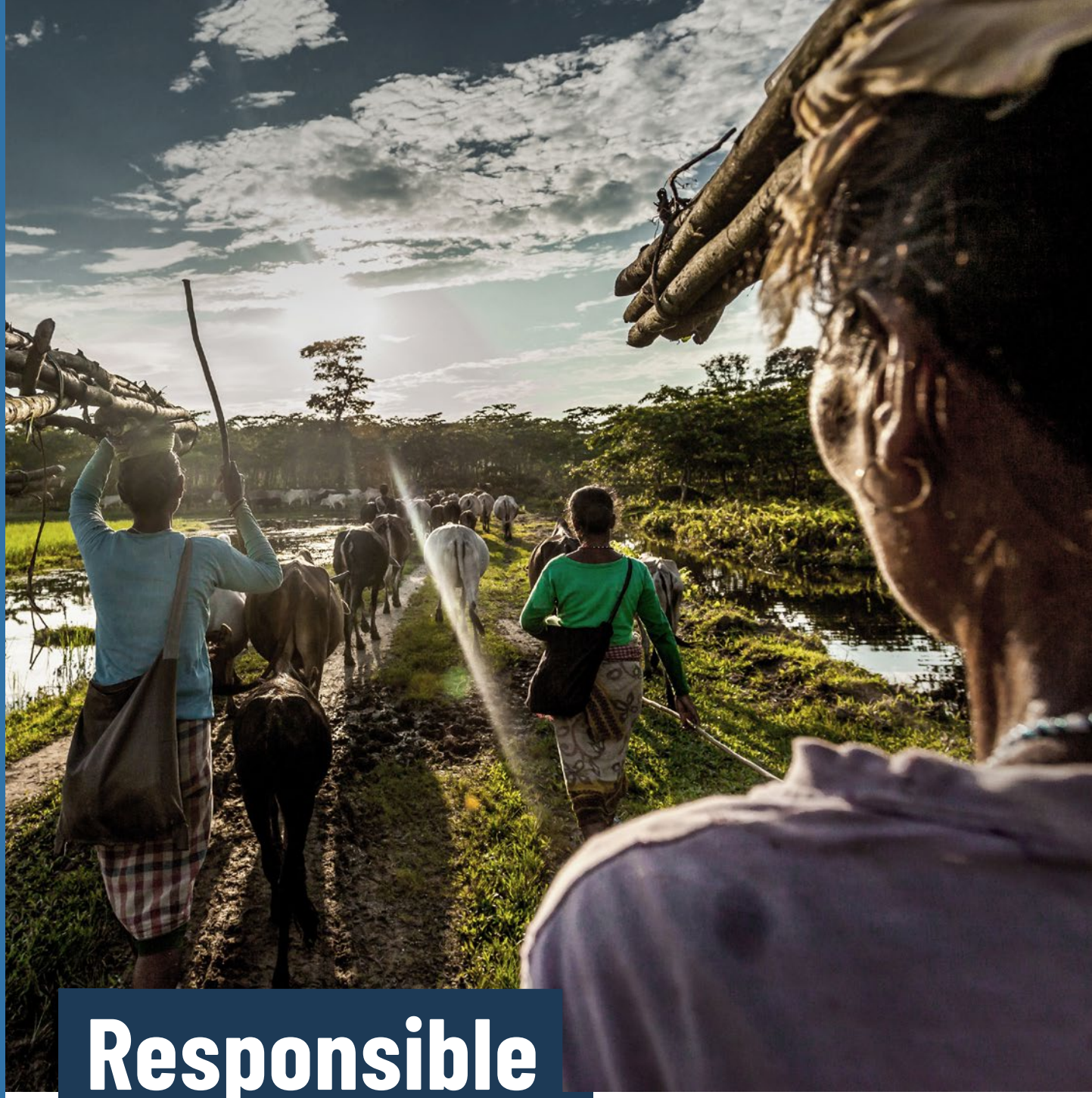
TECHNICAL GUIDE



Responsible Digital Credit

Frontier Solutions for Authorities and Providers

July 2025 • **Juan Carlos Izaguirre, Sonia Arenaza, Patrick Meagher, and Myra Valenzuela**

CGAP

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Acronyms and Abbreviations

AES	Advanced Encryption Standard
AFI	Alliance for Financial Inclusion
AI	Artificial Intelligence
API	Application Programming Interface
APP	Authorized Push Payment
APR	Annual Percentage Rate
ASIC	Australian Securities and Investments Commission
AWS	Amazon Web Services
Bigtech	Big Technology Company
BNPL	Buy Now, Pay Later
CAK	Competition Authority of Kenya
CBK	Central Bank of Kenya
CCAF	Cambridge Centre for Alternative Finance
CEGA	Center for Effective Global Action
CFI	Center for Financial Inclusion
CFPB	Consumer Financial Protection Bureau (US)
DFS	Digital Financial Services
ECOA	Equal Credit Opportunity Act (US)
EMDE	Emerging Market and Developing Economy
EU	European Union
FAQ	Frequently Asked Question
FCA	Financial Conduct Authority (UK)
FCCPC	Federal Competition and Consumer Protection Commission (Nigeria)
FinCoNet	International Financial Consumer Protection Organisation
Fintech	Financial Technology Company
FIU	Financial Intelligence Unit
FSA	Financial Sector Authority
FSD	Financial Sector Deepening
FSP	Financial Services Provider
FY	Fiscal Year
GDPR	General Data Protection Regulation (EU)
HKMA	Hong Kong Monetary Authority
ICT	Information and Communications Technology
IPA	Innovations for Poverty Action
KES	Kenyan Shillings
KYC	Know Your Customer
MFA	Multifactor Authentication
MFI	Microfinance Institution

ML	Machine Learning
MNO	Mobile Network Operator
MSE	Micro and Small Enterprises
NCBA	National Commercial Bank of Africa
NLP	Natural Language Processing
NPC	National Privacy Commission (the Philippines)
ODR	Online Dispute Resolution
OECD	Organisation for Economic Co-operation and Development
PIN	Personal Identification Number
QR	Quick Response
RBI	Reserve Bank of India
RBIH	Reserve Bank Innovation Hub (India)
RDFE	Responsible Digital Finance Ecosystem
Regtech	Regulatory Technology
ROSCA	Rotating Savings and Credit Association
SIM	Subscriber Identity Module
SMS	Short Message Service
T&C	Terms and Conditions
TLS	Transport Layer Security
UK	United Kingdom
UMRA	Uganda Microfinance Regulatory Authority
US	United States of America
USD	US Dollars
USSD	Unstructured Supplementary Service Data
VSLA	Village Savings and Loans Association

Executive Summary

THE DIGITAL CREDIT MARKET IS RAPIDLY evolving, shaped by new players, technologies, and partnerships. While this evolution brings financial, experiential, and welfare benefits to borrowers, it also introduces heightened consumer risks. Financial Services Providers (FSPs) may exploit behavioral biases, exposing consumers to fraud, data misuse, lack of transparency, inadequate redress mechanisms, and unfair treatment. These risks, particularly in contexts with fragmented consumer protection frameworks, can lead to overindebtedness and deteriorating financial health.

This calls for a responsible ecosystem approach, one in which authorities, providers, and other stakeholders collaborate to establish customer-centric rules and practices and strengthen their commitment and capability to mitigate and address consumer risks (Duflos et al. 2024). Customer centricity involves:

- Understanding the **entire borrower journey**, from loan application to repayment and redress.
- Mapping the **provider lifecycle** behind the borrower journey, including technology-driven and partnership-based stages.
- Clarifying the **financial regulatory perimeter** of digital lenders and digital credit service providers, including the roles of financial and non-financial authorities.

Following a customer-centric methodology, this technical guide presents practical solutions that authorities and providers can adopt to make personal digital credit more responsible. Drawing from a global landscaping of initiatives by financial and nonfinancial authorities, providers of digital loans and digital credit services, and research and consumer organizations, the guide categorizes solutions across four phases of consumer risk management: **identification, prevention, mitigation, and resolution**.

While the guide offers practical solutions for authorities and providers, it also includes a call to action for funders, research organizations, and consumer representatives, recognizing their critical role in shaping a responsible digital credit ecosystem. As the digital credit market continues to evolve, this guide does not evaluate the effectiveness of each initiative. Instead, it presents a typology of emerging practices, highlighting key **benefits and limitations** to support stakeholders in tailoring solutions to their specific markets.

Our research shows that authorities tend to prioritize preventative solutions, particularly in addressing fraud, transparency, unfair treatment, and overindebtedness. Authorities are laying the groundwork for a more responsible digital credit market by registering and licensing digital lenders, and by collaborating across agencies on regulatory, market monitoring, and market intelligence-sharing efforts, particularly to identify and prevent fraud. Regulatory measures such as improved disclosure requirements, the use of positive friction, and rules on product governance and algorithmic credit scoring enhance transparency and fairness. To mitigate and resolve conduct risks, authorities are introducing initiatives including fraud compensation, personal insolvency, anti-predatory lending regulations, and responsible debt collection. Strengthened collaboration with ecosystem actors

will be essential to developing more customer-centric regulations and improving market monitoring.

Providers are leveraging technology to address risks, especially fraud, data misuse, and overindebtedness, more comprehensively. Tools such as tech-enabled authentication, data analytics, fraud prevention and detection, and customer support systems help to protect consumers from financial harm. Positive friction, dynamic pricing, and automated debt monitoring support more responsible lending practices. Privacy enhancing features like data encryption, sharing preferences, and consent management tools help reduce data misuse. Across the ecosystem, collaborations among lenders, big technology companies (bigtechs), and telecommunications companies, and other service providers are increasingly essential to address consumer risks across the product lifecycle. We urge providers to continue to leverage technology and collaboration to enhance consumer security, product suitability, empowerment, and overall trust in digital credit.

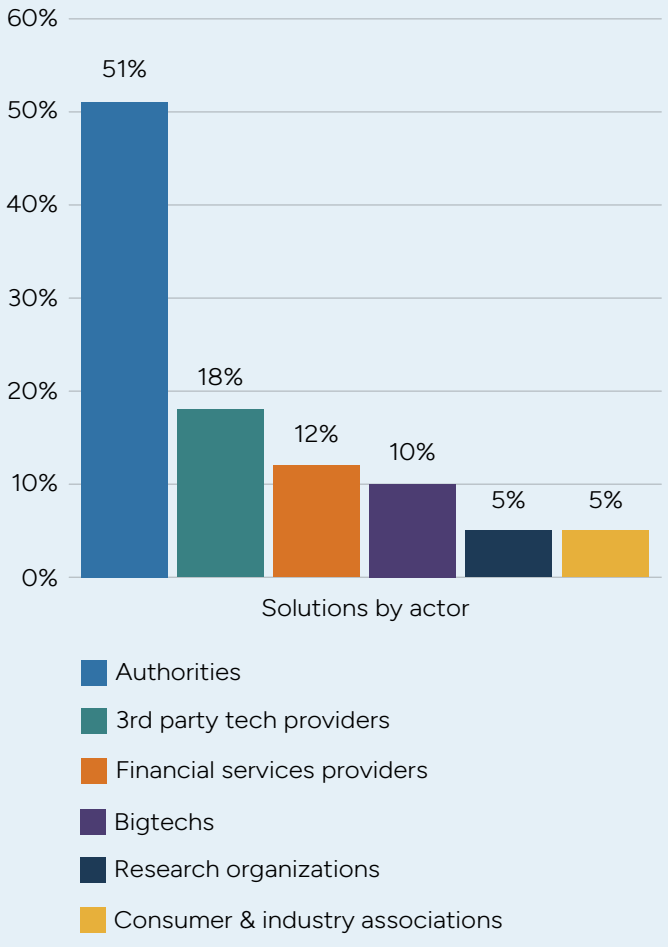
Researchers, consumer representatives, and funders play critical roles in advancing a responsible digital credit ecosystem. Research and consumer organizations have partnered with authorities and providers to monitor borrower risks, generate market insights, and test and advocate for solutions. We encourage them to deepen these efforts and strengthen their ability to engage effectively with authorities and providers. We also encourage funders to disseminate and advocate for solutions, conduct thorough due diligence, monitor the adoption of solutions, and strengthen collaboration among stakeholders.

Ultimately, only collaborative efforts will lead to a responsible digital credit ecosystem.

Summary Results of the Global Landscaping

This desk research identified 160 initiatives aimed at addressing the various risks faced by personal digital credit borrowers. Numerous initiatives span multiple risks, phases of the risk management cycle, and stages of the customer journey. The majority were led by government authorities (see Figure 1). For these solutions, our unit of analysis was a specific regulatory chapter or clause, rather than an entire regulation or guideline. As a result, a single digital credit guideline or regulation may have been disaggregated into multiple initiatives, each linked to different consumer risks.

FIGURE 1. **Initiatives per actor**



Source: Authors.

Note: Values do not add to 100 percent due to rounding.

Regarding the customer journey, most initiatives focus on the steps of application, repayment, and agreement stages (see Table 1). In terms of consumer risks, the most commonly addressed issue was lack of transparency, followed by fraud, data misuse, and unfair treatment (see Table 2). Across the risk management cycle, the majority of initiatives targeted risk prevention (108) and risk mitigation (63) (see Table 3).

TABLE 1. **Initiatives by step in the customer journey**

Customer Journey Step	No. of Initiatives (Many Cover Multiple Steps)
Awareness/ Market Information	66
Advice/ Orientation	59
Account Sign-up	79
Application	90
Agreement	83
Assessment/ Approval	72
Disbursement	63
Using Funds	51
Repayment	88
Closure	47
Late Repayment	56
Recourse/Query/ Grievance	72

Source: Authors.

TABLE 2. **Initiatives by consumer risk and issue**

Consumer Risk and Issue	No. of Initiatives (Many Cover Multiple Risks)
Behavioral Vulnerabilities	24
Fraud	41
Data Misuse	36
Lack of Transparency	48
Inadequate Redress	19
Unfair Treatment	33
Agent-Related Risk	11
Network Downtime	19
Overindebtedness	32

Source: Authors.

TABLE 3. **Initiatives by risk management phase**

Risk Management Phase	No. of Initiatives (Many Cover Multiple Phases)
Risk Identification	52
Risk Prevention	108
Risk Mitigation	63
Risk Resolution	11

Source: Authors.

SECTION I

Introduction

CONCERNS ABOUT EVOLVING consumer risks in digital credit are growing, yet most research has focused on single case studies or pilots, rather than a comprehensive view of solutions addressing these risks. This Technical Guide aims to fill this knowledge gap by:

- Compiling evidence on how authorities, providers, and other stakeholders across jurisdictions are working to prevent, identify, mitigate, and resolve consumer risks in personal digital credit
- Increasing awareness and understanding of the types of solutions being adopted, their relevance, associated challenges and limitations, and, where available, their outcomes.

To do this, we conducted a comprehensive desk research effort from April 2024 to March 2025, drawing on publicly available sources, including research publications, regulations, guidance, and news articles. This research identified 160 initiatives and systematically categorized them by:

- The consumer risk addressed,
- The phase of the risk management cycle involved, and
- The type of actor leading the initiative.

This categorization provides a structured view of how different stakeholders are responding to emerging risks in a digital credit ecosystem. While the compilation is extensive, it is not exhaustive. It reflects a diverse array of initiatives adopted across different market contexts and varying maturity levels to address consumer risks associated with a broad range of digital credit products (see Table 4).

This Guide builds on CGAP research, and work from other key global bodies, including the Alliance for Financial Inclusion (AFI), the International Financial Consumer Protection Organisation (FinCoNet), the Organisation for Economic Co-operation and Development (OECD), and the World Bank, as well as research organizations such as Innovations for Poverty Action (IPA), the Cambridge Centre for Alternative Finance (CCAF), and the Center for Financial Inclusion (CFI).

It also draws on CGAP's decade-long work in digital credit, including gender-sensitive market monitoring with authorities and lab experiments with providers, which highlighted persistent challenges such as high nonrepayment rates, limited transparency, inadequate recourse, gender disparities in credit access, fraud, and data misuse (CGAP 2025b; Izaguirre et al. 2022a; Mazer and McKee 2018).

This work contributes to CGAP's vision for a Responsible Digital Finance Ecosystem (RDFE), where financial and nonfinancial authorities, providers, consumer representatives, and market facilitators collaborate to ensure that digital financial services (DFS) improve people's lives and protect them from financial harm (Duflos et al. 2024). The RDFE framework is built on four components:

- **Customer Centricity:** Placing customers at the center of every action.
- **Collaboration:** Jointly creating, funding, implementing, and monitoring solutions.

TABLE 4. **Summary of key attributes**

Key Attribute	Description
Instant	Loans are approved instantly, often within seconds.
Automated	Loan decisions are automated (no human review) and leverage alternative data (e.g., social media, behavioral data).
Remote	Account sign-up and application, disbursement, repayment, and queries are managed remotely, and often available 24/7.
Direct to individuals	Credit risk based on individual; initially reliant on alternative data, then shifts to conventional data (e.g., loan repayment).
Unsecured	Generally, no collateral, guarantee, cosigners, or formal proof of income required.
Shorter term	Loan tenure can be as short as 1 week, typically 4 weeks up to a few months.
Smaller value	First-time loans can be tiny (as low as $0.50) and then increase in value upon successful repayment.

Sources: Authors, based on AFI 2020, CEGA n.d, Hwang and Tellez 2016, and Stewart et al. 2018.

- **Capability:** Strengthening tools, skills, and institutional capacity.
- **Commitment:** Demonstrating sustained leadership and accountability.

Understanding Personal Digital Credit

Since their emergence in the early 2010s, digital loans have introduced new lending dynamics distinct from conventional credit. CGAP initially identified three key attributes that differentiate them from conventional loans: instant, automated, and remote (Hwang and Tellez 2016). More recently, Accion, AFI, the Center for Effective Global Action (CEGA), and others have expanded this and identified additional important attributes (AFI 2020; CEGA n.d.; Stewart et al. 2018), as shown in Table 4.

While we recognize that money is fungible and that borrowers may use digital credit for entrepreneurial purposes, this research focuses on personal digital credit products, i.e., credit offered to individuals rather than micro and small enterprises (MSEs). Credit designed for MSEs generally requires distinct creditworthiness assessments and underwriting processes, such as assessment of inventories, cash flows, personal activity of applicants, digital receipts, and physical assets (CGAP 2019).[1]

This research also includes solutions targeting digitally delivered retail Buy Now, Pay Later (BNPL) products. BNPL is a form of point-of-sale credit that allows consumers to defer payment for purchases and repay interest-free installments within a set period. As BNPL products have become increasingly digitized, they now share many of the same characteristics and pose similar consumer risks to other forms of digital credit.

Table 5 highlights several well-known examples of personal digital credit products operating in Ghana, India, Kenya, Mexico, Nigeria, Peru, the Philippines, Tanzania, and Uganda.

1 In this Technical Guide, we use "consumers" to refer to the broader public and "customers" to refer to those who have active relationships with a provider.

TABLE 5. **Examples of personal digital credit products and their main characteristics**

Provider	Lending Product	Category	Partnership	Launch Year	Loan Size (USD)	Loan Term	Customers	Markets
Tala	Tala	Mobile-based	MNOs, banks	2011	10–1,000	21–90 days	6 million	India, Kenya, Peru, Philippines, Tanzania
Branch	Branch	Mobile-based	MNOs, banks	2015	2.2–1,200	1–12 months	4 million	India, Kenya, Nigeria, Tanzania
Safaricom and NCBA	M-Shwari (part of the M-Pesa ecosystem)	Mobile-based	MNO (Safaricom), bank (NCBA)	2012	0.78–7,751	Up to 30 days	6.5 million (FY24)	Kenya
M-Kopa	M-Kopa solar (pay-as-you-go)	Mobile-based and online	MNO (Safaricom, Vodacom, MTN), bank (NCBA)	2011	0.70–350	Up to 30 days	5 million	Ghana, Kenya, Nigeria, Uganda
Kubo Financiero	Kubo	Mobile-based and online	Financial institutions	2012	1,200–5,000	4–36 months	1,200 (FY24)	Mexico

Sources: Provider websites.

The Growth and Transformation of Digital Credit

The global digital credit market has experienced rapid transformation, driven by technological innovation, evolving partnerships, and expanding data ecosystems. This evolution brings new opportunities and benefits, alongside new risks and challenges, for borrowers.

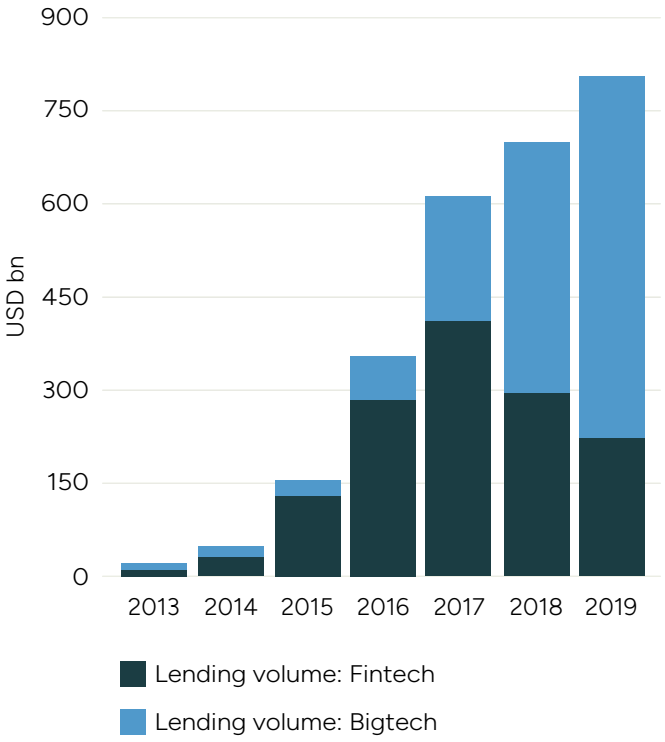
Market Growth: The market has rapidly grown in the past decade. In 2019, fintech and bigtech credit reached $800 billion globally, with rapid uptake in Africa, Asia, and Latin America driven by cell phone penetration (see Figure 2). The global fintech credit market is projected to reach $4.9 trillion by 2030 (Allied Market Research 2021).

Ecosystem Complexity and Modularization: A growing set of actors is reshaping the digital credit landscape, including fintechs, alternative data providers, mobile network operators (MNOs), and providers of artificial intelligence/machine learning (AI/ML)–driven tools (e.g., fraud detection, KYC, credit scoring). As partnerships increase, modularization is expected to shape the market and the borrower journey.

Alternative Data and Embedded Finance: Digital lending relies on vast data sources, including cell phone usage, social media activity, and payment and transaction history (CGAP 2025a). Consumers, often willing to share data for credit access, may also do so inadvertently via financial services that are embedded in nonfinancial companies' services (Fernandez Vidal and Salman 2023; Kruijff et al. 2024). Alternative data-based credit scoring supplements traditional scoring, enabling access for those without credit histories. Open finance facilitates data sharing across financial actors (CGAP et al. 2024).

AI/ML Risks and Benefits: AI/ML improves credit assessment, underwriting, pricing, and fraud detection, but also poses risks to consumers, including bias, discrimination, system disruption, or potential exploitation for fraud.

FIGURE 2. **Bigtech credit is overtaking fintech credit**



Source: Cornelli et al. 2020.

Note: The 2019 fintech lending volume figures are estimated for Australia, China, the EU, Great Britain, New Zealand, and the US.

Public Goods and Governments' Role: Government-led public goods, such as cybersecurity frameworks, interoperability regimes, and telco infrastructure, have been essential for building a trusted digital credit market.

Personal Digital Credit Brings Important Benefits to Borrowers

The evolution of personal digital credit has brought important benefits to potential and existing borrowers:

"Gateway" to Formal Financial Inclusion: Digital lenders increasingly use alternative data to assess creditworthiness, helping overcome barriers such as lack of collateral or formal credit history. This is especially valuable for women and low-income populations, enabling them to access tailored financial products that better meet their needs (Caire and Fernandez Vidal 2024).

