquidity, and low profitability are important crisis indicators in developing countries. For low-income countries specifically, Eberhardt and Presbitero (2018) find that commodity-price movements substantially improve the prediction of banking crises, reflecting the dependence of many economies and borrowers on primary commodity revenues.

The pandemic also highlighted the feedback between asset quality and cross-border finance. Park and Shin (2021) find that higher nonperforming-loan ratios in both lender and borrower countries are associated with larger banking outflows from emerging markets. Strong capital and liquidity buffers, realistic loan classification, timely recognition of losses, and credible resolution frameworks are therefore preferable to indefinite regulatory forbearance that hides asset-quality problems.

9.4.5 Role of financial safety nets and emergency liquidity

Financial safety nets are designed to prevent temporary liquidity stress or isolated bank failures from becoming systemic crises. Emergency liquidity is intended for solvent and viable institutions facing temporary liquidity shortages, while deposit insurance protects small depositors and can reduce incentives for destabilizing runs. During the COVID-19 crisis, liquidity and borrower-support measures were associated with improved bank-market performance, illustrating the stabilizing potential of credible intervention (Demirgüç-Kunt et al., 2021).

Safety nets also create moral-hazard risks if banks expect unconditional public rescue. Demirgüç-Kunt and Detragiache (2002) find that explicit deposit insurance can increase banking instability where institutions are weak and coverage is excessively generous, underscoring the need for effective supervision and limited, credible protection. For low-income countries with limited fiscal resources, crisis preparedness and clear rules are particularly important because poorly designed rescues can transfer bank losses to taxpayers and threaten debt sustainability.

9.5 Financial Inclusion of Vulnerable Groups

Financial exclusion is rarely uniform across a population. This matters because a national increase in account ownership can coexist with persistent exclusion among groups whose financial needs are greatest. The literature on developing countries consistently finds that education and income improve formal inclusion, while women, young people, and rural residents often rely more heavily on informal saving and credit (Zins & Weill, 2016; Tinta et al., 2022). An inclusive financial strategy therefore requires product and institutional design that addresses group-specific barriers rather than assuming that general banking expansion will reach everyone equally.

9.5.1 Women

Women face financial barriers arising from lower income and employment, unequal property ownership, documentation constraints, mobility restrictions, unpaid care responsibilities, social norms, and lower personal ownership of phones or other digital devices. Zins and Weill (2016), using Global Findex data from 37 African countries, find

that being male, wealthier, more educated, and older is associated with higher formal financial inclusion. Abokyi (2023), using data for 102 developing countries, finds that remittance inflows significantly reduce the gender gap in financial inclusion, consistent with women's important role as recipients and managers of household transfers.

Digital finance can reduce some access constraints, but equal registration does not ensure equal usage. Lee, Morduch, Ravindran, and Shonchoy (2022) show in Bangladesh that practical training and assistance sharply increased active mobile-banking use by both female and male migrants and narrowed the adoption gap, yet men increased digital remittances far more than women. Gender-inclusive finance therefore requires personal control of accounts, secure phone access, financial and digital capability, and economic opportunities that allow women to generate and manage income.

9.5.2 Youth

Young people often have thin or nonexistent credit histories, limited collateral, unstable employment, low income, and little experience with formal institutions. Koloma (2021), studying youth in Mali, finds that financial inclusion is strongly associated with education, employment, household wealth, and having another family member with a bank account; inclusion is also positively related to willingness to become an entrepreneur. This suggests that youth finance connects closely to labor-market opportunity and family socioeconomic status.

Early-access interventions can change financial behavior when products are designed for young users. Lee et al. (2017), evaluating the Ghana YouthSave experiment, find that in-school banking and outreach increased account opening, deposits, and savings, with in-school banking producing stronger effects than marketing alone. Credit should be introduced carefully because unstable early-career income can make short-term high-cost debt especially risky.

9.5.3 People with disabilities

People with disabilities can face inaccessible branches, transport barriers, unsuitable interfaces, communication barriers, discrimination, lower employment income, and reliance on caregivers for financial transactions. Peprah, Avorkpo, and Kulu (2023), using

nationally representative Ghanaian data and instrumental-variable methods, find that disability reduces the likelihood of using commercial banks, rural banks, and formal financial services. At the same time, people with disabilities in their analysis were substantially more likely to use mobile money, indicating that digital delivery can overcome some mobility barriers.

Digital alternatives are not sufficient unless they are accessible. Providers should implement screen-reader compatibility, large-text and high-contrast options, accessible authentication, sign-language or text-based support, disability-friendly agents and branches, and procedures that protect autonomy where assistance is required. Product design should also recognize that disability-related expenses and income instability can increase the importance of flexible savings, insurance, and social-benefit payment services.

9.5.4 Refugees and displaced populations

Refugees and internally displaced people can be financially excluded by lack of nationally recognized identification, uncertain legal status, frequent mobility, limited credit history, language barriers, discrimination, and strict know-your-customer rules. Easton-Calabria and Hakiza (2021), studying refugee-led microfinance groups in Kampala, show that refugees are often unable to obtain formal microfinance loans and consequently organize their own savings and lending groups. These groups use trust and community knowledge as forms of social collateral and have reached women, single mothers, unregistered refugees, and very poor members.

The refugee evidence illustrates why proportional identification and customer-due-diligence frameworks matter. Tiered KYC, recognition of refugee identification permitted, portable digital identity, community-assisted onboarding, and partnerships among banks, humanitarian organizations, and refugee-led groups can expand access. At the same time, lending should be based on realistic income and repayment capacity rather than the assumption that credit alone can create self-reliance.

9.5.5 Informal-sector workers

Informal workers frequently receive cash wages, lack employer documentation, have volatile income, operate unregistered enterprises, and cannot produce audited accounts or

conventional proof of salary. These characteristics reduce access to bank credit and can also make minimum balances and fixed fees unattractive. Rojas Cama, Emara, and Trabelsi (2024), using data for 186 countries, find that greater financial inclusion is associated with a smaller informal sector across multiple measures, including in low-income countries.

The policy goal should not be to condition financial access on immediate formal registration. Appropriate products include low-balance transaction accounts, mobile wallets, cash-flow-based small-business finance, merchant payments, voluntary savings, and insurance for illness or work interruptions. For informal workers, the value of finance is greatest when it reduces transaction costs and vulnerability while providing a feasible path toward more productive and formal economic activity.

9.5.6 Remote rural communities

Rural communities face a combination of distance, low population density, seasonal income, agricultural risk, weak connectivity, limited electricity, and high provider fixed costs. Mobile money and agent banking can reduce these costs by replacing full branches with local cash-in/cash-out points and remote account access. Munyegera and Matsumoto (2018) show among rural Ugandan households that mobile-money use increases saving, borrowing, and remittance receipt and that usage declines with distance to the nearest agent.

Agent quality matters as well as geographic proximity. Johnen, Parlasca, and Mußhoff (2023), using georeferenced household and agent data from Kenya, show that users are more likely to adopt mobile money when nearby agents provide account-opening services and have received formal training, with trained agents especially important for people without formal education. Digital finance should complement rather than eliminate physical service points because cash remains central in many rural economies.

9.5.7 Integrated policy implications for vulnerable groups

The evidence across vulnerable groups suggests that universal financial inclusion requires differentiated delivery within a common framework of consumer rights. Women need control and privacy; youth need low-cost entry products and capability building; persons with disabilities need accessible interfaces and physical environments; refugees need

workable identification and recognition of alternative forms of trust and documentation; informal workers need products compatible with irregular cash flow; and rural communities need last-mile infrastructure. A single standardized banking product is unlikely to meet all these needs.

At the same time, targeted inclusion should avoid creating lower-quality financial systems for vulnerable customers. Simplified accounts and tiered KYC should not mean weaker fraud protection; digital credit should not expose low-income groups to hidden fees; and agent-based services should have the same complaint and safeguarding standards as branches. Strong institutions, competition, interoperable digital infrastructure, proportional regulation, financial capability, accessible identification, and reliable consumer redress are therefore common foundations across all vulnerable groups.

10. Conclusion

Banking and finance are essential components of economic and social development in low-income countries, but their contribution depends much more than the expansion of financial institutions or increases in credit. The evidence reviewed in this article shows that well-functioning financial systems can mobilize savings, improve payment efficiency, allocate resources toward productive activities, support entrepreneurship and investment, and strengthen the ability of households and firms to manage economic shocks. These functions can contribute to economic growth, poverty reduction, employment creation, and greater financial resilience. However, these benefits are neither automatic nor evenly distributed.

A central finding of the review is that financial inclusion should not be measured only by account ownership. Meaningful inclusion requires affordable access, regular and productive use, reliable services, appropriate products, and effective consumer protection. Rural households, women, low-income families, informal workers, smallholder farmers, and micro and small enterprises continue to face disproportionate barriers related to distance, service costs, irregular income, documentation, collateral, limited financial capability, weak infrastructure, and social inequalities. Consequently, simply increasing the number of accounts or financial-service providers may have limited developmental value unless these underlying constraints are addressed.

Access to appropriate credit remains particularly important for households, SMEs, and agriculture. Information asymmetry, inadequate collateral, weak credit histories, high screening costs, and uncertain legal enforcement continue to restrict lending to potentially productive borrowers. Credit expansion must also be balanced against the risks of excessive household debt, unsuitable loan products, and nonperforming loans. Better credit-information systems, movable-collateral frameworks, reliable property rights, efficient insolvency procedures, and responsible lending practices can therefore improve both access and financial stability.

Microfinance, cooperatives, mobile money, agent banking, digital payments, and fintech have significantly broadened the range of mechanisms available for reaching populations underserved by conventional banks. Nevertheless, the evidence on their development impacts is mixed. Microfinance can support enterprise investment, consumption smoothing, and access for women and rural households, but average poverty-reduction effects are generally modest and vary substantially across borrowers and institutional settings. Similarly, digital finance can reduce geographic and transaction-cost barriers, but unequal access to technology, low digital literacy, unreliable infrastructure, fraud, privacy concerns, and inappropriate digital lending can create new forms of exclusion and vulnerability.

Institutional quality therefore remains fundamental. Effective banking supervision, competition, transparent governance, sound monetary and regulatory frameworks, consumer protection, cybersecurity, financial integrity, and reliable legal institutions determine whether financial expansion produces sustainable development or greater financial risk. Financial innovation should complement rather than replace these institutional foundations.

The review also highlights the increasing importance of emerging issues such as climate-related financial risks, green finance, Islamic and alternative financial models, remittances, external economic shocks, and the financial inclusion of vulnerable populations. These areas demonstrate that financial development must respond to changing economic, technological, environmental, and social conditions rather than follow a single institutional model.

Overall, the most appropriate objective for low-income countries is not simply more finance, but more inclusive, productive, affordable, secure, and well-regulated finance. Policies should therefore combine expanded physical and digital access with financial and digital literacy, stronger credit infrastructure, greater competition, consumer protection, sound institutional governance, and measures specifically designed for underserved groups. When these elements develop together, banking and finance can become more effective instruments for investment, resilience, poverty reduction, and sustainable economic development.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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