Consumption Smoothing: Digital credit provides short-term financing that helps borrowers meet household needs and manage micro and small businesses. For example, in Tanzania, women were more likely to use digital credit for business than men, while men tended to use it for household needs and airtime purchases (Kaffenberger et al. 2018).

Improved Customer Experience: Borrowers benefit from lower transaction costs and greater convenience due to near-instant loan approval and disbursement. In addition, using private digital channels allows borrowers to avoid interpersonal issues more common in other borrowing environments, such as harassment, social pressure, and corruption (Mazer and Fiorillo 2015).

Potentially Improved Personal Resilience and Well-Being: In Kenya, households using M-Shwari were 6.3 percent less likely to forgo expenses when facing unexpected income shocks, suggesting improved short-term financial resilience (Suri et al. 2021). In Nigeria, users of a digital lending app reported improved well-being, though the product did not lead to resilience or women's economic empowerment (Björkegren et al. 2021).

BOX 1. **Customer Quotes on Positive Experiences with Digital Credit**

"M-Shwari is so convenient for me. It's a direct process, there is no waiting, and there is no holding you. It's instant."
—Helen, Kenya (Cook and McKay 2015).

"When I got approved for a [Tala] loan it was like a huge weight has been lifted off my shoulders because I don't need to worry about my water and electricity bills."
—Jean, Philippines (Tala n.d.).

"MoMo Kash is about helping others. When you're having trouble managing, you can use the service with a view to repaying within a certain timeframe."
—Anonymous male, Côte d'Ivoire (Navarro et al. 2024)

Behavioral Vulnerabilities Associated with Digital Credit

Behavioral factors can increase consumers' vulnerability to risks in digital credit, and lenders may purposefully or inadvertently exploit these vulnerabilities and increase borrowers' exposure to, and materialization of, risks. Consumers often make decisions that deviate from their intentions, expectations, or best interests, particularly when influenced by the speed, ease, and convenience of digital credit. These conditions can amplify behavioral biases that are cognitive and emotional shortcuts that simplify decisions but often result in irrational or risky financial behavior. Research shows that rapid borrowing decisions, such as those involved in digital credit, heighten susceptibility to such biases (Bartholomae and Fox 2021; Hamid 2025; Lea 2020; Livshits 2020; Mazer et al. 2014). Key behavioral biases include:

Hyperbolic Discounting and Present Bias: Consumers often overvalue short-term gains and undervalue long-term benefits and costs, leading to impulsive borrowing. The ease and speed of digital credit can override self-control and focus on the immediate appeal of having the money, while downplaying or postponing concerns about its costs.

Anchoring and Message Framing: Consumer choices are often influenced by how information is presented, such as promotional messages that emphasize high maximum loan amounts or ease of access, as they make decisions. These push marketing tactics can lead to consumers borrowing amounts beyond their actual needs.

Loss Aversion and Availability Bias: Consumers often overvalue something readily accessible, with unrestricted access. Borrowers may be more driven to take out digital loans, simply to avoid missing an opportunity, after reading messages like "you qualify for . . .," even if the loan isn't necessary.

Salience Bias: The lack of human interaction and tangible processes can make digital credit feel less "real". This may result in borrowing with unclear purposes, missing loan repayments, placing digital loans as a lower repayment priority, or neglecting or misunderstanding loan terms.

Default Settings and Status Quo: Consumers often accept default conditions without review and may reborrow out of habit, not need, which perpetuates dependency or exposure to unfavorable terms.

Overconfidence and Mental Accounting: Borrowers may treat different types of debt separately and take multiple small loans (e.g., BNPL products), while remaining **overconfident in their repayment ability**, ignoring their cumulative debt burden.

New and Evolving Consumer Risks in Personal Digital Credit Could Lead to Negative Outcomes

Increased digitization can exacerbate and introduce new and evolving consumer risks in personal digital credit. These include fraud, data misuse, unfair treatment, lack of transparency, and inadequate redress—often intensified by behavioral vulnerabilities. Cross-cutting risks such as network downtime, agent-related risks, and other third-party risks pose further challenges. Table 6 below outlines these key risks.

Without adequate consumer protection, behavioral vulnerabilities can be exploited, increasing consumers' exposure to risks in digital credit. These risks may lead to overindebtedness and other negative customer outcomes such as privacy violations, which could undermine the financial health of borrowers (see Figure 3).[2]

2 Overindebtedness is a complex, multi-dimensional concept without a universally accepted definition. A consumer may become over-indebted for many reasons, including a provider's conduct, unexpected life events, borrower's financial decisions, and structural poverty (World Bank forthcoming).

TABLE 6. **Key consumer risks exacerbated by digital credit**

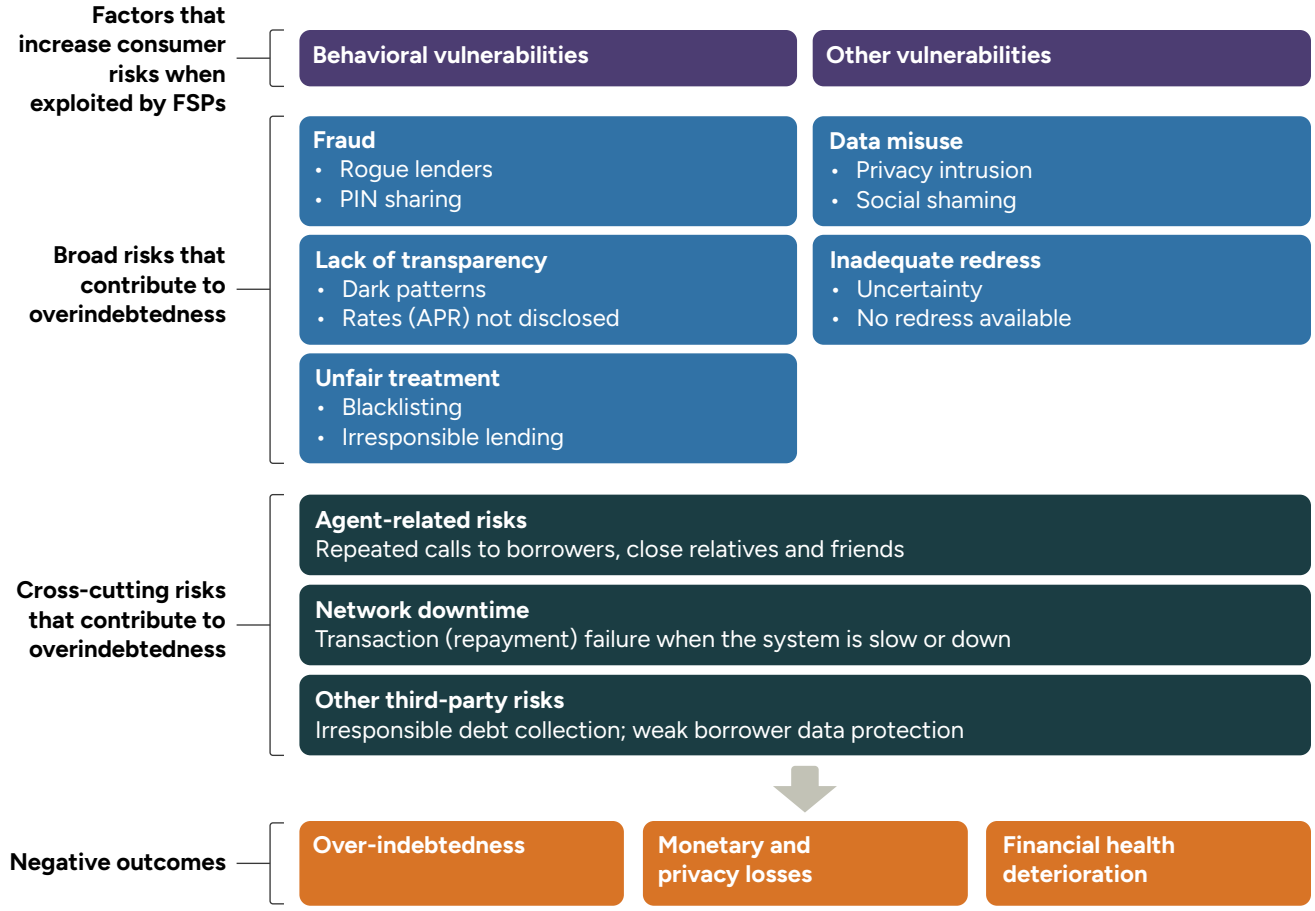
Consumer Risk and Issue	Example of How Digital Credit Can Exacerbate Consumer Risks
Behavioral Vulnerabilities	Borrowers' behavioral vulnerabilities make them more susceptible to complex consumer risks in digital credit (see page 8).
Fraud	Fraudulent apps or platforms, phishing, spoofing, or fake SMS or websites may trick borrowers into sharing sensitive information (e.g., account numbers, PIN), transferring funds (e.g., loan "application" fees), or allowing access to other apps or device data. Around 40 percent of 1,200 survey respondents in Rwanda reported being targeted by fraudsters. Over 20 percent of banked individuals in Kenya, Nigeria, and Uganda reported financial losses due to fraud, scams, or bribes (CEGA and IPA 2024).
Data Misuse	Borrowers may have personal data collected or shared without consent or legitimate purpose, utilized for aggressive marketing, sales, or debt collection. Over half of the largest digital loan apps in 2020 collected sensitive data (Kelly and Mirpourian 2021). The average data breach cost increased from USD 4.45 million in 2023 to 4.88 million in 2024, with 46 percent of breaches involving personal data (IBM 2024).
Lack of Transparency	Hidden, misleading, and noncomparable disclosure of costs affects digital borrowers, who often have limited financial and digital literacy and are subject to high-pressure sales practices. A fifth of surveyed digital borrowers in Kenya and a quarter in Tanzania reported experiencing poor transparency in 2017. Poor transparency correlated with higher late repayment and default rates (Izaguirre, Mazer, and Kaffenberger 2018).
Inadequate Redress	Borrowers may find it harder to know where and how to complain and obtain redress as more actors participate in offering digital credit. For example, with BNPL products, customers may believe the financing comes from the consumer goods company when it is actually provided through a partnership with a lender, potentially leading to confusion during the grievance/redress process.
Unfair Treatment	Lenders, credit bureaus, and third parties may discriminate or blacklist debtors, or fail to follow minimum responsible lending practices (Cerise+SPTF 2024; OECD 2019a).
Cross-Cutting Risks	Agents may conduct irresponsible practices (e.g., overcharging at loan disbursement, aggressive communications with borrowers). Network downtime may affect the borrower experience (e.g., failure to complete a repayment transaction). Other third parties may also conduct or contribute to irresponsible practices (e.g., unethical debt collectors, apps with weak security that enable borrower data leaks).
Overindebtedness	Greater vulnerabilities and risk exposures may lead to overindebtedness, which can manifest in loan stacking (i.e., multiple borrowing within a short period to repay existing loans), skipping meals, selling assets, or failing to pay children's school fees (see Figure 3).

Sources: Authors, adapted from Chalwe-Mulenga et al. 2022.

Note: Consumer risks are adapted from CGAP's DFS consumer risk typology and include additional challenges related to digital credit: unfair treatment, behavioral vulnerabilities, and overindebtedness.

In jurisdictions with more advanced digital credit markets, such outcomes are already emerging (see Box 2). Overindebtedness not only affects individuals, it also carries broader implications for financial inclusion and stability. If high delinquency rates erode a provider's loan portfolio quality, it can cause negative spillover effects, where other actors' solvency is affected and providers begin to classify certain consumer groups as unlendable (Basel Committee on Banking Supervision 2016; Tomilova et al. 2018).

FIGURE 3. **From vulnerabilities to overindebtedness**



Source: Authors, adapted from Chalwe-Mulenga et al. 2022.

BOX 2. **Data on overindebtedness in digital credit**

- From 2014 to 2016, 2.7 million **Kenyans** defaulted, including 400,000 borrowers who had taken out digital loans of KES 200 (~USD 2) or less. By the end of 2022, 14 million accounts had defaulted on digital loan apps (Maringa and Jalloh 2023; Mustafa et al. 2017).
- Phone surveys in 2024 showed that 86 percent, 70 percent, 55 percent, and 53 percent of digital borrowers in **Kenya**, **Tanzania**, **Ghana**, and **Côte d'Ivoire**, respectively, faced repayment challenges. Defaults ranged from 17–46 percent. About 60 percent of Kenyans, 30 percent of Ghanaians and Ivorians, and 20 percent of Tanzanians reduced basic expenses to repay loans (Spriggs and Kipkemboi 2024).
- Approximately 20 percent of digital borrowers defaulted in **Tanzania** from 2016 to 2018. Late-repaying customers who got another loan were more likely to repay it late and incur higher penalty fees (Izaguirre, Mazer, and Graham 2018).
- Many suicides due to unethical debt collection by digital loan apps have been reported in **India** since 2020, including 60 borrowers who committed suicide due to receiving abusive messages and threats (Agarwal et al. 2023).

A Responsible Ecosystem Approach Is Needed for Borrowers to Fully Realize the Benefits of Digital Credit

From a consumer protection perspective, three key developments in digital credit have rendered traditional frameworks ineffective to address consumer risks:

1. **Different types of lenders have been operating under the remit of different authorities.** While a bank is supervised by the central bank, a microcredit institution may be overseen by a sectoral authority, a cooperative by the agriculture ministry, a money lender by a general consumer protection authority, and a peer-to-peer lender by the securities regulator. Each authority typically applies a different regulatory and supervisory framework––except where there is an overarching financial consumer protection law.
2. **This fragmented framework has worsened with digital credit.** Any lender can partner with a fintech to offer digital credit products. New local and international fintechs may emerge and offer digital credit apps that any customer can easily download from an app store to their mobile phones. While these apps may not fall under the remit of a financial authority, they are often subject to regulations issued by data protection, cybersecurity, competition, general consumer protection, financial intelligence, telecommunications, or ICT authorities. E-commerce platforms and retail stores operating outside the purview of a financial authority may deliver digital credit as an ancillary service to their primary business, while still serving as the main customer interface.
3. **This complex, fragmented framework leads to inconsistent consumer protection standards.** Digital borrowers may face heightened exposure to risks and negative outcomes due to inadequate and inconsistent standards. Some digital lenders exploit regulatory arbitrage—choosing their legal form (e.g., MFI, financing company, fintech) based on the most lenient consumer protection regulatory regime. Rogue actors may also take advantage of fragmented oversight to launch fraudulent apps that deceive users into sharing personal data or sending money, undermining trust in the digital credit market.

As a result of these developments, a holistic and proactive consumer protection approach to digital credit is needed. Namely, an RDFE approach to digital credit, whereby financial and nonfinancial authorities, digital credit providers and associations, consumer representatives, and market facilitators (e.g., research organizations) collaborate in:

- Issuing customer-centric standards and rules
- Monitoring consumer risks
- Addressing borrower complaints
- Resolving overindebtedness, privacy, and monetary losses.

This approach builds on global good practices, principles, and standards (e.g., BTCA 2021; Cerise+SPTF 2024; OECD 2019a; OECD 2022).

SECTION II

Consumer Risks in Personal Digital Credit: A Customer-Centric View

AS PART OF AN RDFE, IDENTIFYING solutions to consumer risks in digital credit is strengthened by a customer-centric view of the borrower journey. A detailed and holistic view of the customer journey helps stakeholders understand the complexity of digital credit experiences, identify multiple sources of consumer risk, and uncover opportunities to develop and adopt solutions. This view entails a better understanding of:

- The full consumer journey, from application to repayment and closure, including risks at each stage and potential detours where problems arise and human support is needed.
- The provider life cycle behind the journey, highlighting stages that rely on technology or automation, enable customer feedback, or involve partnerships.
- The complex regulatory landscape associated with digital credit and various actors that influence different stages throughout the customer journey.

In addition, addressing consumer risks in digital credit requires considering four phases of risk management:

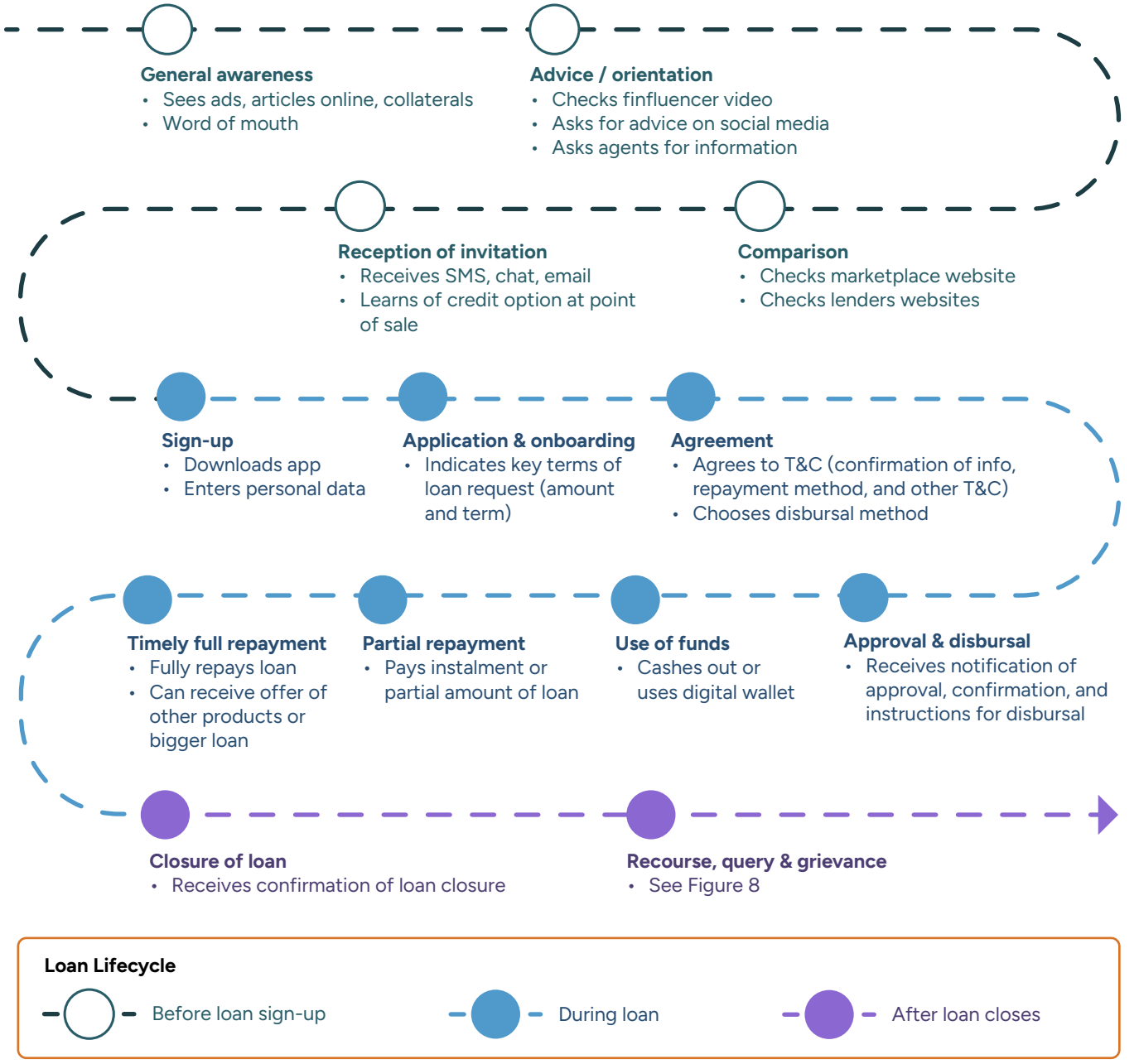
- **Risk identification (Including Risk Monitoring):** Recognizing and measuring potential risks to digital borrowers and tracking them over time to ensure timely detection and response to changes in the risk environment.
- **Risk Prevention:** Implementing measures to reduce or eliminate the likelihood that identified risks will materialize and negatively affect digital borrowers.
- **Risk Mitigation:** Applying strategies to lessen the severity or impact of risks that cannot be fully prevented, helping digital borrowers withstand potential harm.
- **Risk Resolution:** Taking action to address risks that have materialized, with the goal of eliminating their negative effects on digital borrowers.

FIGURE 4. **Phases of the consumer risk management cycle in digital credit**

Customer Journey in Personal Digital Credit

A customer-centric view of personal digital credit requires a comprehensive understanding of the different steps a consumer may take to acquire, use, and close a digital loan. This means going beyond the typical point-of-sale interaction and recognizing the multiple actions that a consumer may take before signing up for a loan and after a disbursement, such as researching, seeking support, or resolving issues. These steps may involve not only the lender but also various partners. Figure 5 illustrates a potential positive customer journey, outlining key stages before, during, and after the digital loan experience.

FIGURE 5. **Customer journey in personal digital credit: Positive path**

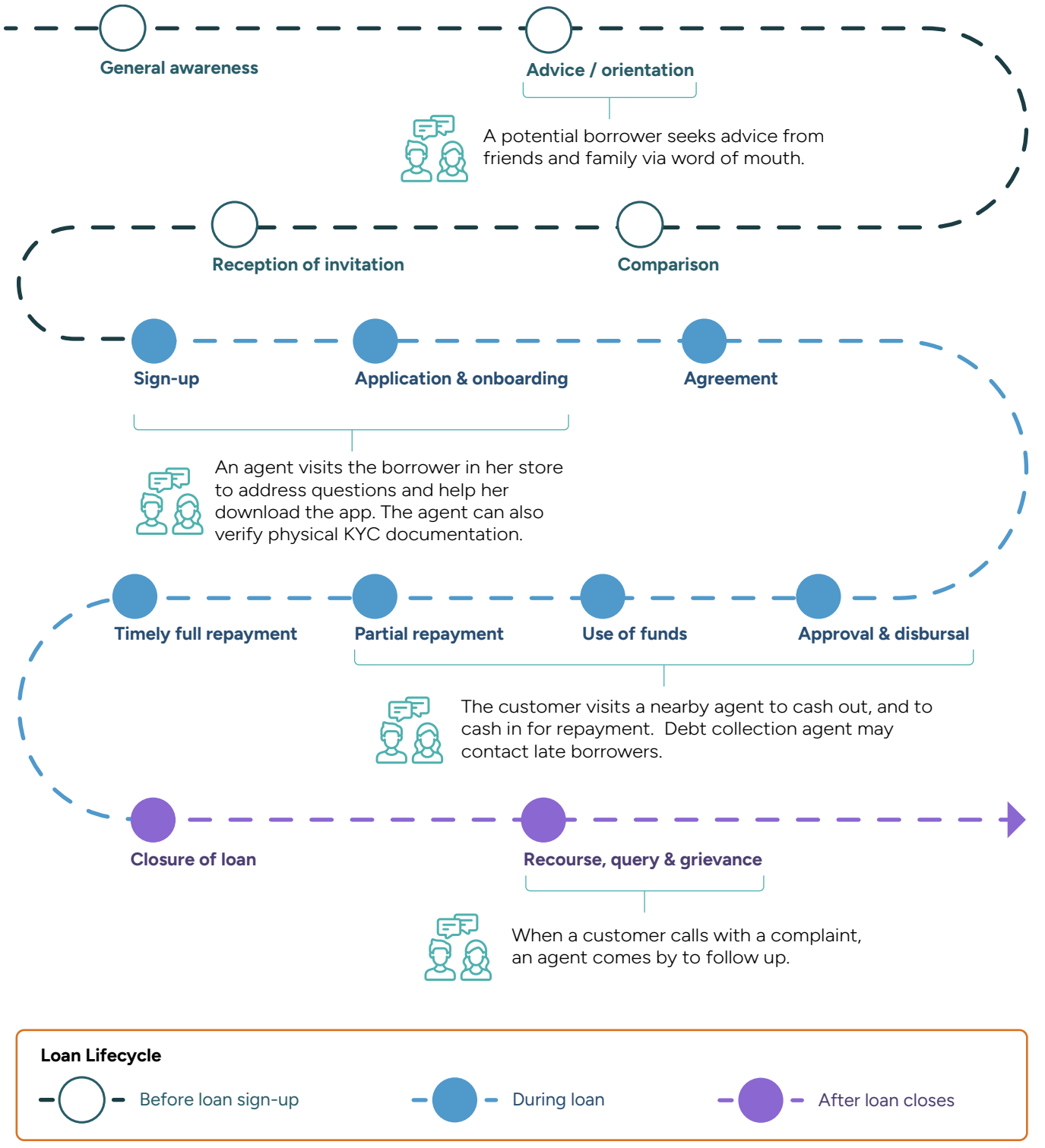


Source: Authors, building on Stewart et al. 2018; D91 Labs N.d.; CGAP 2025b.

Depending on the digital credit business model, a borrower may still have multiple human, physical interactions with lenders or partners at different stages of their journey. See Figure 6 for an illustration of this path.

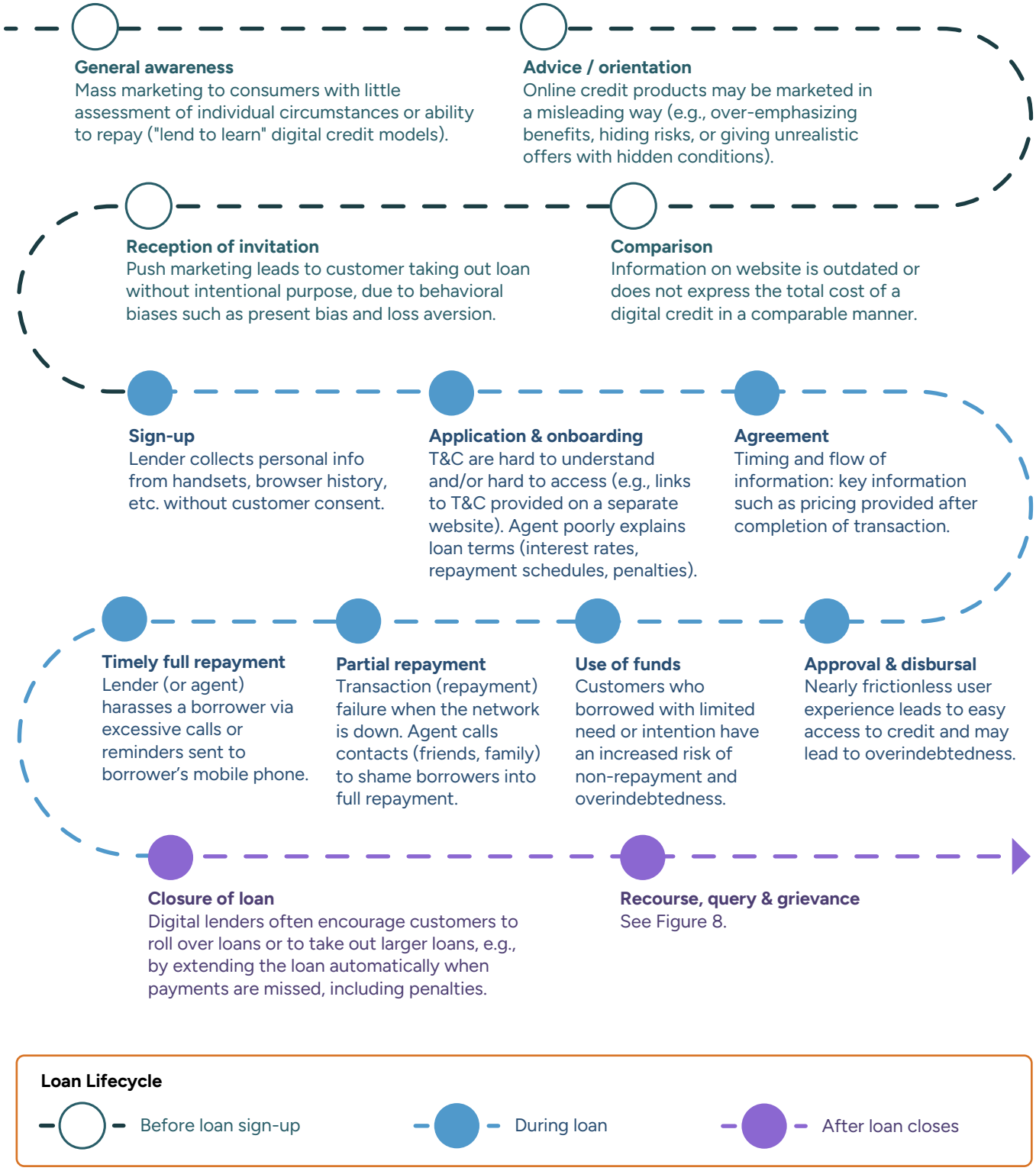
An understanding of the multiple steps that a borrower may take in their journey can help identify the different types of risks and issues that a customer may face. See Figure 7 for some examples of these risks and Box 3 for customer quotes on negative experiences.

FIGURE 6. **Customer journey: Positive path with human touchpoints**



Source: Authors, building on Stewart et al. 2018; D91 Labs N.d.; CGAP 2025b.

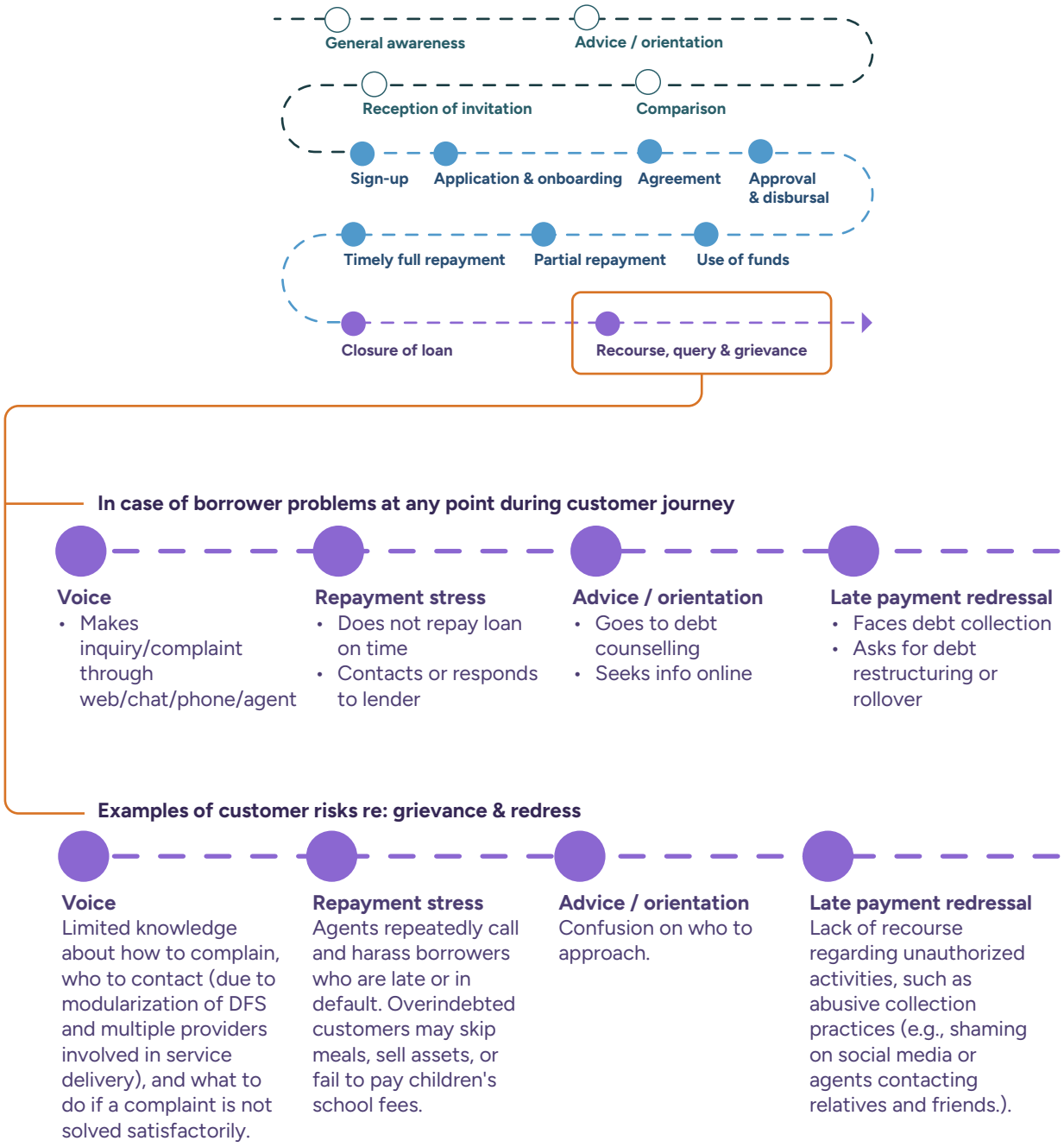
FIGURE 7. **Customer journey: Examples of risks**



Source: Authors, building on Stewart et al. 2018; D91 Labs N.d.; CGAP 2025b.

When digital borrowers face issues during their journey—such as difficulty repaying a loan—they aim to contact the lender for support. Figure 8 illustrates the customer experience and potential risks that a borrower may face at each step of the grievance and redress process.

FIGURE 8. **Customer journey: Grievance and redress**



Source: Authors, building on Stewart et al. 2018; D91 Labs N.d.; CGAP 2025b.

Provider Life Cycle in Digital Credit

A clear understanding of the customer journey in digital credit is closely tied to the provider's life cycle. Each stage—from onboarding to repayment—relies on real-time or near-real-time interventions, with risk checkpoints embedded throughout the life cycle. Data-driven feedback loops further enhance this process, continuously informing and refining product design, credit assessment, and customer engagement strategies.

Digital credit providers increasingly rely on a blend of alternative and traditional data sources –such as mobile phone metadata, transactional behavior, and formal credit histories—augmented by AI, ML, and application programming interface (API) technologies to streamline the credit life cycle. These technology integrations enhance the delivery of seamless customer experiences while proactively detecting and mitigating risks across the credit life cycle (see Figure 10). To operationalize these capabilities, digital credit providers often partner with third-party vendors. While these partnerships can enhance scale and efficiency, they also introduce critical considerations around data security, operational dependency, and regulatory compliance that providers must actively manage.

BOX 3. **Customer Quotes on Negative Experiences with Digital Credit**

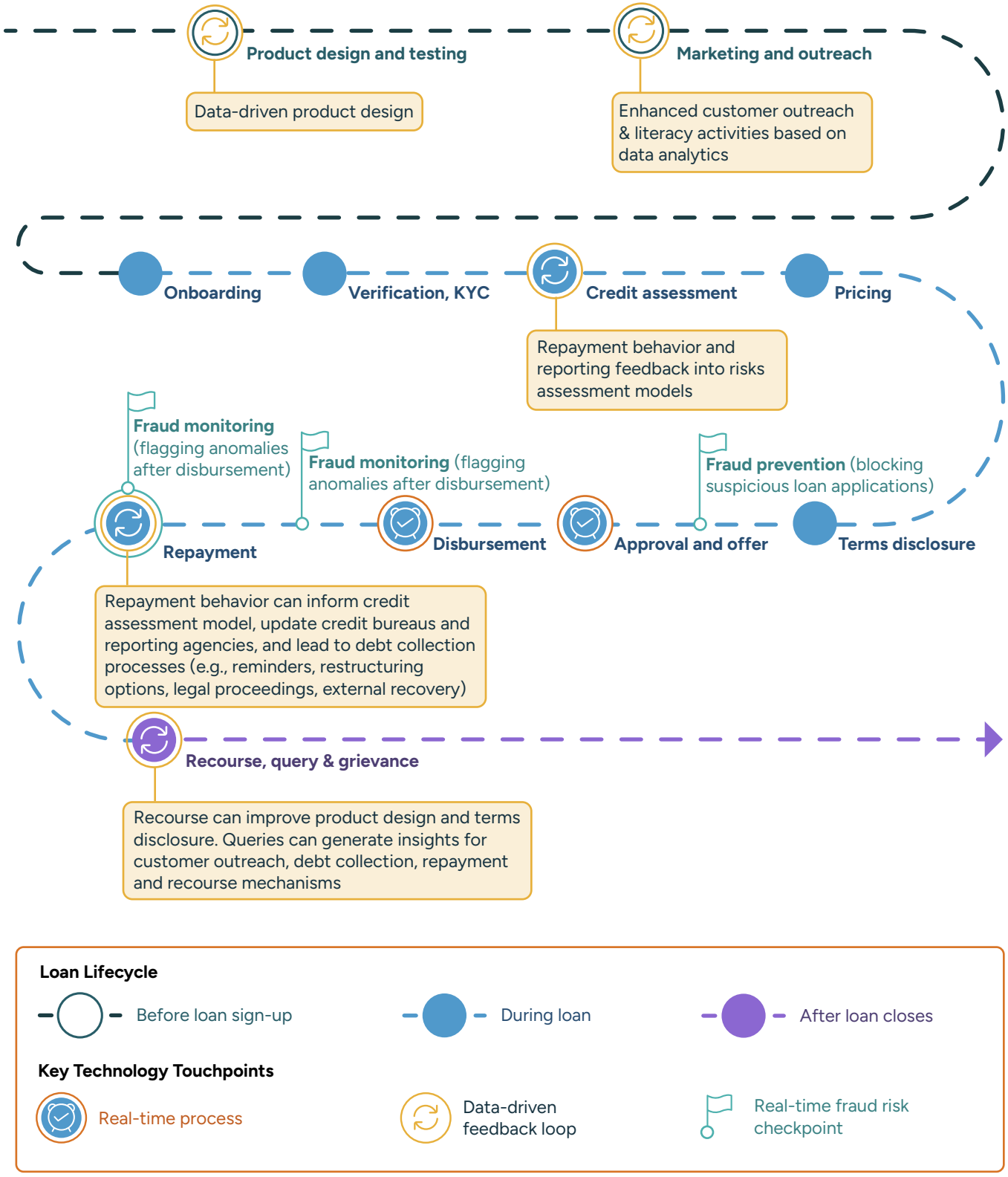
"@zeebusiness @AnilSinghvi_ #OperationHaftaVasooli Sir kisi door ke relative ne credit card ka bill nahi pay kiya They found me on Facebook and started calling me on my mobile also on landline and using very bad abusive language. I don't know what to do."

"This number 8792662456 from my cash app. Call me back to back and call my contacts without my permission. They calling my contacts and misusing my personal data. #BanLoanApps @RBI @RBIsays @CyberGujarat @DelhiPolice @GujaratPolice @BanegaAb."

"I didn't go to the terms and conditions because you have to be connected to the Internet. And well, do you have time to look at all that in the circumstances under which you apply for a loan?" (Anonymous male, self-employed).

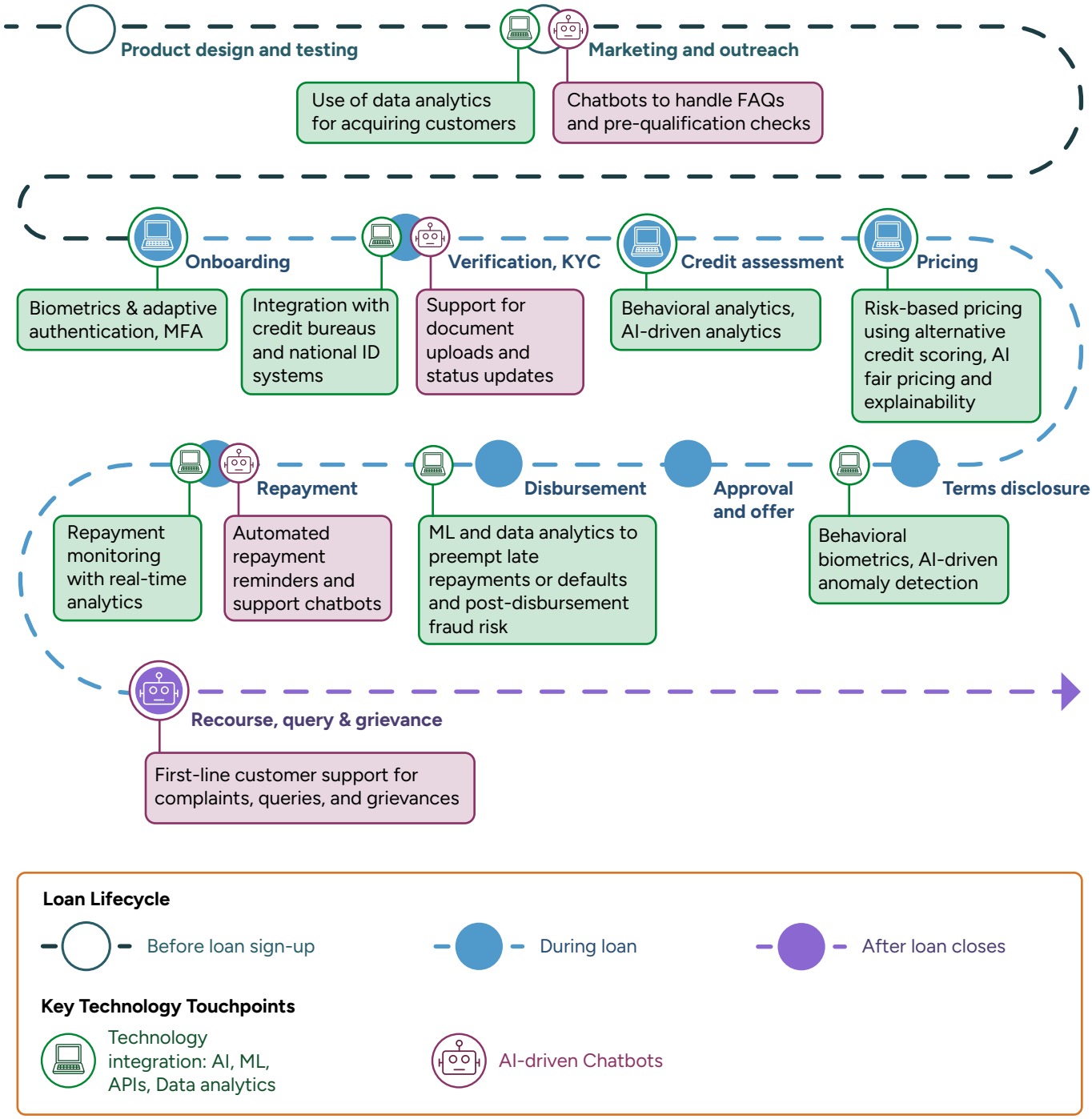
Sources: Duflos et al. 2023; Navarro et al. 2024.

FIGURE 9. **Provider life cycle stages involved in delivering digital credit**



Source: Authors, building on Stewart et al. 2018; D91 Labs N.d.; CGAP 2025b.

FIGURE 10. **Provider life cycle stages and technology touchpoints to address consumer risks in digital credit**



Source: Authors, building on Stewart et al. 2018; D91 Labs N.d.; CGAP 2025b.

The Fragmented Regulatory and Institutional Arrangements in Digital Credit

In a typical jurisdiction, a digital borrower may be directly or indirectly engaging with a range of credit services providers. Different authorities would have regulatory remits over all these entities, with disparate consumer protection rules and supervisory activities, which leave borrowers (especially vulnerable, unserved, and underserved segments) exposed to greater consumer risks that may lead to adverse outcomes. Figure 11 illustrates the different types of authorities (financial, telco/ICT, and general) that may fully or partially regulate and supervise different types of providers offering digital credit, leading to overlaps and gaps in institutional mandates.

Furthermore, several authorities may have different responsibilities for various actors in the digital credit ecosystem at different stages of the provider's life cycle. Authorities can set, enforce, and monitor compliance with responsible digital credit standards that shape consumer experiences, risks, and outcomes. Table 7 offers an example of the different types of authorities that may be involved in regulating or supervising different types of actors involved at different stages of the digital credit provider life cycle.

FIGURE 11. **Fragmented regulatory and institutional arrangements in digital credit**

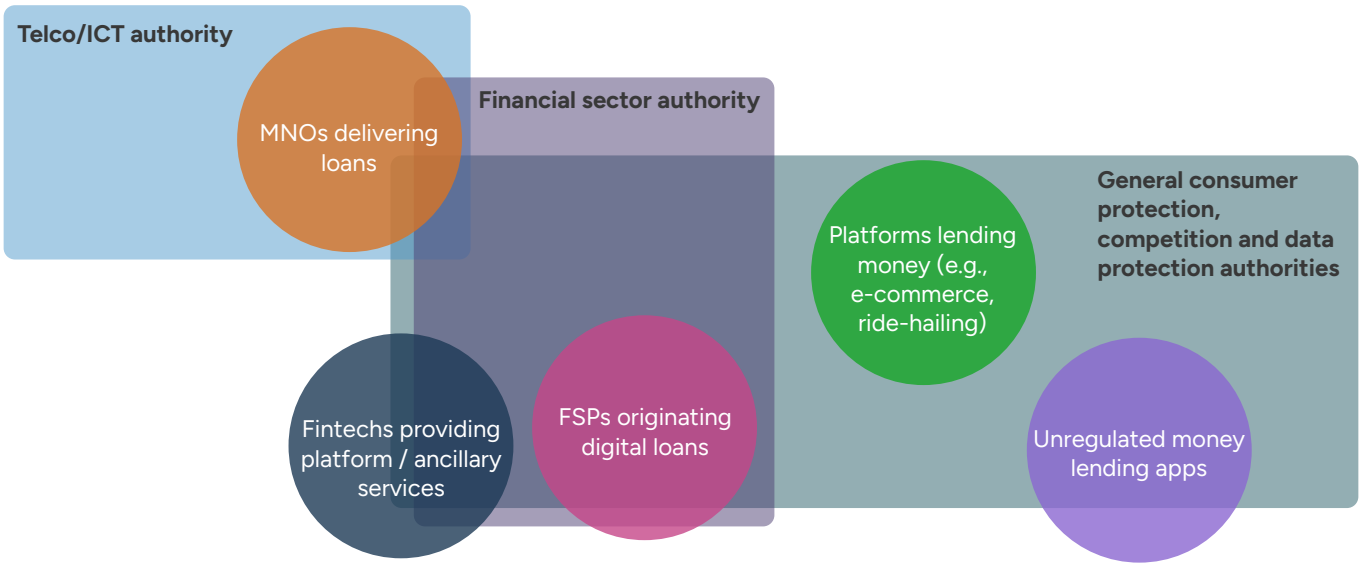


TABLE 7. **Regulatory and institutional arrangements and provider life cycle in digital credit**

Providers	Product design and testing	Marketing and outreach	Onboarding and verification	Credit assessment, pricing, approval, and offer	Terms disclosure	Disbursement	Repayment and credit reporting	Recourse, query, and grievance
Digital credit providers*	Financial sector authority (FSA)	FSA	FSA and financial intelligence unit (FIU)	FSA	FSA	FSA	FSA and consumer protection authority	FSA and consumer protection authority
MNOs		Telco and consumer protection authorities	Telco and data protection authorities, FIU			Telco authority and FSA	Telco authority and FSA	FSA, consumer protection, and telco authorities
Credit bureaus				FSA and data protection authority			FSA and data protection authority	
Supply chain distributors*		Consumer protection authority	Consumer protection and data protection authorities		Consumer protection authority	FSA and consumer protection authority	FSA and consumer protection authority	Consumer protection authority
Debt collection companies							FSA and consumer protection authority	FSA and consumer protection authority
Alternative data and credit score providers		Consumer protection, ICT, and data protection authorities		Consumer protection, ICT, and data protection authorities				Consumer protection, ICT, and data protection authorities
Technology infrastructure, cloud services	Consumer protection authority	Consumer protection, ICT and data protection authorities	ICT and data protection authorities, FIU	ICT and data protection authorities				Consumer protection, ICT, and data protection authorities

*May include fintechs, bigtechs, and other platforms.

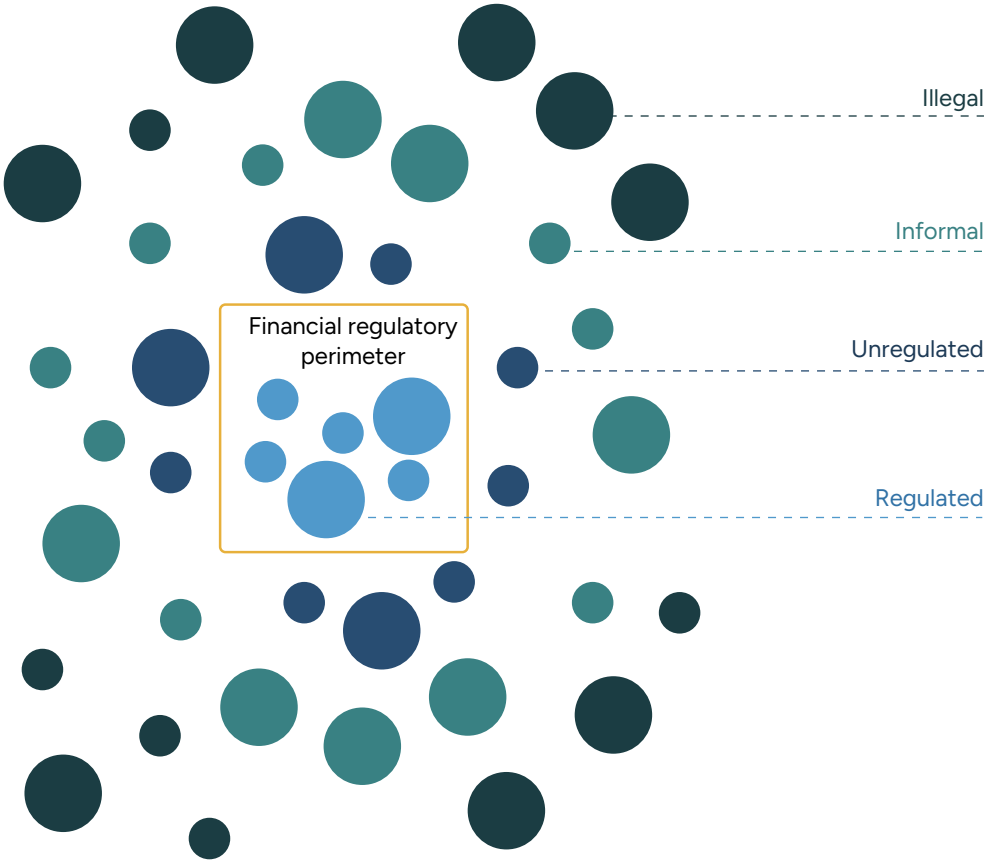
Source: Authors.

From a financial regulatory perspective, a digital lender may fit different categories depending on the applicable regulatory perimeter. Thus, a digital lender may be:

- **Regulated:** A lender covered by financial regulations or laws that include digital credit as a category of financial services, either explicitly or implicitly. The lender is licensed, registered, or approved by the banking regulator or another official agency responsible for regulating nonbank lenders.
- **Unregulated:** A firm offering digital credit to customers for its goods or services, beyond the reach of financial regulation but subject to other broader, general laws (e.g., consumer or commercial codes).
- **Informal:** An entity with or without legal status offering digital loans that fall outside the scope of law and regulation. This may be due to a regulatory gap, a transition phase to become a regulated lender, or a carve-out for the digitization of traditional credit groups (e.g., ROSCAs, VSLAs).
- **Illegal:** An entity offering digital loans in contravention of the law (i.e., not falling within one of the above categories), or because its lending business does not conform to regulation. An illegal lending app may engage in criminal activities (e.g., loan sharking, fraudulent scams), or may not have any business in place and use the app only as a facade.

All these perimeters may coexist in a jurisdiction as part of the evolving landscape. This may lead to different borrower experiences, risks, and outcomes depending on the lender they engage with, as well as the different standards for different providers. It's important for authorities to not only assess the implications of these different perimeters but also to distinguish them when communicating about digital lenders to avoid misunderstandings and misperceptions (e.g., conflating criminals with informal or unregulated lenders). It's also important to differentiate between lenders and third parties, as well as the roles different authorities play in relation to these actors.

FIGURE 12. **Financial regulatory perimeter of digital lenders**



SECTION III

Frontier Solutions For Responsible Personal Digital Credit: Authorities

GOVERNMENT AUTHORITIES (including financial and nonfinancial sector authorities) have a critical role to play in addressing the key consumer risks arising in digital credit provision, i.e., consumer protection risks. Digital loans may be covered by bespoke rules, but are more often regulated as consumer credit, money lending, payday loans, or microcredit. Enforcement of these rules may fall under different actors, namely:

- A specialized agency (e.g., the United States' Consumer Financial Protection Bureau [CFPB]),
- A unit within the central bank or a unified financial regulator (e.g., the Australian Securities and Investments Commission [ASIC]),
- The conduct regulator in a twin peaks system (e.g., the United Kingdom's Financial Conduct Authority [FCA]), or
- A general consumer protection authority (e.g., Nigeria's Federal Competition and Consumer Protection Commission [FCCPC]).

In most of the jurisdictions reviewed, the prudential authority is not involved unless digital loan risk is held on a bank's balance sheet.

Authorities address consumer risks through various informal and formal interventions, including industry collaborations and commissioning or delegating work to other ecosystem actors, such as consumer associations and research organizations (see Section V). Collaboration and coordination with telecommunications, ICT, and data protection agencies is vital. This includes regulatory consistency across agencies.

An effective approach to consumer risks comprehensively addresses all phases of risk management:

Risk Identification: A supervisory role over multiple types of FSPs, including the power to monitor the entire digital credit market and request information from individual regulated entities to assess consumer risks and outcomes.

Risk Prevention: A regulatory role, setting and enforcing rules to empower consumers throughout their credit journey and avert consumer harm, addressing issues such as overly aggressive and misleading marketing, unsuitable products, unfair terms, bias, nontransparency, overindebtedness, data misuse, and abusive loan collection.

Risk Mitigation: Providing means to contain risks incurred, e.g., through adequate dispute resolution schemes, treatment of reckless or predatory lending, and compensation to fraud victims.

Risk Resolution: Providing a pathway to eliminate the impact of negative outcomes on consumers, e.g., through mechanisms to address personal insolvencies.

Solutions led by authorities include some that cut across all types of risks and issues, such as ecosystem collaboration, entry controls into the regulated market (i.e., registration and licensing), and market monitoring tools. Most solutions focus on regulations addressing key financial consumer protection elements, including disclosure, product governance, credit scoring and reporting, prevention of lender abuses, and complaint redress. Other solutions provide complementary protections, such as fraud compensation and consumer safeguards in the event of provider insolvency (see Table 8).

TABLE 8. **Authority solutions by phase of risk management cycle and consumer risk**

Authority Solution	Risk Management Cycle				Consumer Risk and Issue
	Identification	Prevention	Mitigation	Resolution	
1. Ecosystem collaboration	●	●	●	●	All risks and issues
2. Registration		●			
3. Licensing		●			
4. Adequate disclosure before, during, and after sales of digital credit		●			Lack of transparency
5. Credit information: scoring and reporting		●			
6. Positive friction		●			Behavioral vulnerabilities
7. Product governance		●			Unfair treatment
8. Data protection		●			Data misuse
9. Combating fraud	●	●	●		Fraud
10. Digital credit market monitoring	●				All risks and issues
11. Fraud victim compensation			●		Fraud
12. Effective redress mechanisms			●		Inadequate redress
13. Prevention of predatory lending and abusive debt collection		●	●		Overindebtedness
14. Personal insolvency				●	
A Call to Action for Supervisors, Regulators, and Policy Makers					
A Call to Action for Funders					

Responsible Digital Credit Solutions by Authorities

Solution 1: Ecosystem Collaboration

All risk management phases • All consumer risks and Issues

WHY? (THE PAIN POINTS)

The digital credit landscape is increasingly complex, with diverse lenders partnering with third parties at different stages of the borrower journey. This complexity extends to regulation, where multiple financial and nonfinancial authorities operate in silos. For example, central banks supervise banks, consumer protection agencies monitor fintech marketplaces, and telco regulators oversee MNOs delivering loans. Meanwhile, competition and data protection authorities assess broader market practices. Consumers face risks from fraudulent apps, overindebtedness due to multiple loans, and confusion over where to report complaints.

WHAT? (THE SOLUTIONS)

As indicated on page 20, digital lenders may operate outside the regulatory perimeter of financial authorities. Collaborative approaches can be taken to expand such a perimeter and bring more—if not all—digital lenders under the remit of financial authorities:

- **Expansion of the perimeter to bring digital lenders under direct regulation** (e.g., see example from Malaysia below). This entails establishing an activity-based framework covering all providers of digital credit, including banks, nonbank credit institutions, fintechs and digital lending apps. This framework should set clear financial consumer protection and market conduct rules tailored to the different types of providers. It should also assign mandates to one or more authorities, which may include general, nonfinancial regulators taking on financial consumer protection responsibilities. Coordination among these authorities is essential to minimize regulatory overlaps and gaps. Lenders that fall within the expanded perimeter but do not comply with registration and licensing requirements may be sanctioned or closed.
- **Indirect regulation** (e.g., through rules on outsourcing by a regulated institution, see example from India on page 29). When a regulated FSP delivers digital loans through a partnership with an unregulated (nonfinancial) business, such as an e-commerce platform, the loans are subject to the financial authority's outsourcing regulations. This action will benefit from collaboration with general authorities responsible for supervising such nonfinancial businesses, enabling improved knowledge sharing, coordinated supervision, and stronger enforcement.
- **Coordination and collaboration among regulatory agencies** (e.g., see Nigeria and the Philippines below). This includes signing an inter-agency memorandum of understanding or forming a multistakeholder task force, working group, or informal collaboration forum. This should include nonfinancial authorities with specialized mandates across economic sectors (e.g., consumer protection, telco/ICT, or data protection authorities) that can share key insights on market developments and emerging consumer risks in digital credit. Any collaboration or information sharing should align with the statutory mandates and legal discretion of the participating agencies.

Additionally, there are complementary, **nonregulatory measures** that could be taken –that are discussed further below (see Sections IV and V). These include:

- Industry codes of conduct with self-regulatory monitoring and enforcement mechanisms led by industry associations.
- Work with associations of fintechs or digital lenders to frame guidance in key areas for digital app-based lenders.
- Consultations with consumer associations to gather insights on consumer risks and inputs for guidance, and collaboration on consumer communications.

These solutions emphasize coordinated action or "ecosystem collaboration," in which authorities, providers, and other key stakeholders work together to develop, implement, and monitor solutions that are more impactful than isolated efforts. Effective collaboration reduces regulatory gaps and overlaps and leads to better outcomes for consumers. To be meaningful, such collaboration must go beyond symbolic gestures. It requires sustained communication, shared responsibilities, and tangible joint actions.

Ecosystem collaboration helps ensure seamless coverage of consumer risks in digital credit. At the government level, this requires consistent collaboration among financial sector, telecommunications, ICT, and consumer protection agencies. These authorities can work together to develop, implement, and monitor solutions that reduce gaps, overlaps, and inconsistencies. For such coordination to be effective, a clear lead authority, designated by legislation or formal agreement, should guide the process, supported by binding commitments of the other actors.

CHALLENGES AND LIMITATIONS

Collaboration can be affected by low levels of trust, negative past experiences, misaligned goals, unclear mandates, weak communication, and inadequate coordination structures. Identifying a committed champion, such as the financial sector authority, and securing clear commitments from all stakeholders can help address these challenges and strengthen collaborative efforts.

Examples

Malaysia's Consumer Credit Oversight Board Task Force was launched in 2021 by the Ministry of Finance, Bank Negara Malaysia, and Securities Commission, in collaboration with the credit cooperative regulator and several ministries, to develop a regulatory and supervisory framework and centralized redress mechanism for nonbank credit providers and credit service providers (e.g., BNPL providers, debt collectors) (Consumer Credit Oversight Board Task Force n.d.).

In **Nigeria**, in 2022, the FCCPC together with the Independent Corrupt Practices Commission, the National Information Technology Development Agency, and the Central Bank, formed the Joint Regulatory and Enforcement Task Force to rein in digital credit apps, including through regulatory guidelines (FCCPC 2022a) (see Appendix I).

In the **Philippines**, the central bank, deposit insurer, securities regulator, and insurance commission formed the Financial Sector Forum in 2004 (Funa 2017). The Forum has issued consumer protection guidelines for fintechs, including digital lenders, and worked with industry associations on customer-centricity campaigns.

Solution 2: Registration of Digital Lenders

Risk prevention • All consumer risks and issues

WHY? (THE PAIN POINTS)

Registration is a foundational step in applying regulations to providers. It certifies that a credit-only FSP is permitted to lend (as its primary business) in a situation where it otherwise might not be allowed, or the legal status is unclear. Registration helps clarify the legal status of lenders, provides assurance to consumers, and applies minimum standards to lenders' operations, ownership, and management. It also enables authorities to exert basic oversight, such as control over entry, monitoring, and light-touch supervision, including tracking, reporting, spot checks, and complaint analysis.

WHAT? (THE SOLUTIONS)

Establish a legal or regulatory requirement for providers to register with a specific authority to offer digital credit as a principal business activity. Registration requirements should include:

1. Basic institutional information (e.g., location, legal status, capital structure, officers, and board)
2. Periodic operational information (e.g., financial statements, scale and portfolio quality indicators) and details on the characteristics, terms, and costs of products offered.

Providers must also comply with consumer credit regulations, including rules on loan terms, transparency and disclosures, fair collection practices, credit reporting, and complaints handling. Registering authorities should maintain publicly accessible databases to allow consumers to verify whether a digital lender is registered and in good standing.

CHALLENGES AND LIMITATIONS

Registration can be effective in environments where strong consumer protection laws or regulation and enforcement already exist. While less burdensome than licensing, registration also provides more limited oversight. It affords the regulator less ex ante control and enforcement power over the FSP, which may make it less suitable where digital lenders are scaling up fast

Examples

Nigeria's Interim Guidelines for Digital Lending (2022): In response to abuses by digital lenders, many of them unregulated, Nigeria formed a multi-agency task force to develop regulatory guidelines. The consumer protection agency issued the guidelines, which include a registration requirement. Digital lenders must:

- Provide basic information on the identity of stakeholders, accounts, funding sources, affiliates, lending methodology, data audit, and list of apps (max. 5).
- Report any changes to the regulator (FCCPC 2022b).

South Africa's National Credit Regulations (2006): The National Credit Regulator and its rules were adopted in response to rampant loansharking that carried over from the apartheid period. The registration process requires lenders to submit information including ID, tax number, products offered, loan book value and numbers, business premises, staffing plan, administrative procedures, and business records and criminal records (Republic of South Africa 2015). This registration process has helped the National Credit Regulator monitor all digital lenders.

or need closer monitoring due to a history of consumer abuses and defaults. Ideally, supervisors should monitor registered FSPs to identify when certain players, subsectors, products, or delivery channels evolve to a point where the risks they pose are material, and licensing may become necessary. Industry associations can also support the registration process and contribute to self-regulation, including enforcing codes of conduct (see Section IV, Solution 12).

Solution 3: Licensing of Digital Lenders

Risk prevention • All consumer risks and Issues

WHY? (THE PAIN POINTS)

Licensing is typically reserved for prudentially regulated institutions. However, the rapid growth of the digital credit industry, along with its expanding client base and subsequent increases in consumer risks, may justify licensing requirements for digital lenders in some contexts. Licensing can help safeguard consumers against widespread reckless lending, defaults, and overindebtedness, particularly among vulnerable consumers, while also helping to mitigate contagion risks to the broader financial sector.

WHAT? (THE SOLUTIONS)

Licensing imposes more stringent requirements than registration, including capital, business plans, fit and proper assessments, internal controls, operational policies, and IT systems. These requirements are more costly and time consuming but serve to restrict market entry to qualified providers, helping to conserve supervisory resources. Licensing also allows for more intensive oversight, including audits, reporting, and on-site inspections. With licensing, the government takes on a fiduciary duty and signals the public that it will effectively supervise the FSP. In digital credit markets, this typically means applying existing licensing regimes (e.g., for credit institutions in general) rather than creating bespoke licenses for digital lenders.

CHALLENGES AND LIMITATIONS

Licensing may not be necessary for all credit-only providers, especially where there is no prudential risk, i.e., they do not take funds from the public. In such cases, consumer protection codes and ex post enforcement may be sufficient. Licensing may also be burdensome for both lenders and regulators, especially for small credit-only providers, and in markets where the sector is at an early stage of maturity.

Examples

Australia's National Consumer Credit Protection Act (2009) and Regulations (2010): These rules create a unified personal credit regime with stringent requirements for consumer lenders, including mandatory **licensing** of virtually **all consumer credit providers** (Australasian Legal Information Institute [AustLII] 2010). License applicants must provide key documentation on, e.g., fit & proper criteria, adequate resources, staff training and oversight, compensation plan, risk management, and dispute resolution. ASIC, the securities regulator, enforces the rules, monitoring compliance with periodic checks.

India's Guidelines on Digital Lending (2022): The Reserve Bank of India (RBI) issued these guidelines as a response to digital lender abuses and fake apps. The guidelines define digital credit, **regulate digital lending by all FSPs licensed** by the RBI, and **apply "indirect" regulation** to third-party intermediaries and actors handling digital credit activities outsourced by licensed FSPs (RBI 2022a). Digital lenders must have a Financial Institution license, but there is no bespoke licensing for digital lending.

Kenya's Digital Credit Providers Regulations (2022): The rise of digital credit in Kenya during the 2010s led to rampant abuses, defaults, and overindebtedness. Initial emergency measures led to the adoption of regulatory guidelines that require **licensing of digital lenders not already licensed** as banks or other FSP types and set standards for governance, lending practices, consumer protection, and credit information sharing (Central Bank of Kenya [CBK] 2022). The **Business Laws (Amendment) Act (2024)** extended the Central Bank's authority and the credit licensing regime to all non-deposit taking credit providers (Republic of Kenya 2024).

Solution 4: Adequate Disclosure Before, During, and After Sales of Digital Credit

Risk prevention • Lack of transparency

WHY? (THE PAIN POINTS)

In a highly competitive digital lending environment, providers may prioritize rapid growth and short-term profits by engaging in marketing and sales practices that overstate loan benefits and obscure credit costs and risks. As a result, information presented in advertisements, notices, point-of-sale, and other disclosures is often incomplete, inaccurate or misleading, or difficult to understand, especially on mobile devices. This disproportionately affects underserved consumers, who may face lower financial and digital literacy levels and are more vulnerable to deceptive practices. Research shows that lack of transparency is linked to lower repayment rates (Izaguirre and Mazer 2018). While civic pressure and codes of conduct may partly address the problem, public authorities play a critical role in setting minimum standards, preventing abuse, and ensuring information is consistent, comparable, and accessible across the sector. While disclosure is a concern in every kind of lending, the speed of approval, automation, and reliance on electronic interfaces pose greater challenges.

WHAT? (THE SOLUTIONS)

Regulatory frameworks on disclosure aim to ensure that consumers clearly understand key digital credit terms and conditions (T&C) throughout the borrower journey. Effective disclosure rules typically address the following:

1. **Content:** Rules require prominent disclosure of T&C, with total cost metrics, a clear breakdown of costs (such as finance charges and third-party fees), and provisions on changes and penalties. The language must be simple and comprehensible to all consumers.
2. **Timing:** Rules require full disclosure **before** a loan is contracted, while prohibiting deceptive ads and notices. The periods **during** and **after** the agreement is made are also covered, ensuring that T&C remain consistent, and any changes are clearly noted and explained.
3. **Format:** Rules mandate plain language and standardized presentation, while requiring disclosure of key T&C in the same channel used for the transaction. User interfaces must be user-friendly and easy to navigate, and "dark patterns" (user interfaces designed to deceive or nudge users into making unintended, potentially harmful choices) are prohibited. Lenders are encouraged to use layering to facilitate understanding, and use behavioral insights to encourage consumers to engage with information. Lenders must explain the T&C orally upon request or when deemed necessary based on a customer's circumstances.[3]

CHALLENGES AND LIMITATIONS

Mobile interfaces often limit consumers' ability to access and understand full T&C. Key information may be buried on different pages, screens, or links—which may not always be easy to find or navigate. Complex presentation formats and manipulative design features, such as "dark patterns" can confuse consumers or lead them to unsuitable products. Low digital and financial literacy means that improving disclosures may have limited impact unless paired with consumer education.

Examples

Content: In the **EU**, consumer lenders must disclose all key information—including credit terms, rights, duties, penalties, and bundled services with opt-ins or opt-outs—on a standard form prior to entering an agreement. Consumers have a **right to receive adequate explanations and human intervention** before agreeing (European Union 2023a).

Format: The EU prohibits deceptive **"dark patterns"** in financial contracts concluded at a distance (where they have been most prevalent). Electronic display of precontract information must be designed in a way that avoids confusion and should use **"layering"** to assist understanding (European Union 2023b).

Content: The **Hong Kong Monetary Authority** (HKMA) issued a circular in 2022 strengthening guidelines on **BNPL** products, including on disclosure, chargebacks, and creditworthiness assessments. In marketing a BNPL product, lenders must disclose that it is a "credit product" (HKMA 2022).

Format: HKMA's circular on consumer protection in digital marketing activities requires FSPs to ensure that all advertising and promotional materials are fair and reasonable and do not contain misleading information.

3 Where key information is provided upfront with cross-references or links to further detail.

Examples (continued)

Content: The **United Kingdom's Financial Conduct Authority's "consumer understanding" outcome** requires providers to ensure that their communications meet the customers' information needs, i.e., are likely to be understood and equip them to make decisions that are effective, timely, and properly informed (FCA 2022). Thus, all FSPs must test, monitor, and adapt communications to support understanding and optimal outcomes for customers.

Timing: Kenya's Competition Authority found that DFS providers were not disclosing the cost of transactions until after the consumer accepted the transaction via their mobile device (Nkhonjera 2017). The authority issued guidelines requiring all DFS providers to disclose all applicable charges to customers for any mobile money transaction (including microloans, money transfers, and microinsurance) prior to the transaction's completion (see Appendix I).

Format: In **Portugal**, digital lenders must prominently present information on the basic product features and other elements deemed relevant, such as fees and expenses, on the main screen or webpage of the marketing platform, using larger characters, information boxes, pop-ups, cost simulations, overviews, or other similar means. Providers also must **assist customers to obtain further information** by making available tools such as a hotline or live chat, chatbot, or other interactive tools (Banco de Portugal 2020).

Solution 5: Credit Information: Scoring and Reporting

Risk prevention • Lack of transparency

WHY? (THE PAIN POINTS)

Many unserved and underserved consumers in developing countries lack formal credit histories, documented income, or access to traditional bank accounts. Standard credit reporting systems often exclude retail purchases on credit, utilities and rent payments, and small loans, thereby excluding a significant portion of the population from formal credit access. To fill this gap, lenders and credit scoring providers increasingly rely on algorithmic credit assessments using alternative data, such as mobile money transactions and balances, mobile phone activity, and social media data. While these models, often powered by AI/ML, can improve credit risk prediction when trained on robust datasets, they also introduce new risks. These include biased outcomes due to flawed design or data inputs; unfair discrimination based on gender, race, religion, etc.; and the inability of both consumers and regulators to assess algorithmic systems (Fernandez Vidal and Barbon 2019; Gambacorta et al. 2019).

WHAT? (THE SOLUTIONS)

Regulation of **algorithmic credit scoring** may:

- Apply fair treatment, transparency, and antidiscrimination standards to algorithms (e.g., US, see below).
- Require appropriate safeguards during development, testing, and deployment of algorithms to assess and manage consumer risks (e.g., Hong Kong, see below).
- Require regular auditing of algorithmic systems by external experts (e.g., EU, see below).

- Give consumers the right not to be subject solely to automatic processing and the right to request human intervention (e.g., EU, see below).

On the data input side, regulators have mandated (or strongly encouraged) comprehensive **credit reporting**. This means:

- Ensuring that all creditors report on credit balances (e.g., Australia, see below).
- Reducing or eliminating minimum threshold amounts for credit reporting (e.g., Bangladesh) (World Bank Group 2023).
- Full-file reporting, i.e., requiring all creditors, not only FSPs, to report both positive and negative information on borrowers (e.g., Australia, see below).

Some regulators have shielded vulnerable first-time borrowers and those experiencing hardship by setting thresholds designed to keep de minimis amounts out of the system or by restricting information on items such as delinquent medical bills (e.g., Kenya, see below). Some have also set maximum retention periods for credit information, giving consumers a clean slate after several years—important for small borrowers blacklisted due to past negative credit history (e.g., South Africa) (Campbell Attorneys n.d.).

CHALLENGES AND LIMITATIONS

Ensuring transparency in algorithmic credit scoring and decision–making is challenging, especially when models rely on "black-box" AI systems. In principle, regulators should assess the governance process, including design and implementation of algorithms used in lending, or at least their performance. However, regulators typically consider this task too complicated and technical and avoid taking action.

Input data from credit reports can be made fairer to small borrowers by regulations mandating comprehensive full-file reporting. But where this requirement brings in data on small borrowers, it may include defaults on "lend-to-learn" digital microloans, resulting in years-long unfair blacklisting of vulnerable customers.

Examples

Credit Assessment and Scoring: One of **HKMA's** consumer protection principles for the use of big data analytics and AI establishes that models shall produce fair outcomes using appropriate weights for all relevant variables and allow manual intervention to mitigate irresponsible lending decisions (HKMA 2024).

Credit Assessment and Scoring: The **US** Consumer Financial Protection Bureau (CFPB) enforces federal antidiscrimination law applicable to financial services (CFPB 2022a). The law requires companies to explain to applicants the **specific and accurate reasons for denying a credit application** or taking any other adverse actions, even if they were made using complex "black-box" algorithms. Creditors cannot use technologies in decision-making if they are unable to provide the required explanations (see Appendix I).

Credit Assessment and Scoring: In **India**, licensed FSPs (banks and nonbanking financial companies) must capture the economic profile of the borrowers (covering age, occupation, income, etc.), before extending any loan, with a view to **assessing the borrower's creditworthiness in an auditable way** (RBI 2022a).

Examples (continued)

Credit Assessment and Scoring: The **EU's** Artificial Intelligence Act (2024) provides risk-based AI regulation based on its potential to cause harm. It includes financial use cases, in particular creditworthiness assessments. Applications are categorized as low-risk, high-risk, and illegal (European Parliament 2024). The EU's General Data Protection Regulation (GDPR) stipulates the rights of consumers not to be subject to a decision based solely on automated processing, and to obtain human intervention, express their viewpoint, and contest the decision (European Union 2016). The European Central Bank's fintech credit licensing regime includes an assessment of the lender's capacity to audit outsourced credit scoring activities (European Central Bank 2018).

Credit Reporting: The Central Bank of **Kenya's** digital credit regulations provide that **no negative credit information** may be submitted to a credit bureau for any loan where the outstanding amount due is KES 1,000 (USD 7.50) or less (CBK 2022). This protects borrowers who received digital loans from "lend-to-learn" models, so that they would not be blacklisted for small delinquencies.

Credit Reporting: Australia's law on Comprehensive Credit Reporting requires all lenders to provide **full-file reporting** on consumer credit accounts, and enables credit bureaus to collect information on customers from **financial institutions and telephone companies** (World Bank Group 2023).

Solution 6: Positive Friction

Risk prevention • Behavioral vulnerabilities

WHY? (THE PAIN POINTS)

Automation increases speed and certainty in digital credit but eliminates key human interactions that can prevent consumers making poor credit choices. Inappropriate, unsuitable credit products may be pushed onto consumers through apps, SMS, or aggressive marketing without adequate explanations of features and costs of credit. Without human engagement, FSPs may miss important contextual information about a borrower's needs, constraints, and capability. This increases the likelihood that consumers will choose credit products that do not meet their needs.

Interposing delays and extra steps to improve digital credit outcomes is referred to as "positive friction" (Venkatesan et al. 2024). These friction points are designed to "intentionally slow users down" and help shift them from automatic thinking to more conscious choices that support positive consumer outcomes (Venkatesan et al. 2024).

WHAT? (THE SOLUTIONS)

Policy makers can promote positive friction through targeted consumer protection measures that include:

- **Pricing transparency and disclosure rules** that provide an extra review of T&C or comprehension tests to improve consumer understanding of their loan obligations (see UK example).
- **Cooling-off and withdrawal provisions** that help consumers reflect on their product choices and gather more information (see examples from EU and India).

- **Increased protections for vulnerable consumers**, such as preventing the use of a digital credit product during periods of susceptibility or for undesired behaviors (e.g., using digital loans for gambling—see example from Latvia).

CHALLENGES AND LIMITATIONS

Lenders find it more efficient and profitable to rely wholly on automation. This results in small, short-term, high-cost loans with rapid approval and rollover that may become delinquent. In the near term, positive friction imposes costs that providers and consumers would rather avoid, but in the longer term, it promotes a safer and more stable digital credit market with lower rates (and costs) of default.

Examples

EU: In the EU, consumer credit directives require the right of withdrawal from distance contracts to be made available to the customer through a prominent, easy-to-find "withdrawal function" on the FSP's interface. It must be comprehensible, clearly labeled, and continuously available during the withdrawal period (European Union 2023b). If a borrower withdraws, they must receive a confirmation receipt without delay (see Appendix I).

India: In India, during the cooling-off/look-up period, the borrower must be given an explicit option to exit the digital loan by paying the principal and proportionate APR without any penalty (RBI 2022a). Cooling-off periods are at least three days for loans repayable in seven days or more, and one day for loans repayable in fewer than seven days.

Latvia: The Ministry of Economy's 2015 amendments to the Latvian Consumer Rights Protection Law prohibit online consumer lenders from granting loans from 11 p.m. to 7 a.m. and require them to conduct a creditworthiness assessment based on sufficient information provided by the consumer (Likumi 1999).

UK: FCA experimented with positive friction techniques in investments, e.g., by adding checkboxes and questions to confirm customers' understanding of investment risks. While users improved their product understanding, some responded by dropping out and not completing the process (Venkatesan et al. 2024). The experiment informed FCA's Consumer Duty Guidelines, which require FSPs to prioritize consumer needs (FCA 2022).

Solution 7: Product Governance

Risk prevention • Unfair treatment

WHY? (THE PAIN POINTS)

Product governance refers to a lender's systems, procedures, and controls in place to design, approve, distribute, and assess financial products. In digital credit, product governance frameworks aim to ensure that loans are suitable, i.e., they meet the actual needs, objectives, and constraints of the consumer. These frameworks help embed good customer outcomes into the FSP's incentives, rules, and practices, to deter borrower harm and ensure that borrowers are treated fairly.

WHAT (THE SOLUTIONS)

Product governance standards place responsibility on the digital lender to:

- Understand the consumers in its target market and design digital credit products and services that meet the customers' needs;
- Assess customers carefully and only offer credit products that are affordable, fit for purpose, and adequately understood; and
- Have controls in place to verify whether credit products or services are operating as intended, and if not, to take action accordingly.

By holding lenders accountable for the suitability of their products, this approach avoids the need for regulators to prescribe specific terms for each type of digital credit product. Guidance may be issued to clarify or remind lenders that they must have effective processes for design, testing, review (including customer feedback), and approval of digital credit products and services before they are offered to the public. Product approval may be given by the lender's board or the authority.

Examples

Australia: Before entering a contract, a credit provider must assess the **suitability of the credit contract** or consumer lease and, if requested by the consumer, provide the assessment in writing (Australian Government 2024). The transaction may proceed only if it is "not unsuitable" for the consumer.

India: RBI's Digital Lending Guidelines address broader market incentives for suitable digital lending (RBI 2022a). They include a **prohibition on most forms of loan securitization**, which helps preserve lenders' stake in the performance of their loan portfolios (though it may constrain their access to cheap loanable funds) (RBI 2022b).

Singapore: Rules on unsecured credit to individuals took a "bright line" approach in 2013, imposing **ceilings on lending and debt service based on ability to pay** (Monetary Authority of Singapore 2017). Such income-based limits and credit check requirements aimed to ensure that individuals do not borrow beyond their means.

South Africa: Lenders must conduct an **"affordability assessment"** to understand a consumer's financial situation before entering into a credit agreement (Republic of South Africa 2006). The assessment helps determine if the borrower can responsibly take on more debt. Credit providers must consider the following factors: debt repayment history, financial means, prospects and obligations, understanding of risks and costs, and rights and obligations under the agreement (see Appendix I).

CHALLENGES AND LIMITATIONS

As a principles-based approach, assessing the quality of product governance processes and practices requires greater effort by lenders and supervisors than the more formalistic rule-based approach traditionally prevalent in low-income settings.

Solution 8: Data Protection

Risk prevention • Data misuse

WHY? (THE PAIN POINTS)

Digital lending models require intensive data gathering and sharing. Borrowers often do not know what or how data is being used and shared, nor can they easily discover and control how lenders or their partners use this data. The customer data handling procedures of digital lenders and their partners have often proven inadequate, with numerous cases of failure to ensure their due protection and security. Weak protection contributes to online fraud and client data misuse, including unauthorized charges, social engineering scams (e.g., phishing, spoofing), and social shaming.

WHAT? (THE SOLUTIONS)

Data Protection and Privacy Legislation. Data laws have been widely adopted, including in emerging markets and developing economies (EMDEs), driven by growing concerns over the collection, use, and sale of consumers' phone and internet data, for lending purposes. General data protection laws may be enforced by a data or consumer protection authority.

Data Protection Regulation specific to financial services may be issued by such general agencies or by a financial regulator under the privacy provisions of financial laws. Regulation includes provisions on disclosure, what data may be shared, consent by the consumer to specific data uses, limitation of data uses to specifically agreed purposes, consumers' access to their data, accuracy and security of the data, obligations of the data controller (e.g., the lender), and the consumer's right to withhold or withdraw consent. Collaboration among data, consumer protection, and financial authorities is often critical to ensure effective regulation.

Examples

India: Under the Digital Personal Data Protection Act, 2023, digital "consent managers" positioned between entities involved in the data exchange manage the flows of information, registering consent, automating the exchange, and protecting confidentiality (Burman 2023, Ministry of Law and Justice 2023). A government board approves the consent managers and handles disputes. RBI's Digital Lending Guidelines provide more specific standards, including restrictions on lenders' uses of consumers' mobile phone data (RBI 2022a).

The Philippines: The National Privacy Commission's guidelines on processing personal data for loans cover lenders and third parties. Mobile lending apps are barred from accessing personal information such as phone and social media contact lists (except for KYC purposes) to prevent unfair collection practices such as harassment and shaming. Lenders should provide just-in-time notices before obtaining consent and should provide information on how specified information will be processed (National Privacy Commission 2020) (see Appendix I).

CHALLENGES AND LIMITATIONS

Unlike conventional lending, digital credit is particularly vulnerable to a wide range of cybersecurity risks, which are expanding with the rapid adoption of smartphones and digital lending services. In many EMDEs, authorities often have limited capacity to identify and counteract these risks. Consent is broadly seen as ineffective in protecting consumers or limiting firms' use of their data (Medine and Murthy 2020). Yet customers are frequently asked to agree to complex data uses and flows they do not fully understand or cannot control. As a result, reliance on consent alone offers limited protection. New approaches aim to balance customer data protection with the need for data to flow throughout the financial system.

Solution 9: Combating Fraud

Risk identification, prevention, mitigation • Fraud

WHY? (THE PAIN POINTS)

The instant, automated, and remote nature of digital credit, and the gaps in app security, augment fraud risks. Digital credit is more exposed than conventional lending to the full range of consumer-harming cyber frauds, such as:

- **Social engineering scams**, e.g., phishing or spoofing (fake SMS or websites that mimic legitimate lenders' sites to harvest personal data), smishing or vishing (phishing via text or voice call), and QR code or mobile app frauds that promise easy access to digital loans.
- **Authorized push payment scams**, i.e., when a fraudster tricks a consumer into sending money to a criminally controlled account, for example, to pay a loan application or processing fee.
- **Identity fraud**, where a criminal gains control of a consumer's phone number or identity data through SIM swaps; biometric identity fraud where a fraudster breaches data storage to obtain copies of a consumer's biometric data (e.g., fingerprints, photos); or synthetic identity fraud where new identities are created by blending elements from different persons. Through identity fraud, fraudsters can then obtain new digital loans, renew them, or increase their amounts.

WHAT? (THE SOLUTIONS)

Regulatory provisions include rules on customer due diligence, data protection, and security standards applied to lenders, governance and risk management standards, and penalties related to financial fraud. Market monitoring can help authorities detect significant risks or occurrences of digital credit-related fraud that will inform regulations (see Section III, Solution 10).

Active collaboration among criminal investigators, prosecutors, and financial, data, and ICT authorities is essential to curbing digital loan-related fraud and other cybersecurity threats. This collaboration should include staff capacity building and participation in inter-institutional activities, an increase in information exchange, and leveraging initiatives (e.g., ICT authorities' SIM registration and authentication).

CHALLENGES AND LIMITATIONS

As digital credit is subject to rapid innovation and change, fraudsters are often at the cutting edge and pose a challenge to regulators who must keep pace to address new forms of fraud. Further, fraud spans all digital activities, so financial authorities must move beyond their typical silos and engage with telco, data, consumer, and judicial authorities.

Examples

Malaysia's National Scam Response Centre was established in 2022 as an operational center to coordinate rapid responses to online financial fraud. It involves the National Anti-Financial Crime Centre, the police, the central bank, the telco authority, FSPs, and telcos. Its hotline has received over 120,000 calls in two years, and its National Fraud Portal has helped FSPs and authorities rapidly identify, trace, and freeze stolen funds. In 2024, loan scams accounted for 15 percent of financial frauds reported to the police (Bank Negara Malaysia 2025; National Anti-Financial Crime Center n.d.).

Since 2023, the Central Bank of **Brazil** has required all authorized FSPs (e.g., payment providers, fintech lenders) to collect and share data on occurrences and attempts of fraud in payment, deposit, and credit transactions among FSPs within 24 hours of their identification. FSPs must report an incident description, suspected fraudsters, the affected FSP, the recipient account, and the account holder (Banco Central do Brasil 2023).

Solution 10: Digital Credit Market Monitoring

Risk identification • All consumer risks and issues

WHY? (THE PAIN POINTS)

Market monitoring shifts the focus of supervisory activities from individual lenders to the broader market and borrower experience. The shift enables authorities to gather early and in-depth insights into the borrowers' experiences, risks, and outcomes associated with using digital credit; proactively identify consumer risks and issues that require greater attention; track market developments, such as the use of new technologies and changes in borrower behaviors; and contribute to disseminating supervisory expectations to the industry, especially to lenders that do not consistently receive dedicated supervisory attention.

WHAT? (THE SOLUTIONS)

- Authorities can apply a range of quantitative (e.g., analysis of regulatory reports, phone surveys) or qualitative (e.g., mystery shopping, industry engagement) tools and techniques that can be used for several objectives (see Table 9).
- First-time use of these tools helps create a baseline to better understand, identify, and measure consumer risks, vulnerabilities, experiences, and results in digital credit. Periodic use allows monitoring, peer comparisons, and trend analyses that enable risk-based and forward-looking supervision of digital credit.
- In addition to authorities, consumer and research organizations (see Section V) as well as industry associations (see Section IV), can implement or pilot market monitoring tools, directly or in partnership with other ecosystem actors.

TABLE 9. **Market monitoring tools can support different supervisory objectives**

Supervisory objective	Analysis of regulatory reports	Analysis of complaints data	Social media monitoring	Analysis of consumer contracts	Mystery shopping	Industry engagement	Thematic reviews	Phone surveys	Consumer advisory panels
Monitor indicators of consumer risk	✓	✓	✓					✓	
Monitor overindebtedness	✓	✓	✓			✓	✓	✓	
Monitor sales and marketing practices		✓		✓	✓	✓	✓		✓
Monitor products in the market	✓		✓	✓	✓	✓	✓	✓	✓
Monitor consumer complaints	✓	✓	✓	✓			✓	✓	✓
Monitor risks by gender	✓	✓		✓	✓		✓	✓	✓
Monitor consumer sentiment toward FSPs			✓		✓			✓	✓
Monitor emerging consumer issues			✓	✓	✓	✓	✓	✓	✓

Source: Izaguirre et al. 2022a.

CHALLENGES AND LIMITATIONS

- **Data Quality Issues and Resource Intensiveness:** Analyses of regulatory reports and complaints demand strong efforts in adequately designing and developing reporting templates, using standardized definitions, and reviewing data submission and validation, all in close collaboration with providers. Mystery shopping demands high-quality interviewer training to ensure that responses are adequately recorded and not influenced by personal bias.
- **Compliance Costs:** Regulatory and complaints reporting requires a lot of data and may be too burdensome for authorities and lenders, especially small ones with legacy systems. The more granular the data requested, the more costly the solution. Regulatory technology (regtech) can help reduce long-term costs, but also entails high upfront costs.
- **Limited Depth:** Market monitoring data is typically restricted to the formats, questions, and prompts utilized at the tool design stage. Due to cost and resource constraints, they may have needed to undergo prioritization and simplification, but data depth can be increased over time.
- **Unrepresentativeness:** Tools like mystery shopping, focus groups, consumer panels, and social media monitoring are not statistically representative. Still, they offer useful anecdotal insights into borrower experiences, risks, and outcomes.

For more information on phone surveys and social media monitoring, which may be commissioned to, or carried out in partnership with research organizations, see Section V.

Examples

Mystery Shopping: The **European Banking Authority** organized a shopping exercise with five authorities and thirty-seven FSPs to better understand the consumer experiences and risks of using a digital channel (or visiting a branch) to obtain a small personal loan (European Banking Authority 2023). The exercise revealed some lenders automatically increase the total credit amount to include fees without the consumer's consent, do not provide adequate precontractual information, provide noticeably less information on digital channels than in branches, or rarely provide product-specific information via online chat. Supervisors were advised to investigate further, discuss with lenders, and issue guidelines.

Analysis of Transaction Reporting Data: The **Bank of Tanzania** was concerned about the rapid growth in consumer credit, including digital. To address overindebtedness concerns, they worked with CGAP, Financial Sector Deepening (FSD) Africa, and FSD Tanzania, to pilot an ad hoc request of transactional and demographic data from digital lenders (CGAP 2022b). They gathered data on over 20 million loans disbursed over almost two years and identified a range of consumer risks, which informed regulatory improvements.

Solution 11: Fraud Victim Compensation

Risk mitigation • Fraud

WHY? (THE PAIN POINTS)

Despite preventive measures, borrowers may still fall victim to scams and frauds that cause significant monetary losses. The digital sphere has seen the emergence of new types of fraud that are associated with unregulated and illegal lenders, which may significantly harm consumers and generate mistrust in the digital credit market. It is key for authorities to take action to mitigate the effects of this fraud on customers and preserve trust in the financial system.

WHAT? (THE SOLUTIONS)

- **Regulations clearly establishing the legal responsibilities of digital lenders, third parties, and customers, and the methods by which fraud victims will be compensated.** These provisions typically appear in clauses that apply broadly to fraud, consumer protection, consumer finance, or electronic payments—the latter because digital credit-related frauds are perpetrated via electronic payment systems and the associated communications networks.
- **Mechanisms to create compensation funds for fraud victims** in select cases can help mitigate the effects on consumers and encourage digital lenders and other firms in the digital ecosystem to invest strongly in fraud prevention measures.

CHALLENGES AND LIMITATIONS

The difficulty of holding fraudsters accountable makes it even more important for authorities to collaborate in setting up mechanisms to allocate responsibility and funding for victim compensation—a heavy lift for most resource-constrained countries.

Examples

US: The Dodd-Frank Act provides for a Civil Penalty Fund as part of CFPB. The Fund's governing regulation (the Consumer Financial Civil Penalty Fund Rule), adopted in 2013, empowers the CFPB to compensate victims of federal consumer finance law violations, including illegal online lending practices (National Archives 2013).

UK: The Payment Systems Regulator now mandates full reimbursement of up to USD 112,000 for victims of authorized push payment (APP) frauds, including loan fee scams. The sending firm shares liability equally (50/50) with the receiving firm. The fraud victim must be reimbursed within five business days (with limited exceptions), although grossly negligent consumers may be denied compensation. Consumers may seek redress with the Financial Ombudsman if unsatisfied with the settlement (Payment Systems Regulator 2023). This mechanism superseded the Contingent Reimbursement Model Code governed by the Lending Standards Board from 2019 to 2024.

Solution 12: Effective Redress Mechanisms

Risk mitigation • Inadequate redress

WHY? (THE PAIN POINTS)

Redress is often inadequate or insufficient where digital credit is delivered by mixed partnerships or where no regulated provider is involved. Many complaints may be dismissed based on technicalities due to complex or unclear procedures. As a result, borrowers may face unsolved problems, including monetary and privacy losses, and remain affected by abusive practices that go unaddressed.

WHAT? (THE SOLUTIONS)

The law or regulation may require FSPs to establish complaints handling policies, procedures, and systems that allow for consumers to appeal. At a minimum, these standards for internal complaints-handling units include:

- Setting a maximum number of days for resolving complaints.
- Providing system access through a range of channels (including the one used to extend the loan), e.g., phone, email, website, social media, along with clear instructions on how a consumer may submit a complaint.
- Maintaining detailed and up-to-date written records of all complaints and making them available to the supervisor.

While redress regulations are often not specific to digital credit, some require that FSPs offer redress through the same channel used to deliver the product. In some cases, existing regulations have been amended to address complaints in the digital ecosystem.

Legislation may also establish alternative dispute resolution mechanisms for financial sector authorities, consumer protection agencies, or data protection authorities—providing an external channel for handling complaints and appeals.

CHALLENGES AND LIMITATIONS

Redress mechanisms in digital credit may prove inadequate for several reasons:

- Limited knowledge about how and where to complain and resolve complaints.
- Lack of appropriate channels for correcting errors in credit reporting.
- Lack of recourse against some unauthorized activities, such as data sharing or abusive collection practices.
- Confusion over responsible parties in some digital credit models involving several providers.

Examples

India: Digital lenders must ensure that they and their partners have a redressal officer, adequately disclose this information to borrowers, and resolve complaints within 30 days (RBI 2021). In the second instance, customers of FSPs and credit information companies may go to RBI's Integrated Ombudsman Scheme, which has simplified its processes and enables customers to contact a centralized platform using several mediums (e.g., physical mail, calls, emails) in English as well as ten local languages.

Australia: The Australian Financial Complaints Authority (AFCA) was established in 2018 as an independent, nonprofit dispute resolution scheme for lending, deposits, and other products (AustLII 2018). Credit licensees, credit representatives, and debt management firms must join this scheme.

Brazil's online dispute resolution platform, managed by the National Consumer Secretariat, enables consumers and businesses to resolve disputes remotely (UNCTAD 2024). Fintech lenders participate in this platform, used by the Central Bank to inform its work (see Appendix I).

Solution 13: Prevention of Predatory Lending and Abusive Debt Collection

Risk prevention, mitigation • Overindebtedness

WHY? (THE PAIN POINTS)

Digital credit can increase the risk of borrower overindebtedness (see Figure 3), especially when predatory or reckless business models and abusive debt collection practices are in place. These issues increase consumer harm. While consumer credit regulations are generally designed to protect individual retail customers, additional safeguards are often needed to ensure vulnerable digital credit consumers in low-income settings are adequately protected.

WHAT? (THE SOLUTIONS)

- Regulations that identify cases where the lender is responsible for granting credit in an irresponsible manner.
- Regulations on responsible debt collection methods, outlawing social media shaming, harassment, threats of violence, etc.

CHALLENGES AND LIMITATIONS

Lenders' incentives for misconduct are strong, while victims' motivation to complain is weak, and authorities' resources for investigation and enforcement are often inadequate. Further, external debt collectors are often outside the financial regulatory perimeter.

Examples

Predatory Lending: South Africa's National Credit Act prohibits reckless lending, i.e., a loan where the lender fails to conduct an affordability assessment or enters a credit agreement even though evidence indicates that: i) the consumer did not generally understand or appreciate the risks, costs, or obligations under the proposed credit agreement; or ii) entering into that credit agreement would make the consumer overindebted. Courts can suspend or restructure reckless loans or refer them to a debt counselor for informal settlement (Republic of South Africa 2006).

Predatory Lending and Debt Collection: Uganda's Digital Lending Guidelines prohibit lenders from charging a default interest penalty that exceeds half the initial interest rate at the time of the loan offer (Uganda Microfinance Regulatory Authority 2024). They also prohibit improper debt collection tactics and conduct that harasses, oppresses, or abuses any person in connection with the collection of debt. FSPs must also identify their collection agents in advance (see Appendix I).

Debt Collection: In **Nigeria**, the Central Bank—along with the ICT, anticorruption, and consumer agencies—formed the Joint Regulatory and Enforcement Task Force to rein in digital credit apps engaged in abusive debt collection practices and use of customer data, as well as charging unacceptably high rates to customers (FCCPC 2021).

Solution 14: Personal Insolvency

Risk resolution • Overindebtedness

WHY? (THE PAIN POINTS)

Insolvency occurs when the individual (or solely owned MSE) is unable to pay their debts as they become due because they do not have money available for repayment or their debts exceed their assets—i.e., they are insolvent.

WHAT? (THE SOLUTIONS)

- Debt advisors and counselors who evaluate the borrower's situation and recommend the best actions to take at a personal finance level and with creditors.
- Bankruptcy or insolvency regimes with simplified procedures for very small businesses or individuals, which usually entail a legal filing and court procedure that determines how an insolvent person works out unpaid obligations with creditors. (World Bank forthcoming.)
- Interim ad hoc procedures to provide borrowers with a temporary reprieve from creditor action.

CHALLENGES AND LIMITATIONS

Although bankruptcy regimes have been established for businesses in many jurisdictions, there is limited experience with effective debt resolution regimes in EMDEs. Past experiences with debt forgiveness measures that affected the repayment culture in EMDEs have demonstrated the importance of developing well-structured personal insolvency regimes. Additional concerns include the limited capacity of judicial officials to manage these newer, more complex cases involving personal finance.

Examples

US bankruptcy law provides for an orderly resolution of insolvency claims for individuals (US House of Representatives 1978). It offers comparatively strong formal protections to debtors and a fair and open resolution process for creditors. An individual debtor may seek liquidation or debt restructuring. Upon filing, legal debt collection is paused. The accompanying rules on exemption (at state and federal levels) allow the debtor to retain a share of their property. The CFPB also published guides for borrowers on how to work with credit counselors and the risks of contacting debt settlement companies.

India's 2016 Insolvency and Bankruptcy Code includes a "Fresh Start" process for low-income individuals (Ministry of Law and Justice 2016).[a] Upon filing, it provides for an interim moratorium that halts any pending legal action toward debt recovery and forbids creditors from initiating any such action against the debtor. The process provides a time-bound framework for debtors to negotiate debt restructuring. The parties also have a right to appeal.

a This part of the Code is not yet in effect due to legal challenges.

A Call to Action for Supervisors, Regulators, and Policy Makers

Government authorities can strengthen consumer protection by collaboratively developing customer-centric solutions that address gaps, conflicts, and ambiguities in the regulatory and supervisory framework. This requires taking action across the following areas:

- Ensure that the appropriate regulatory authority has clear jurisdiction over personal digital credit, with necessary supervisory and enforcement powers.
- Adopt a customer-centric view of responsible lending into regulation and supervisory policies and manuals. This includes recognizing the different stages of the digital borrower journey, the characteristics and vulnerabilities of digital borrowers (especially those who repay late), and the types of risks and outcomes they may face.
- Use technology and both demand and supply-side tools to monitor the digital credit market. Market monitoring will help identify and assess consumer risks and outcomes, and inform subsequent regulatory and supervisory responses. Collaboration with research organizations, consumer associations, and other authorities will strengthen monitoring (e.g., phone surveys, social media monitoring, and mystery shopping).
- Increase collaboration between financial and nonfinancial authorities to share insights and data on consumer risks and market developments, identify regulatory and supervisory gaps, and develop coordinated approaches to respond to fraud, unfair practices, data misuse, and other related concerns.
- Develop regulatory measures that go beyond general consumer protection laws to address the most pressing consumer risks in digital credit, particularly overindebtedness through tailored actions.
- Engage with digital lenders and third-party service providers to understand the solutions they already have in place, build regulatory capacity on advanced technological solutions, and gather feedback on regulatory and supervisory measures and areas for improvement.
- Collaborate with research organizations and consumer representatives to expand capacity for identifying, preventing, mitigating, and resolving risks to consumers.

As digital credit continues to evolve, authorities need to embrace more proactive, preemptive, and coordinated efforts to build a Responsible Digital Credit Ecosystem.

A Call to Action for Funders

Funders can play a critical role in advancing responsible digital credit, by supporting the development and adoption of government-led solutions. Key actions include:

- Raise awareness among grantees about the importance of addressing consumer risks in digital credit through a more holistic and customer-centric lens, one that considers the borrower journey, provider life cycle, and risk management cycle.
- Advocate for the implementation of regulatory or supervisory measures by making them a condition for their credit lines.
- Share promising responsible digital credit solutions from this guide with regulators, supervisors, and policymakers, and provide technical and financial resourcing needed to implement solutions suited to the local context.
- Emphasize the importance of adopting financial consumer protection principles and good practices (OECD 2022; World Bank Group 2017), including outcomes-focused and customer-centric regulatory and supervisory frameworks to authorities (e.g., Boeddu et al. 2021; Duflos et al. 2024; Izaguirre 2020; Izaguirre et al. 2022a).

- Facilitate coordination among local authorities and support peer learning and knowledge sharing among authorities from different countries.
- Support consumer associations by funding efforts to enhance their engagement with authorities, contribute to identifying consumer risks in digital credit markets, and advocate for improvements in both regulation and provider practices. Support research and consumer organizations to pilot solutions that enhance market monitoring and generate insights on emerging risks, especially in understudied areas such as behavioral vulnerabilities, agent-related risks, network downtime, and fraud. Methods may include phone surveys, social media monitoring, and mystery shopping.
- Support innovation initiatives, such as hackathons, tech sprints, and regulatory sandboxes, to surface, test, and scale new solutions to make digital credit more responsible and strengthen dialogue among authorities, lenders, and tech providers.
- Support capability development initiatives that help authorities better understand the benefits, risks, and outcomes of digital credit, and how they can act to address risks.

SECTION IV

Frontier Solutions for Responsible Personal Digital Credit: Providers

PROVIDERS PLAY A PIVOTAL ROLE IN expanding access to responsible digital credit by combining traditional credit data with alternative data sources—such as mobile phone metadata, digital payment patterns, and behavioral signals- and integrating emerging technologies like AI, ML, cloud infrastructure, and biometric authentication. These tools are used to improve credit assessments, personalize customer experiences, reduce costs, and monitor emerging risks. Yet, the speed of digital innovation and the increasingly interconnected nature of financial ecosystems amplify risks of fraud, data privacy, and overindebtedness, driven by intensive use of personal data, immediacy of services, and growing reliance on technology. These risks may not only harm borrowers, but also providers' reputation, sustainability, and profitability. As a result, providers have a vested interest in adhering to responsible lending practices that protect consumers. Providers are increasingly expected to strengthen their value proposition by delivering real-time services and engaging in cross-sector collaboration. This includes ensuring interoperability across the ecosystem; aligning with global standards for responsible lending, transparency, and data security; and complying with national regulations. Providers must also support open APIs and standardized protocols to enable seamless integration of responsible digital credit solutions across platforms. Key actors include:

- **Digital lenders**, e.g., fintechs, banks, and MFIs that are at the forefront of designing responsible credit products and must integrate affordability checks, ethical AI/ML models, and real-time risk monitoring into their operations.
- **Technology providers**, e.g., AI/ML developers, cloud infrastructure firms, cybersecurity companies, bigtechs that enable real-time fraud detection, biometric authentication, and AI/ML-powered risk assessment, but must balance innovation with compliance and accessibility (see Box 4).
- **Telcos and payment providers** that facilitate loan origination, disbursement, and repayments and play a key role in expanding responsible financial inclusion, especially in mobile-first markets.
- **Credit bureaus and alternative data providers** that enhance credit scoring for thin-file borrowers, leveraging psychometric, transactional, and behavioral data analytics.

Providers are developing and deploying a range of technology-enabled **solutions** to address consumer risks in digital credit throughout the customer journey (see Table 10). This research shows solutions catering to personal digital credit, with a focus on EMDEs and mobile-first markets, although some may also be applicable to broader DFS.

As the digital credit market continues to evolve, the path forward lies on strategic collaboration among digital credit providers, financial authorities, technology providers, research organizations, and civil society to balance access, security, and transparency, and empowers providers to build sustainable and trustworthy solutions that contribute to a responsible digital credit ecosystem.

BOX 4. **Roles of Bigtechs**

Bigtechs in EMDEs can play different roles:

- **Setting the rules** through app store policies and enforcement (e.g., Google Play, Apple App Store) to ensure transparency, restrict high-risk lending apps, mandate user consent, and limit access to sensitive user data.
- **Powering digital lending infrastructure**, including cloud services, AI/ML credit scoring tools, fraud detection, and analytics (e.g., Amazon Web Services, Microsoft Azure, Google Cloud, Meta, IBM).
- **Providing embedded credit** through e-commerce ecosystem or platform-native BNPL solutions (e.g., Amazon Pay Later, Tencent's WeChat Pay Credit).
- **Offering digital credit directly** or via lending platforms and partners (e.g., Ant Group's Huabei, Tencent's WeBank).

Responsible Digital Credit Solutions by Providers

TABLE 10. **Provider solutions by phase of risk management cycle, consumer risk, and customer journey step**

Provider Solution	Risk Management Cycle				Consumer Risk and Issue	Customer Journey Step
	Identification	Prevention	Mitigation	Resolution		
1. Borrower authentication methods					Fraud	Sign-up, application, disbursement, servicing
2. Fraud prevention and detection systems, and AI-driven analytics						
3. Fraud reporting, transaction alerts, and accessible borrower support						
4. Data encryption					Data misuse	Application, agreement, servicing
5. Transparency and control of borrower data-sharing preferences and consent					Data misuse, Lack of transparency	
6. Clearer credit disclosures and policy updates					Lack of transparency	Agreement (T&C, terms disclosure)
7. AI-enabled chatbots to provide multilingual, 24x7 borrower support					Inadequate redress, agents	Servicing, recourse, and grievance
8. Redundant failover systems, disaster recovery, and offline capabilities					Network downtime	Disbursement, repayment
9. Unbiased algorithms and inclusive data in AI-based credit models					Unfair treatment	Credit assessment, pricing, agreement (terms disclosure)
10. Borrower-centric product design and user experience					Behavioral vulnerabilities	Product design, onboarding
11. Positive friction, dynamic pricing, automated debt monitoring					Overindebtedness	Credit assessment, pricing, servicing, repayment
12. Industry standards for responsible digital lending						
A Call to Action for Digital Lenders and Service Providers						
A Call to Action for Funders						

Source: Authors.

Solution 1: Borrower Authentication Methods

Risk identification, prevention • Fraud

WHY? (THE PAIN POINTS)

Weak borrower authentication processes expose digital credit users to fraud and financial losses at multiple stages of their journey, largely during onboarding, loan applications, and repayment. These risks are particularly evident in EMDEs, where reliance on mobile devices is high, and financial and technological literacy may be limited.

WHAT? (THE SOLUTIONS)

Robust borrower authentication is critical to secure the digital credit life cycle, particularly during onboarding, loan disbursement, and repayment. Authentication solutions must be tailored to users' connectivity, device access, and digital literacy level:

- **Multifactor Authentication (MFA):** Multiple layers of verification (e.g., app-, SMS- or hardware-based) tailored to different user segments and integrated into digital lending platforms. MFA includes one-time passwords sent via text, email, or voice, as well as app notifications. It balances inclusion and security when designed with local contexts in mind.
- **Biometric Authentication:** Facial, voice, or fingerprint verification for secure and seamless access, particularly useful where digital literacy is low. Biometric authentication eliminates passwords

Examples

Latin America: Digital lenders are exploring voice biometric authentication to reach low-literacy and underserved segments. Key biometric authentication providers include CPqD, TOC Biometrics, and ValidSoft (Biometric Update 2021).

Global Security Technology Providers: Lead vendors enable secure onboarding and account access with robust MFA solutions such as RSA SecureID (token-based identity verification) and YubiKey by Yubico (phishing-resistant hardware-based MFA).

Scalable Platforms for Integration: Microsoft Azure Active Directory and Google Authenticator offer MFA solutions that digital lenders can integrate at scale (ProjectPro 2024).

Government-Led Biometrics Authentication: India's Aadhaar program enables biometrics authentication and electronic KYC for digital lenders, especially with the recent launch of the Unified Lending Interface (Biometric Update 2024a; Reserve Bank Innovation Hub [RBIH] 2024).

Adaptive Authentication: PayJoy, for example, monitors borrower behavior and adjusts security dynamically and in real-time based on transaction amounts and location (MIT Sloan 2023).

and phishing risks. Voice verification works well in contexts with low bandwidth.

- **Adaptive Authentication:** Dynamically adjusted security process based on risk context—e.g., device type, geolocation, fingerprinting, and transaction value. Adaptive authentication enables higher security with less user friction.

CHALLENGES AND LIMITATIONS

- **Unreliable internet access** hampers MFA uptake in low-connectivity areas.
- **False positives** from biometric errors can lock legitimate users out, reducing trust.
- **Privacy concerns** around biometric data collection, storage, and regulatory compliance, especially in regions without robust protections.
- **Borrowers experience trade-offs**, as overly complex authentication reduces usability and access for low-literacy or first-time users.
- **Cost** limits adoption of advanced tools by small FSPs.
- **AI/ML-enabled fraudsters** require increasingly advanced defensive tools to thwart them.

Solution 2: Fraud Prevention and Detection Systems, and AI-Driven Analytics

Risk identification, prevention • Fraud

WHY? (THE PAIN POINTS)

Digital lenders handle large volumes of borrower data and real-time transactions, from disbursements to repayments. Unauthorized access to this data can lead to fraud (e.g., phishing attacks), causing financial losses and reputational damage. In EMDEs, digital credit users typically experience fraud during loan application (e.g., loan stacking, synthetic identities, identity spoofing) and loan disbursement (e.g., SIM swap, account takeover).

WHAT? (THE SOLUTIONS)

To prevent and detect fraud, digital lenders are deploying AI-driven tools tailored to mobile-first and high-volume environments:

- **Behavioral Biometrics and Anomaly Detection:** Tools analyze user patterns such as typing speed, mouse movement, swipes, and navigation habits to detect account takeover attempts and suspicious behavior.
- **Real-Time ML Fraud Detection:** ML models monitor fraud during loan application, disbursement tampering, and repayment anomalies in real time, such as loan stacking, first-time defaults, or SIM swaps.
- **AI-Powered Data Analytics:** Analyze vast amounts of credit, transactional, and behavioral data (e.g., utility bills, social media, repayment history) to flag risky behavior and assess trustworthiness.

KEY FEATURES OF EFFECTIVE FRAUD DETECTION SOLUTIONS

- **Scalability:** Handle high transaction volumes without hindering performance.
- **Customization:** Tailor models to detect fraud patterns specific to digital credit use cases.
- **Explainability:** Use explainable AI to ensure transparency in loan approvals, customer support decisions, and regulatory compliance.

- **Real-Time Blocking:** Flag or block suspicious transactions before loan disbursement.

CHALLENGES AND LIMITATIONS

- **Incomplete or unstructured data** limits model accuracy.
- **False positives** may flag legitimate transactions or loan applications, undermining trust.
- **Privacy concerns** arise when analyzing large amounts of user data. Compliance with data privacy regimes (e.g., GDPR) is critical.
- **Integration** with legacy systems can be technically complex.
- **High costs** of investment, implementation of technology infrastructures, and talent may make this solution unaffordable for smaller digital lenders.
- **Black-box models** reduce the explainability of why certain repayment or disbursement transactions or applications were flagged, which can erode customer trust.
- **Fraudsters** continually adapt and leverage social engineering and AI/ML tools to exploit vulnerabilities in fraud detection systems.

Examples

Behavioral Biometrics for Fraud Prevention:

- Risk operations platforms like those developed by the data science company Feedzai, offer behavioral biometrics, transaction monitoring, and account creation solutions. For example, a Brazilian bank leader in solar panel and vehicle loans was able to protect its customers from fraud attacks using Feedzai's account hacking module, which leverages behavioral biometric, device, and network information (Feedzai 2024a).

Real-Time Fraud Detection:

- TrustDecision is a software-as-a-service company that offers a multilayer fraud detection system, combining real-time decision-making and offline data retrieval, helping lenders detect loan application anomalies and repayment fraud. For example, a cash loan platform in Indonesia used TrustDecision to improve fraud detection accuracy (TrustDecision 2024).
- Feedzai's AI models monitor loan disbursement and repayment transactions in real-time, identifying unusual patterns such as first-time payment defaults, irregular repayment behaviors, and synthetic identity fraud (Biometric Update 2025; Feedzai 2024b).

AI-Powered Data Analytics for Case Investigation:

- Feedzai's ML models enable lenders to investigate suspicious loan repayment patterns, analyze borrower transaction histories, and trigger dynamic fraud scoring, helping to prevent repeated borrower misuse (Bento et al. 2022).

Solution 3: Fraud Reporting, Transaction Alerts, and Accessible Borrower Support

Risk mitigation, resolution • Fraud

WHY? (THE PAIN POINTS)

Borrowers in EMDEs are often vulnerable to fraud, including loan stacking, unauthorized transactions, and identity misuse (e.g., loans granted to a borrower's impersonator). These incidents can lead to damaged credit, repayment confusion, and financial losses. Many borrowers face barriers to reporting fraud or accessing alerts, due to low digital literacy, limited connectivity, or a lack of multilingual support—especially for people with disabilities or people who are unable to speak an official language.

WHAT? (THE SOLUTIONS)

Digital lenders are implementing proactive and inclusive fraud mitigation and resolution tools:

- **Multilanguage Fraud Reporting:** Robust reporting channels (e.g., app, SMS, calls) allow borrowers to immediately flag suspicious loan activity and confirm or dismiss alerts.
- **Real-Time Transaction Alerts:** Automated SMS or in-app alerts notify customers of loan disbursement, repayments not initiated by them, or unauthorized access to their accounts, enabling faster response.
- **Inclusive and Responsive Customer Support:** Chatbots and live customer service agents, with multilingual or voice-based options, ensure accessibility and help underserved borrowers report and resolve fraud quickly, reducing borrower harm and information fatigue.

CHALLENGES AND LIMITATIONS

- **Infrastructure gaps** delay fraud alerts, especially in low-bandwidth areas.
- **Legacy systems** limit seamless integration with modern fraud detection technologies.
- **Language barriers** hinder customer communication and fraud alerts.
- **False positives** worsen customer experience, creating mistrust or confusion.
- **High cost** of customer support tools can deter digital lenders with limited resources.

Examples

Digital Lenders Using Fraud Alert Tools:

- Branch, a DFS company, uses in-app analytics and real-time alerts to identify, monitor, and mitigate the effects of suspicious loan applications and loan stacking in India, Kenya, Nigeria, and Tanzania (Branch 2024).
- Tala, a digital credit provider, sends SMS-based alerts for every loan disbursement, repayment date, or account change in India, Kenya, Mexico, and the Philippines (Tala 2024).

Fraud Alert Infrastructure Providers:

- Twilio, a cloud-based communication technology company, enables real-time SMS and in-app fraud alerts embedded in digital lending platforms (Twilio 2024a; 2024b).
- Zendesk, a cloud-based software-as-a-service company, powers customer support tools, such as multilingual chatbots, to improve fraud reporting and resolution (Zendesk 2024).

- **Privacy concerns**, data protection laws, and cross-border regulations complicate fraud prevention, requiring digital lenders to navigate complex compliance requirements.
- **AI-powered fraud tactics** evolve rapidly, necessitating that lenders continually update and refine their fraud prevention strategies.

Solution 4: Data Encryption

All risk management phases • Data misuse

WHY? (THE PAIN POINTS)

Data breaches can expose sensitive borrower information—such as IDs, credit scores, and transaction histories—leading to fraud, identity theft, and breach of privacy laws. Weak encryption undermines borrowers' trust and makes digital lenders vulnerable to reputational and financial risks, particularly in low-resource settings.

WHAT? (THE SOLUTIONS)

Robust data encryption tools are critical to protect sensitive borrower information with lightweight processing technologies optimized for lower-end devices commonly used in underserved markets:

- **Transport Layer Security (TLS)** encrypts data in transit, specifically during loan application, disbursements, repayment, or API interactions. TLS 1.2+ is widely used in digital credit platforms to protect borrower data during online transactions.
- **Advanced Encryption Standard (AES)** protects data at rest on servers and in cloud environments. AES-256 is a globally recognized standard used to secure borrower identity, credit history, and repayment data.
- **End-to-end encryption** ensures that only the intended recipient (the borrower) can access sensitive communications, such as notifications about loan approvals, disbursements, or repayment schedules.
- **Encryption at all stages**—in transit, at rest, and in use—protects borrower information throughout the loan cycle, and across systems it secures data exchanges with credit bureaus, payment gateways, and fraud detection systems.

CHALLENGES AND LIMITATIONS

- **Compliance with Data Privacy Requirements:** Laws and regulations may be fragmented and vary by country and region.
- **Cost Barriers:** Small lenders may lack the financial, human, and infrastructure resources to implement advanced encryption protocols.
- **Legacy systems** may lack compatibility with modern encryption protocols.
- **Infrastructure gaps** in EMDEs can limit real-time encryption and detection, especially for mobile-first lenders.

Examples

Cloud-based platforms such as Google Cloud, AWS, and Microsoft Azure offer financial-grade encryption protocols (e.g., TLS 1.2+, AES-256) that secure API calls, backend infrastructure, and data in transit as well as at rest for digital credit platforms (AWS 2024; Google Cloud 2023; Microsoft 2024) (see Appendix II).

Cybersecurity and technology providers, such as Thales CPL, Entrust, and AWS KMS, offer scalable encryption and centralized key management tools suitable for digital lenders in mobile-first and low-bandwidth environments (Entrust 2024; Thales Group 2024; Wawad 2023).

Lender applications

- M-Kopa, in Kenya, uses AWS infrastructure, which includes built-in encryption and key management services (Freshworks 2024).
- Kubo Financiero in Mexico uses robust data protection and encryption measures (Traders Union 2024).
- Klarna, a global lending platform, uses advanced encryption methods, including AES-256, to secure data at rest and in transit (Stripe 2024).

Solution 5: Transparency and Control of Borrower Data Sharing Preferences and Consent

All risk management phases • Data misuse, lack of transparency

WHY? (THE PAIN POINTS)

Many digital borrowers, especially in underserved or low-literacy markets, struggle to understand how their personal data is collected, used, or shared. Without clear details about consent, they often agree to data policies without fully understanding the implications. As a result, they have limited control over their data to manage sharing preferences, which augments data misuse risks and erosion of trust.

WHAT? (THE SOLUTIONS)

To strengthen responsible data practices in personal digital credit, providers are introducing targeted tools that put borrowers in control:

- **Self-Service Dashboards:** Allow consumers to easily view data collected by lenders via lending apps, update their data sharing preferences, and request data deletion or corrections, where necessary.
- **Product-Embedded Consent Mechanisms:** Allow borrowers to grant, deny, or modify permissions in real-time through user-friendly in-app prompts, ensuring informed and revocable consent.
- **Data Minimization Protocols:** Lenders limit data collection to only what is essential for loan processing and credit scoring, avoiding excesses.
- **Tools and options for users to control their data preferences** and opt in or out of certain types of data usage.

CHALLENGES AND LIMITATIONS

- **Implementation Costs:** Building user-friendly dashboards and granular consent tools may deter smaller providers due to cost implications.
- **Digital literacy gaps** hinder borrowers' understanding of data rights, even with simplified tools.
- **Data privacy fragmentation** creates compliance complexity for regional or cross-border operations.
- **Third-party risks** when compliant lenders share data with less-regulated partners.
- **Evolving AI models** rely on expanding data pools, increasing pressure on responsible usage and disclosure.

Examples

Tech Platforms Offering User Control Tools: Google provides dashboards for users to manage data preferences globally and has implemented regulatory measures for digital lending apps on Android devices in Africa (Google 2024a) (see Appendix II).

Digital Lenders Applying Ethical Data Practices: Tala publishes a Data Ethics Policy and enables borrowers to manage how their personal data is used and shared (Tala 2024).

Telecom-Driven Consent: Safaricom has implemented data privacy measures across its services, including M-Shwari digital loans, adhering to Kenya's data protection laws and limiting third-party data sharing unless legally required (Safaricom 2024a; 2024d).

Solution 6: Clearer Credit Disclosures and Policy Updates

All risk management phases • Lack of transparency

WHY? (THE PAIN POINTS)

Misleading or incomplete loan information—such as undisclosed annual percentage rates (APRs), hidden fees, or vague repayment terms—can result in poor financial decisions, unmanageable debt, and borrower harm. These issues are especially problematic in low-literacy markets where users rely on mobile apps with limited regulation or inconsistent standards.

WHAT? (THE SOLUTIONS)

Providers are adopting proactive disclosures and policy strategies to improve transparency and borrower protection across digital credit apps:

- **Standardized and Simplified Loan Disclosures:** Help consumers understand the fees, interest rates, repayment terms, and the implications of late payments at the point of application, using mobile-friendly formats.

- **Real-Time Loan Cost Estimators:** In-app tools provide borrowers with upfront cost estimates, including fees, interest rates, and penalties, to support informed decision-making before accepting a credit offer.
- **Platform-Level Transparency Enforcement:** Major app stores (e.g., Google Play, Apple App Store) are implementing policies to screen digital lenders, restrict access to sensitive user data, enforce maximum APR limits, and require full loan costs.

CHALLENGES AND LIMITATIONS

- **Limited Platform Enforcement:** Disclosure rules often apply only to apps in official stores, creating gaps for apps downloaded via sideloading or third-party marketplaces.
- **Post-approval Circumvention:** Some lenders may change terms after app approval, making ongoing enforcement difficult.
- **Low Borrower Awareness:** Many users are unaware of platform safeguards or how to identify compliant apps, especially where financial literacy is low.

Examples

Global Bigtech Platforms Setting Standards:

- **Google** requires digital lending apps on Google Play to disclose all loan terms, including APR and repayment period, and bans apps with APRs over 36 percent in certain countries (Google 2024b) (see Appendix II).
- **Apple** has updated its App Store rules globally to mandate clear disclosure of all loan terms, including APR and payment due date. To curb predatory lending, it set a maximum APR of 36 percent and a minimum loan term of 60 days (Apple 2024) (see Appendix II).

Lender-Side Disclosure Innovation:

Fintech company **Jumo**, in partnership with CGAP, experimented with different types of communications linked to a digital credit offer and witnessed that simple changes to how costs are presented reduced default rates from 29 percent to 20 percent. These findings were then integrated into Jumo's messages offering new digital loans. This experience demonstrated how clearer communication can improve repayment behavior and support responsible lending (Mazer and McKee 2017).

Solution 7: AI-Enabled Chatbots to Provide Multilingual, 24x7 Borrower Support

All risk management phases • Inadequate redress, agents

WHY? (THE PAIN POINTS)

Borrowers face a lack of access to real-time agent or staff support, and in underserved regions, they may not speak or understand the main language used in lending apps.

WHAT? (THE SOLUTIONS)

Chatbots can address language barriers as their multilingual support helps borrowers in diverse regions understand loan conditions and repayment schedules and reduce reliance on limited customer support teams. Since they are available 24/7, chatbots also provide automated escalation processes to resolve complaints faster and improve cost efficiency by handling generic high-volume queries allowing agents to focus on more complex cases. Specific solutions include:

- **AI-Enabled Chatbots,** providing multilingual, 24/7 first-line customer support and assistance for resolving queries and complaints, while escalating complex issues to support officers or agents.
- **AI and ML Tools,** which monitor agent and officer interactions and detect patterns of non-compliance or harassment, help lenders meet standards for communication and conduct.

CHALLENGES AND LIMITATIONS

- **High Development Costs:** Building and deploying AI-enabled chatbots requires financial and technical resources.
- **Data Privacy Concerns:** Borrowers are increasingly concerned about how their data is used or shared.
- **Integration with Legacy Systems:** Digital lending platforms often rely on outdated systems that are incompatible with modern AI models.
- **Data Limitations:** AI-enabled chatbots rely on large, high-quality data sets to provide relevant responses. Data gaps or poor-quality training data can lead to inaccurate or irrelevant responses that frustrate customers.
- **Explainability in AI:** Complex AI systems may not adequately explain the reasoning for certain responses or solutions provided by chatbots, creating additional concerns.

Examples

Conversational AI Platforms for Digital Lending:

- BankBuddy supports digital lenders with multilingual, AI-powered bots to reduce loan processing delays and automate FAQs (BankBuddy 2024).
- Zendesk and Genesys power chatbot tools that script conversations with borrowers to ensure respectful, real-time responses across channels (Zendesk 2023).

Mobile-First Chat-Enabled Platforms:

Safaricom's Zuri AI chatbot offers 24/7 customer support and is available on Telegram and Meta's Messenger. Consumers can use Zuri to learn how to apply for an M-Shwari loan. In the future, borrowers will also be able to use Zuri for more advanced loan-related queries that are currently handled through the M-Pesa app and USSD (Safaricom 2024e).

Solution 8: Redundant Failover Systems, Disaster Recovery, and Offline Capabilities

All risk management phases • Network downtime

WHY? (THE PAIN POINTS)

Network interruptions can delay loan disbursement and repayment confirmation, especially in low-connectivity areas where borrowers rely on quick access for emergencies. A single system failure may disrupt multiple services in the digital credit chain, undermining trust and operational continuity.

WHAT? (THE SOLUTIONS)

Digital lenders and fintech partners are addressing reliability gaps with infrastructure designs that minimize downtime and ensure service continuity:

- **Redundant Failover Systems:** Automatically reroute functions to backup systems during outages to maintain uptime.
- **Disaster Recovery and Resilience Planning:** Ensure data protection and operational recovery in the event of failures or breaches.
- **Offline Capabilities:** Enable essential loan services (e.g., application, repayment processing) through USSD SMS, or cached app functions when connectivity is unavailable.
- **Transparent Outage Communication:** Promptly notify customers about disruptions and expected resolution times via SMS or app notifications.

INDUSTRY BEST PRACTICES ARE:

- **Decoupling critical services** (e.g., loan disbursement, repayment processing) from noncritical services (e.g., promotional notifications) to ensure core functionalities are always operational.
- **Adapting a multicloud strategy**, distributing workloads across multiple cloud providers to mitigate downtime risks.

CHALLENGES AND LIMITATIONS

- **Regional regulations** may delay the implementation of robust cloud or failover tools.
- **Third-party dependencies** increase exposure to external failures or service withdrawal.
- **Limited infrastructure** remains a persistent barrier in rural areas.
- **Vendor lock-in** limits the ability to shift providers if one fails or becomes anticompetitive.
- **Security risks** around data loss, integrity, and access must be mitigated through encryption and role-based permissions.

Examples

Digital Lenders with Failover Strategies: Branch and other digital lenders operating in EMDEs have implemented scalable infrastructure and redundant system designs to maintain loan service availability, especially during network disruptions.

Cloud Infrastructure Providers, such as AWS, Google Cloud, Microsoft Azure, and IBM Cloud, power digital lenders like Tala and Branch, enabling scalable operations and high uptime for loan applications, disbursements, and repayments, as well as automating disaster recovery in low-connectivity environments (see Appendix II).

Solution 9: Unbiased Algorithms and Inclusive Data in AI-Based Credit Models

All risk management phases • Unfair treatment

WHY? (THE PAIN POINTS)

Consumers may face unfair lending practices. AI-based credit scoring can unintentionally amplify biases if models are trained on nonrepresentative data or rely on variables that correlate with income, gender, or geography, which can lead to discriminatory lending outcomes. For instance, algorithmic bias may prioritize certain factors and assign more weight to elements correlated with protected classes or socioeconomic status. In EMDEs, this can result in unfair loan rejections, pricing disparities, and unethical debt collection—eroding trust and excluding vulnerable consumers from financial systems.

WHAT? (THE SOLUTIONS)

Providers are advancing tools and practices that reduce discrimination and promote responsible automation in digital lending:

- **Use of ML and inclusive training data** to assess creditworthiness and continue monitoring and auditing for bias of AI-based algorithms and AI-driven credit scoring.
- **Implementation of fairness testing and algorithm adjustment** for credit scoring and loan approval processes, and open-source fairness toolkits to test models for discriminatory patterns and adjust scoring models and weighting systems accordingly.
- **Ethical automation and application of debt collection standards**, by using AI tools to monitor agent behavior, automate reminders, and prevent harassment—ensuring compliance with ethical and regulatory standards.

CHALLENGES AND LIMITATIONS

- **The high cost and complexity** of accessing and maintaining quality and diverse data sets to train AI models, and implementing fairness tools.
- **Evolving regulatory frameworks** make it harder to ensure AI systems and algorithms comply with regulations and standards, including cybersecurity, to protect AI systems and data from cyberattacks and threats.
- **Explainability difficulties** in "black-box" AI models can reduce transparency and accountability.

Examples

AI Fairness Toolkits: A growing suite of open-source toolkits enables FSPs to assess and mitigate algorithm bias.

- **Microsoft Fairlearn:** Developed as a Python library, Fairlearn is designed to support fairness-aware ML practices. It provides tools for measuring disparities in model outcomes across demographic groups, applying fairness constraints during model training, and reducing algorithmic bias through post-processing reweighting strategies. In credit scoring, Fairlearn enables developers and data scientists to evaluate and address biases that may disproportionately impact protected groups such as women, rural populations, or ethnic minorities. Its interpretability functions also support transparency and model auditability, consistent with emerging regulatory expectations (Microsoft 2020) (see Appendix II).
- **IBM AI Fairness 360 (AIF360):** AIF360, available in both Python and R, is a comprehensive, open-source toolkit offering fairness metrics and a wide range of bias detection and mitigation algorithms. Relevant use cases in financial services include loan approval, credit risk assessment, and interest rate determination, where AIF360 enables institutions to test for disparate impact and adjust models accordingly.
- **Google's What-if-tool (WIT):** WIT is an interactive visualization interface that integrates with TensorBoard and TensorFlow models. It enables users to explore counterfactual scenarios, test the sensitivity of model predictions to changes in input variables, and simulate model performance across subgroups. For example, a lender can visualize how changing an applicant's income or location affects loan approval probability, helping to identify unintended biases.

Responsible Lender Practices: Tala uses AI and behavioral and transactional data—including smartphone usage patterns, SMS metadata, and repayment behavior—to customize credit limits and repayment schedules based on borrowers' demonstrated capacity to repay. This approach extends credit to "thin file" customers without traditional credit histories. Tala has published a Data Ethics Policy outlining its commitment to responsible AI use. As part of its practices, Tala explicitly excludes sensitive personal attributes—such as gender, race, ethnicity, religion, gender, and political affiliation—from its credit scoring models (Tala n.d.).

Solution 10: Borrower-Centric Product Design and User Experience

All risk management phases • Behavioral vulnerabilities

WHY? (THE PAIN POINTS)

Poorly designed digital lending products can lead to negative friction, resulting in confusion and a frustrating user experience. Consumers may misunderstand T&C, encounter errors, or face failed payments. Many apps are not designed to accommodate consumers with disabilities or low digital literacy. Technical glitches and system downtime can further disrupt access and repayment. Further, lack of transparency and explainability—with complex algorithms and data-driven decisioning processes—can also make it difficult for consumers to understand the rationale behind lending decisions.

WHAT? (THE SOLUTIONS)

- **Customer-Centric Interfaces:** Credit providers that prioritize customer-centricity offer seamless, intuitive, and mobile-first user experiences that work across feature phones and smartphones, accommodating varying digital literacy levels.
- **Omnichannel Access**: FSPs ensure borrowers can interact with digital credit products through multiple channels—apps, SMS, USSD, or call centers—to improve inclusivity and continuity.
- **Product Design and Real-Time Monitoring:** FSPs implement backend systems to address performance issues, service glitches, payment failures, and user friction in real-time, enabling proactive problem resolution.
- **In-App Reporting Enhancements:** They provide clear, actionable borrower information, including repayments status, due dates, outstanding balances, and credit histories, to promote financial awareness.
- **Algorithm Explainability:** FSPs integrate explainable (XAI) practices that demystify lending decisions, enabling borrowers to understand why they qualify (or not) for loans in plain language.

CHALLENGES AND LIMITATIONS

- **Costs:** Lenders may face high implementation costs for upgrading security and complying with varying data protection laws and regulations.
- **Balanced Approach:** Lenders need to balance seamless user experience and convenience with robust security and data protection.

Examples

M-Kopa piloted an interactive SMS system that allowed borrowers to access their credit histories for free and notify the credit bureau of any inaccuracies. Borrowers who opted into the SMS system took up more credit but were more likely to repay on time (Mazer and McKee 2017).

US Cash App redesigned its interface to include voice guidance, larger fonts, and simplified navigation, enhancing usability for elderly and visually impaired users (Cash App 2024).

Klarna has implemented explainable AI algorithms to help users understand loan approval or rejection decisions, building trust among borrowers (Klarna 2023).

Solution 11: Positive Friction, Dynamic Pricing, and Automated Debt Monitoring

All risk management phases • Overindebtedness

WHY? (THE PAIN POINTS)

Greater ease of borrowing through digital credit products can increase the risk of overindebtedness for low-income customers, including people prone to gambling. Some digital lenders also extend or roll over loans without reassessing repayment capacity, compounding debt stress. High interest rates and lack of transparency further increase vulnerability, particularly in low-literacy markets.

WHAT? (THE SOLUTIONS)

- **Positive Friction by Design:** Intentionally introducing steps at strategic points in a consumer journey to slow users down and shift them out of automatic thinking, allowing them to make more informed decisions.
- **Dynamic pricing and flexible repayment** based on borrower income and credit history. This aligns repayment schedules with the ability to repay and reduces default risk.
- **Automated debt monitoring** tools that integrate with credit bureaus or other sources to provide borrowers with real-time updates on their debt status and repayment progress.

CHALLENGES AND LIMITATIONS

- Digital lenders often optimize for speed over affordability and risk assessment.
- Borrowers may lack the financial literacy to understand how high-interest rates or penalties can exacerbate debt and negatively impact their credit scores.
- Fragmented and inconsistent or absent regulations on digital lending in certain regions allow unethical practices to persist.

Examples

Positive Friction: In Kenya, Jumo and CGAP tested positive friction by making loan terms harder to skip. This increased borrower engagement and improved repayment rates, showing that simple design changes can encourage more responsible borrowing (Mazer and McKee 2017).

Dynamic Pricing and Flexible Repayment: Branch offers flexible repayment schedules with terms ranging from 4 to 12 weeks in countries like Kenya and Nigeria and provides incentives for early repayment through increased loan limits for future borrowing. Tala dynamically adjusts both credit limits and interest rates based on borrower capacity, using risk-based pricing that analyzes over 250 alternative data points, including repayment behavior, phone usage patterns, and transaction history to create personalized loan offers (Branch n.d., Tala 2021).

Automated Debt Monitoring: Plaid's Liabilities API lets lenders track repayment history, debt balances, and upcoming due dates—enabling early intervention and borrowers' visibility of loan information (Plaid 2024).

Solution 12: Industry Standards for Responsible Digital Lending

All risk management phases • Overindebtedness

WHY? (THE PAIN POINTS)

Greater ease of borrowing through digital credit can increase the risk of overindebtedness for low-income customers, especially customers who are prone to gambling. Customers who borrow with limited need or intention have an increased risk of nonrepayment and overindebtedness. Some lenders extend or roll over loans without evaluating the borrower's ability to repay, increasing the overall debt burden.

WHAT? (THE SOLUTIONS)

- **Codes of Conduct:** Industry associations develop, issue, and require member adherence to codes of conduct. The code includes provisions on aspects such as thorough affordability assessments, fair pricing, transparency, and complaints handling. Some may also address financial coaching, training, and counseling. Associations may work with authorities to develop codes.
- **Enforcement Mechanisms:** Industry associations list members who endorse the code and have a mechanism to monitor and enforce it. They also report cases of noncompliance, sanctions, or removal from the association.
- **Self-Regulatory Role:** Authorities may assign associations' responsibilities not only to develop and enforce the code, but also to register digital lenders and become a self-regulatory organization (see Section III, Solution 1).
- **Market Monitoring:** Associations also produce industry reports and statistics that help identify opportunities, risks, and issues.

CHALLENGES AND LIMITATIONS

- Industry associations may require time to develop the capacity and resources necessary to monitor and enforce compliance with codes of conduct.
- When membership is voluntary, an association may not be able to include all relevant actors, or multiple competing small associations may emerge with differing standards.
- Collaboration with authorities may be challenging due to limited resources, unfamiliarity, or concerns about regulatory capture.

Examples

India: The Fintech Association of Consumer Empowerment (FACE) issued a code of conduct for digital lenders, covering areas such as transparency, pricing, collections, data usage and sharing, and grievance redressal. Members are required to endorse the code and may be sanctioned for noncompliance. FACE also monitors the market and flags illegal loan apps to Google for removal from their Play Store (FACE n.d.).

Singapore: The Singapore Fintech Association (SFA) issued a code of conduct for BNPL providers in October 2022, covering disclosure, marketing, redress, and financial hardship assistance. Members can be excluded from the list of registered providers due to noncompliance (SFA 2022).

Kenya: The Digital Financial Services Association (DFSAK) issued a code of conduct for responsible lending in 2021, covering credit assessment, disclosure, marketing, debt collection, and third-party arrangements. It is enforced by a Disciplinary Committee, which may suspend or cancel membership due to noncompliance (DFSAK 2019).

A Call to Action for Digital Lenders and Service Providers

Digital lenders and digital credit service providers can leverage technology to prioritize customer-centric solutions and innovate in responsible digital lending. They can:

- Strengthen security and data protection by adopting robust, seamless authentication methods, encryption protocols, and secure handling of borrowers' transactional and alternative data across the customer journey.
- Harness emerging technologies to drive scalability, efficiency, and resilience by implementing responsible AI/ML–powered solutions such as inclusive credit scoring models, advanced and real-time fraud detection systems, and smart chatbots that enhance borrower engagement.
- Raise awareness among investees and grantees about the importance of addressing consumer risks in digital credit through a more holistic and customer-centric lens, one that considers the borrower journey, provider life cycle, and risk management cycle.
- Promote responsible lending practices through enforceable codes of conduct (particularly in early stages of market maturity), positive friction, dynamic risk-adjusted pricing, and real-time debt monitoring.
- Prioritize customer-centric digital credit solutions by embedding transparency into product design, clearly disclosing loan terms and data use practices, and equipping borrowers with tailored tools, resources, and financial education to support informed decision-making and responsible repayment.
- Foster ecosystem-wide connectivity by aligning regulatory frameworks, adopting open APIs and shared data standards, and enabling seamless cross-sector partnerships among lenders, fintechs, bigtechs, and mobile platforms. This ensures scalable, secure, and inclusive delivery of digital credit while reinforcing transparency, regulatory compliance, and user trust. Support innovation initiatives, such as hackathons, tech sprints, and regulatory sandboxes, to surface, test, and scale new solutions to make digital credit more responsible and strengthen dialogue among authorities, lenders, and tech providers.

Providers have a critical role to play in building consumer trust by offering credit products and services that deliver value without causing harm. By prioritizing consumers, and fostering long-term loyal engagement, providers not only enhance customer value but also strengthen business value, growth, and sustainability.

TABLE 11. **Implementing responsible digital credit solutions in EMDEs requires careful trade-offs**

Provider Solution	Trade-offs and Balances
Borrower authentication methods	Balance strong security with simplicity and accessibility, especially for first-time users, elderly borrowers, and people with disabilities or low digital literacy.
Fraud prevention and detection systems, and AI-driven analytics Fraud reporting, transaction alerts, and accessible borrower support	Ensure informed consent, data minimization, and alignment with privacy laws for biometrics. Balance security with user experience for behavioral biometrics. Manage the tension between real-time fraud detection, explainability, and affordability, especially in low-resource settings. Balance fraud-related actions with customer experience.
Data encryption	Implement robust protections while maintaining system affordability and compatibility with any existing legacy infrastructure.
Transparency and control of borrower data-sharing preferences and consent Clearer credit disclosures and policy updates	Balance transparency and complexity, ensuring lenders do not overwhelm customers with too much detail or prioritize quick user acquisition and lending growth.
AI-enabled chatbots to provide multilingual, 24/7 borrower support	Ensure support is accessible, clear, and concise to avoid overwhelming customers, keeping them informed and protected.
Redundant failover systems, disaster recovery, and offline capabilities	Ensure service continuity without dramatically increasing operational costs, particularly in rural or low-bandwidth regions.
Unbiased algorithms and inclusive data in AI-based credit models	Tailor fairness toolkits with contextual borrower insights, for example, digital behavior and local norms, to avoid reinforcing bias while preserving model performance.
Borrower-centric product design and user experience	Build products that empower informed borrower choices through intuitive and mobile-friendly design.

Source: Authors.

A Call to Action for Funders

Funders can support the development and adoption of solutions led by providers. They can:

- Raise awareness among grantees and investees about the importance of addressing consumer risks in digital credit through a more holistic and customer-centric lens, one that considers the borrower journey, provider life cycle, and risk management cycle.
- Share promising responsible digital credit solutions from this technical guide with providers and offer technical and financial resources to implement solutions suited to the local context.
- Provide financial and nonfinancial support to lenders and those providing responsible lending solutions, demonstrating to the market that there are business opportunities to invest in these solutions. Also, provide incentives (e.g., reduced interest or performance-based rewards) to investees that adopt responsible lending practices.
- Before lending to or investing in digital lenders, including BNPL providers, conduct adequate due diligence on their responsible lending practices and processes to ensure they have adopted or plan to adopt solutions to prevent, identify, mitigate, and resolve consumer risks. Pay special attention to their culture and conduct governance, conduct risk management policies and systems, and financial

product governance procedures that underlie adequate responsible lending practices (Izaguirre 2020).

- Monitor how digital lenders are implementing client protection principles (e.g., Cerise+SPTF 2024; OECD 2022; World Bank Group 2017) and solutions to address consumer risks, including solutions already implemented elsewhere.
- Support hackathons, tech sprints, etc., to surface and test new solutions with tech providers to make digital credit more responsible.
- Promote collaborations among providers, research organizations, or consumer associations to pilot solutions that address overindebtedness, and contributing factors such as behavioral vulnerabilities, and facilitate authority-provider dialogue and peer learning.
- Support the setup, strengthening or reforms of actors that can help make digital credit more responsible, especially when their services account for the needs and complexities of an evolving digital credit market (e.g., credit reporting institutions, debt counsellors).

SECTION V

Frontier Solutions for Responsible Personal Digital Credit: Research Organizations and Consumer Representatives

Role of Research Organizations in Promoting Responsible Digital Credit

Research organizations and networks play a critical role in identifying, preventing, and mitigating consumer risks in digital credit. By analyzing customer experiences, market practices, and emerging threats, they generate evidence that helps shape policies and tools to address issues such as fraud, overindebtedness, and data misuse.

Through partnerships with providers and authorities, research organizations such as CEGA, CGAP, and IPA have developed and tested practical solutions. These include market monitoring tools, credit scoring algorithms, and consumer communication strategies that show promising results in tackling unfair treatment, transparency gaps, and behavioral vulnerabilities in digital credit.

Despite this progress, challenges still remain. Limited access to data, funding constraints, and complex regulatory environments can hinder long-term research and stakeholder collaboration. Addressing these barriers is important to ensure that research continues to inform responsible innovation and consumer protection in digital credit.

Responsible Digital Credit Solutions by Research Organizations

TABLE 12. **Research organization solutions by risk management cycle and consumer risk**

Research Organization Solution	Risk Management Cycle		Consumer Risk and Issue
	Identification	Prevention	
1. Market monitoring—partnering with authorities to conduct phone surveys	⚠		All consumer risks and issues
2. Market monitoring—developing methodologies to analyze social media using artificial intelligence	⚠		
3. Market monitoring—using mobile app metadata to detect fraudulent apps	⚠		Fraud
4. Machine learning models to predict overindebtedness	⚠	⚠	Overindebtedness
5. Piloting gender-differentiated algorithms to improve women's access to credit		⚠	Unfair treatment
6. Communication strategies and formats to increase transparency		⚠	Lack of transparency, Behavioral vulnerabilities

Solution 1: Market Monitoring—Partnering with Authorities to Conduct Phone Surveys

Risk identification • All consumer risks and issues

WHY? (THE PAIN POINTS)

Research organizations and networks often set their own research agendas, which can support market monitoring, typically under the purview of market conduct supervisors (see Section III, Solution 10, and CGAP's Market Monitoring Toolkit) (Izaguirre et al. 2022a). Researchers can play an important role because they serve as neutral third parties that collect demand-side data, providing insights into customers' financial experiences and the reasons noncustomers avoid financial services. Market conduct supervisors can use this data to complement providers' regulatory reports and gain a deeper understanding of emerging issues.

WHAT? (THE SOLUTIONS)

Phone surveys are a cost-effective and efficient way to collect direct borrower data, offering insights into market trends, financial behaviors, and emerging risks. These surveys help monitor consumer issues such as unfair practices and overindebtedness, while enabling demographic segmentation.

CHALLENGES AND LIMITATIONS

Phone surveys face challenges related to sample representativeness and data quality. Mobile phone access remains uneven, with around 30 percent of the global population lacking access, and lower ownership among women and limited coverage in rural areas. Additionally, the quality of responses may be compromised, as interviewers are unable to rely on nonverbal cues to build rapport or sustain engagement.

Examples

IPA implemented random-digit-dial remote phone surveys in **Kenya, Nigeria,** and **Uganda**, in collaboration with national authorities, to surface consumer protection priorities among users of digital finance, including digital credit (IPA 2023a).

CGAP developed digital credit phone survey questionnaires that were piloted in **Kenya** and **Tanzania**, in collaboration with national authorities, to uncover consumer protection risks among digital credit users differentiated by gender and other segments (CGAP 2022a; Kaffenberger 2018).

Solution 2: Market Monitoring—Developing Methodologies to Analyze Social Media Using Artificial Intelligence

Risk identification • All consumer risks and issues

WHY? (THE PAIN POINTS)

With the rise of DFS, consumers are increasingly turning to social media to share their experiences and complaints. Analyzing this content can provide timely and valuable insights into challenges with digital finance, including those related to new products and emerging providers. Social media monitoring can serve as a useful complement to traditional survey methods, offering more frequent and direct access to consumer perspectives.

WHAT? (THE SOLUTIONS)

Research organizations can leverage natural language processing (NLP), a type of AI, to analyze social media content at scale. NLP helps detect complaint trends in social media by processing large volumes of text. It also captures consumer concerns, especially for digital credit apps that lack formal redress mechanisms. Additionally, financial supervisors can use NLP to monitor unregulated digital finance providers by analyzing social media content.

CHALLENGES AND LIMITATIONS

NLP analysis of social media faces challenges in multilingual countries where local slang, dialects and informal language complicate accurate text interpretations. Additionally, data cleaning is critical, requiring sophisticated methods to filter through noise and ensure quality, as unstructured text is rich in irrelevant or misleading information.

Examples

IPA, in collaboration with AI provider **Citibeats**, piloted a social media listening and analysis tool for consumer protection monitoring in DFS, including digital credit, in **Kenya**, **Nigeria**, and **Uganda** (IPA 2023c). They collected historical data on consumer protection-relevant content from Twitter, Facebook pages, and Google Play Store reviews, and analyzed them using NLP approaches.

In a pilot project, **CGAP** and **Decodis** utilized NLP to analyze over 150,000 social media posts and Google Play reviews related to digital lending apps in **India**. The study identified over 25,000 complaints, with significant concerns about aggressive debt collection and fraudulent apps, showing how NLP-based social media monitoring can serve as an effective early warning system for consumer risks in digital lending (Duflos et al. 2021a). In 2022, for the second round of the pilot, the RBIH joined the exercise and utilized the results (Duflos et al. 2023).

Solution 3: Market Monitoring—Using Mobile App Metadata to Detect Fraudulent Apps

Risk identification • Fraud

WHY? (THE PAIN POINTS)

Predatory and fraudulent practices in digital finance, particularly through personal loan apps, have risen globally over the past decade. The widespread adoption of mobile devices, coupled with low financial and digital literacy among many consumers, has made vulnerable individuals and households easy targets. Evidence of exploitative behavior by some app providers has increased concerns about consumer harm and privacy violations. These practices not only cause harm, but also erode trust in digital finance, potentially slowing financial inclusion progress.

WHAT? (THE SOLUTIONS)

To address these risks, research organizations can test market monitoring tools that analyze mobile app metadata and consumer complaints data to identify and flag suspicious digital finance apps. These tools can offer an early warning mechanism for authorities and consumer advocates.

CHALLENGES AND LIMITATIONS

A key limitation of the IPA market monitoring pilot below was its exclusion of non-English apps. Addressing this gap would require developing methods to incorporate text-based analysis or NLP tools adapted to multiple languages.

Examples

IPA piloted a market monitoring tool using mobile app metadata, user reviews, and data downloaded from digital finance apps on the Google Play Store, combined with ML, to flag suspect finance apps. Covering 134,744 unique app IDs across 63 countries from January 2020 to April 2021, the tool analyzed both visible and hidden app store data.

Focusing on personal loan apps, IPA tested two labeling approaches:

1) Manual classification using heuristic techniques and ML models, and

2) Market-specific guidance based on lending regulations in **India**, **Nigeria**, and the **Philippines**.

Both approaches were benchmarked against actual app removals to assess effectiveness. Results indicate that the ML models achieved high (80–90 percent) accuracy for binary classification and fair (70–80 percent) accuracy for multi-class predictions, even using only static input features (Fu and Mishra 2022).

Solution 4: Machine Learning Models to Predict Customer Overindebtedness

Risk identification, prevention • Overindebtedness

WHY? (THE PAIN POINTS)

Debt distress or overindebtedness pose significant challenges, especially for low-income borrowers who often have irregular income streams and limited capacity to absorb financial shocks. Without early detection and intervention, low-income households may resort to harmful coping strategies, such as reducing essential expenditures on education and healthcare, to avoid loan default and maintain access to credit.

WHAT? (THE SOLUTIONS)

To address this, research organizations have collaborated with FSPs to develop and test AI and ML models designed to predict borrower distress. These models use readily available data, such as past repayment behavior, demographic characteristics, and economic activity, to determine borrower distress early.

CHALLENGES AND LIMITATIONS

Despite their promise, ML models may struggle to differentiate between temporary financial strain and long-term distress, leading to false positives or negatives. In addition, black-box models make it difficult for regulators, providers, and borrowers to understand why certain decisions are made.

Examples

In **India**, **Dvara Research**, in collaboration with the **Robert Bosch Center for Data Science and AI at IIT Madras**, has developed an ML model designed to predict distress among borrowers caused by debt. The goal of the project was to identify households at risk of overindebtedness before defaults occurred. The project has tested the model with over 1.5 million customers of a nonbank lender, and validated the results using field surveys (Dvara Research 2023).

Solution 5: Piloting Gender-Differentiated Machine Learning Models to Improve Credit Access for Low-Income Women

Risk prevention • Unfair treatment

WHY? (THE PAIN POINTS)

Credit algorithms can unintentionally disadvantage low-income women due to biases in both data collection and model design. Traditional credit scoring systems often rely on data points such as formal employment records or property ownership, which many low-income women may not have. This absence of relevant data points can lead to lower credit scores, limiting their access to financial services. Additionally, if algorithms are trained on data sets that predominantly reflect typical male financial behaviors, they may not accurately assess the creditworthiness of women, leading to unfair loan rejections or higher interest rates.

WHAT? (THE SOLUTIONS)

Gender-differentiated credit scoring algorithms can address these gaps, by incorporating variables that better reflect women's socioeconomic characteristics and financial behaviors, particularly in low-income settings. These tailored models can more accurately assess creditworthiness and ensure that women who may be unfairly rejected by traditional scoring methods (such as pooled models) gain fair access to credit.

CHALLENGES AND LIMITATIONS

Due to the sensitive nature of the data collected, the pilot in the example below required careful setup of secure data infrastructure, including anonymization and encryption, to comply with local privacy regulations.

Examples

Researchers from **CEGA** partnered with a bank in the **Dominican Republic** to pilot a credit scoring model by analyzing data from 16,091 credit card applicants. They also collaborated with the telco **Claro** to incorporate call detail records and additional sociodemographic data to build a gender-differentiated credit scoring model. The study simulated three credit scoring models (traditional, male-only, and female-only) and found that over one-third of women rejected by the traditional model would be approved by a gender-differentiated model. Preliminary results suggest that about 80 percent of women receive higher credit scores with a gender-differentiated model, which incorporates additional data, including mobile phone usage (CEGA 2023).

Solution 6: Communication Tools and Formats to Increase Transparency

Risk prevention • Lack of transparency, behavioral vulnerabilities

WHY? (THE PAIN POINTS)

A lack of transparency surrounding T&C of digital credit products, due to inaccessible, complex, or unclear information, is a common risk for customers. These risks are often exacerbated by provider practices that exploit behavioral vulnerabilities, such as framing messages in ways that are designed to influence consumer choices. While numerous solutions tackle these risks from various angles (often regulatory), researchers can also play a role through innovation and testing.

WHAT? (THE SOLUTIONS)

In partnership with FSPs, CGAP has conducted pilots to test communication tools and formats to improve transparency in digital credit products. These include interactive SMS messages to enhance engagement with consumers, and the redesign of digital loan application processes to promote clearer understanding of loan T&C.

CHALLENGES AND LIMITATIONS

While certain behavioral messaging strategies can have a positive impact on repayment for subsegments of digital loan borrowers, they need to be rigorously tested and targeted.

Examples

CGAP partnered with **Busara** and **Jumo** in 2015 to design a series of experiments in **Kenya** to measure consumer responses to different communications about a digital credit offer (Mazer et al. 2016). They found that:

- Making consumers actively choose to view or skip summary T&C screens increases the likelihood they will actually read them and improves repayment performance.
- Separating finance charges to make them more salient led to lower default rates.
- Segmenting reminder messages by user type improved repayment performance.

In **Tanzania**, **CGAP** partnered with **Busara** and **Arifu** in 2016 to analyze the account activities of over 21,000 farmers, measuring the impact of Arifu's interactive learning component via SMS on farmers' behavior (Mazer et al. 2017). They found that:

- Interactive SMS increased savings on M-Pawa (doubling, on average).
- Arifu users took out larger loans, maintained lower outstanding amounts, and repaid faster—meaning that customers were more likely to borrow responsibly, improving the sustainability of lending.

Role of Consumer Representatives in Promoting Responsible Digital Credit

Consumer associations are playing an increasingly important role in helping digital borrowers navigate the risks associated with digital credit. These risks can undermine trust in DFS and lead to harmful outcomes for customers. By offering services such as debt counseling, financial education, and complaint assistance, consumer associations empower borrowers to make more informed decisions and seek redress. In addition, their insights from market research and direct engagements with digital borrowers can serve as a valuable resource for regulators, and their advocacy can push for stronger consumer protection policies.

In many markets, consumer associations have successfully investigated and advocated for responsible digital credit, helping to identify and mitigate risks such as predatory lending, misleading terms, and inadequate redress mechanisms. Their advocacy has contributed to greater transparency and increased accountability in the digital credit ecosystem.

Despite their growing influence, consumer associations face persistent challenges. CGAP research highlights that limited and unsustainable funding remains a key constraint to scaling their work (Duflos et al. 2021b). In addition, the complexity of DFS and the fragmentation of the regulatory and supervisory landscape can make it challenging for consumer associations to build in-house capacity to effectively advocate for consumer protection regulations. Responsible Digital Credit Solutions by Consumer Representatives

Responsible Digital Credit Solutions by Consumer Representatives

TABLE 13. **Consumer representative solutions by risk management cycle and consumer risk**

Research Organization Solution	Risk Management Cycle		Consumer Risk and Issue
	Prevention	Mitigation	
1. Consumer advocacy			All consumer risks and issues
2. Consumer investigations on recourse			Inadequate redress

Solution 1: Consumer Advocacy Elevates Consumer Voices in Financial Policy Making

Risk prevention, mitigation • All consumer risks and issues

WHY? (THE PAIN POINTS)

Consumer associations play a critical role in representing the voice of consumers in policy-making processes. Their participation helps to ensure that government policies are informed by the lived experiences and needs of consumers. These groups can help to correct power and information asymmetries in the financial sector, as highlighted in CGAP's Elevating the Collective Consumer Voice paper (Duflos et al. 2021b). Their presence in regulatory dialogues enables vulnerable segments to advocate more effectively for fair treatment and responsible finance.

WHAT? (THE SOLUTIONS)

A consumer advocacy campaign involves a series of actions led by consumer groups to raise awareness and drive change in policy or practice. These campaigns typically include gathering evidence (e.g., compiling consumer complaints), educating the public via traditional and social media, and engaging with a broad range of stakeholders to advocate for change.

CHALLENGES

Consumer organizations, particularly in EMDEs, face persistent challenges. Limited funding and resources constrain their ability to sustain, innovate, or scale their interventions. In addition, many organizations require support to build the technical expertise needed to engage effectively on DFS challenges with policy makers and regulators.

Examples

In 2025, the **Thailand** Consumers Council launched a campaign against preinstalled digital loan apps on smartphone devices that could not be removed. The consumer association has issued several press releases, held conferences, promoted social media messages and videos, gathered consumer stories, demanded concrete actions from authorities and providers, advocated directly with policy makers, and has started a class action lawsuit. As a result, the telco authority prohibited the sales of new Oppo and Realme phone devices. Both companies have indicated that they will send users links with updates to uninstall the loan apps (Thailand Consumers Council 2025).

Solution 2: Consumer Investigations Shed Light on Inadequate Recourse

Risk mitigation • Inadequate redress

WHY? (THE PAIN POINTS)

Inadequate redress mechanisms remain a widespread issue in digital credit. Consumers often face opaque complaint processes, limited dispute resolution options, and poor responsiveness from lenders. Many digital credit providers lack clear channels for consumers to contest unfair fees, incorrect charges, or fraudulent transactions, disproportionately affecting low-income and digitally inexperienced borrowers. Regulatory gaps and weak enforcement further exacerbate the issue, leaving many borrowers without effective recourse when harmed.

WHAT? (THE SOLUTIONS)

Consumer associations can play a critical role by conducting independent investigations into digital credit products and customers' experiences. By collecting real-world data from customers (e.g., through surveys, direct complaints, social media posts, and case studies), consumer associations can build an evidence base to document consumer harm. This information can be used to run public awareness campaigns, as well as to provide evidence for improving consumer protection regulations on digital credit (see Solution 1).

CHALLENGES AND LIMITATIONS

Consumer associations leading such investigations face numerous challenges, including limited data access, difficulties in proving systemic issues, mobilizing affected consumers, pushback from financial institutions, and resource constraints. Despite these obstacles, their work is essential in exposing unfair practices and advocating for stronger consumer protections.

Examples

In 2018, Consumers **Korea** investigated internet blogs and portals, such as Naver, to uncover flaws in the financial consumer redress system. The investigation revealed that many consumers had not received compensation for mis-sold debt cancellation and debt suspension products added to their credit cards despite regulatory actions (Consumers International n.d.). Their findings highlighted inconsistencies in redress procedures, as some credit card companies issued automatic refunds while others required consumers to file complaints and undergo case-by-case reviews. Based on this evidence, Consumers Korea proposed policy improvements for the Financial Supervisory Service to strengthen consumer protection and redress mechanisms.

A Call to Action for Consumer Representatives and Research Organizations

Consumer representatives and research organizations are well-positioned to provide key inputs and incentives that prompt authorities and providers to act on responsible digital credit practices. For example, they can:

- Gather more insights from consumers regarding the experiences, vulnerabilities, and outcomes of their personal digital credit journey.
- Continue to pilot and develop solutions to address consumer risks in digital credit, especially on topics with fewer initiatives (e.g., agent, network downtime, inadequate redress).
- Strengthen institutional capacity to engage in dialogue and collaborate with authorities and providers to develop solutions for preventing, mitigating, and resolving digital credit consumer risks.
- Improve understanding of solutions that authorities and providers have adopted in different jurisdictions and identify those better suited to their local context.
- Inform consumers about prevalent risks associated with digital credit, and ensure access to clear, actionable information on redress mechanisms and support channels, especially in the event of disputes or adverse outcomes, including overindebtedness.

A Call to Action for Funders

Funders have a critical role to play in supporting the development, testing, and adoption of solutions by research organizations and consumer representatives. They can:

- Raise awareness among grantees about the importance of addressing consumer risks in digital credit through a more holistic and customer-centric lens, one that considers the borrower journey, provider life cycle, and risk management cycle.
- Share promising responsible digital credit solutions from this guide with local research and consumer organizations and other market actors who can support or rely on them, and offer technical and financial resources to implement solutions suited to the local context.
- Support consumer associations to more effectively identify and respond to risks in digital credit, advocate for stronger regulation and provider practices, help borrowers address risks and enhance their collaboration with government authorities and providers.
- Support research and consumer organizations in piloting solutions that enhance market monitoring and gain insights that can inform regulatory or policy actions and provider standards or practices that address salient and understudied issues (e.g., behavioral vulnerabilities, agent, network downtime, fraud). Phone surveys, social media monitoring, and mystery shopping provide opportunities for collaboration in market monitoring.
- Fund research initiatives to deepen understanding of behavioral vulnerabilities and the root causes of overindebtedness and declining financial health related to digital credit.

APPENDIX I

Selected Examples of Solutions by Authorities

TABLE 14. **Examples of authority solutions by phase of risk management cycle and consumer risk**

Country	Example	Authority	Risk Management Cycle				Consumer Risk and Issue
			Identification	Prevention	Mitigation	Resolution	
Nigeria	Ecosystem (Cross-agency) Collaboration	Federal Competition and Consumer Protection Commission, and others					All
The Philippines	Data Protection Guidelines	National Privacy Commission					Data misuse
Kenya	Regulation on Disclosure of Digital Transaction Costs	Competition Authority of Kenya					Lack of transparency
European Union	Directives addressing Behavioral Vulnerabilities	European Commission					Behavioral vulnerabilities
South Africa	Requirements on Affordability Assessments	National Credit Regulator					Unfair treatment
United States	Regulations addressing Discrimination and Algorithmic Bias	Consumer Financial Protection Bureau					Unfair treatment
Uganda	Guidelines addressing Abusive Debt Collection	Uganda Microfinance Regulatory Authority					Over-indebtedness
Brazil	Consumer Complaints and Dispute Resolution Scheme	Ministry of Justice's National Consumer Secretariat					Inadequate redress

Nigeria: Ecosystem (Cross-Agency) Collaboration[4]

Federal Competition and Consumer Protection Commission, and others

All risk management phases • All consumer risks and issues

PROBLEM:

Nigerian authorities received a growing number of complaints about digital lenders engaging in harmful debt collection practices, including public shaming and violations of privacy, arbitrary or exploitative interest rates and loan balance calculations, and failure of consumer feedback mechanisms. Initial inquiries revealed that many of the lenders were not legally established or otherwise licensed to provide the services they were offering.

RESPONSE:

In November 2021, the Federal Competition & Consumer Protection Commission (FCCPC) of Nigeria, in partnership with the Independent Corrupt Practices Commission, the National Information Technology Development Agency, and the Central Bank of Nigeria, formed the Joint Regulatory and Enforcement Task Force to rein in the digital credit apps. In 2022, under the Competition and Consumer Protection Act, FCCPC (acting on behalf of the Task Force) established the Interim Framework and Guidelines for Digital Lending. These Guidelines set a deadline (that has since been extended) for digital money lenders already in business and operating on the Google Play Store to comply with the guidelines or risk removal.

RATIONALE/CONTEXT:

Given the intersecting risks and abuses extending beyond the central bank's regulatory perimeter, a coordinated, cross-agency approach was decided upon. FCCPC has jurisdiction over digital lenders as part of its broader consumer protection mandate, which includes money lending. The Central Bank of Nigeria participated in the Task Force but did not take on the role of lead regulator and enforcer.

RESULTS:

The registration period ended in mid-2023. As of late 2023, there were 164 fully approved digital lenders, which grew to 320 by January 2025. In addition, the FCCPC has delisted 47 lending apps in collaboration with Google, placed 88 apps and companies on a watchlist, and placed 42 under conditional approval. The FCCPC publishes the full list of digital lending apps and companies in different stages of approval.

CHALLENGES:

It can be challenging to halt illegal lending apps housed within bigtech app stores and to ensure the firm's cooperation in imposing delisting. Additionally, some Nigerian lenders have resorted to software workarounds, providing consumers with links to visit unregistered websites. During these interactions, consumers' protected, private information is illegally accessed and downloaded.

4 Sources: FCCPC 2021; FCCPC 2023.

The Philippines: Data Protection[5]

General authority: National Privacy Commission

Risk prevention • Data misuse

PROBLEM:

The National Privacy Commission (NPC) of the Philippines received numerous complaints against lenders using online apps that can be downloaded and installed on mobile phones. The online apps provide a platform for processing personal data, including the client's phone contact list, camera, location, and storage. The complaints alleged that the lenders processed their personal data without a lawful basis and used their personal data and data of people in their contact list, causing damage to their reputation, in violation of their rights and freedoms as data subjects.

RESPONSE:

The NPC issued Guidelines on the Processing of personal data for loan-related transactions through two circulars in 2020 and 2023. These guidelines prohibit lenders operating mobile online applications from accessing or harvesting personal information, such as contact lists or social media data, to prevent unfair collection, including the harassment and public shaming of borrowers who fall behind on payments. Additionally, borrowers' photos, obtained via access to phone cameras, may only be used for KYC processes. Lenders are required to provide just-in-time notices before obtaining consumer consent for data collection, clearly informing borrowers about how their data will be processed. Noncompliance with these guidelines can result in fines or imprisonment under the Data Privacy Act. The guidelines apply to fintech lenders, financing companies, individuals or firms engaged in loan processing, and their third-party service providers. However, specially licensed institutions such as banks, investment houses, savings and loan associations, pawnshops, insurance companies, and cooperatives are exempt from these requirements.

RATIONALE/CONTEXT:

The NPC issued the guidelines in response to growing concerns over the misuse of personal data by unlicensed digital lenders. These lenders, which operated beyond the central bank's regulatory perimeter but within the purview of NPC, were the subject of numerous complaints related to abusive debt collection. Licensed financial institutions were excluded from the guidelines, as they are already supervised by the central bank. The guidelines apply the principle that lenders should be prevented from collecting any additional personal data than strictly necessary.

RESULTS:

The 2023 circular, strengthening the guidelines by adding provisions on just-in-time notices and character references, has been in effect for just over a year. The NPC lists enforcement actions on its site, but other data on compliance is not available.

CHALLENGES:

The rapid emergence of new digital lending apps continues to challenge regulators in the Philippines, and beyond, to monitor the market carefully and respond promptly to data abuses.

5 Source: National Privacy Commission 2020.

Kenya: Regulation on Disclosure of Digital Transaction Costs[6]

General authority: Competition Authority of Kenya

Risk prevention • Lack of transparency

PROBLEM:

Pricing transparency was missing from the market in the early 2010s. For instance, Kenya's mobile money market leader M-Pesa, did not disclose fees on mobile handsets during transactions. The Competition Authority of Kenya (CAK) found that consumers were often unaware of the costs of their digital transactions because providers only revealed the fees after consumers had accepted the transaction on their mobile devices. This occurred against the backdrop of a highly concentrated and growing mobile money market and a boom in digital credit.

RESPONSE:

In 2016, CAK issued an order requiring all DFS providers to disclose all applicable charges to customers for mobile money transactions (including microloans) prior to the transaction's completion. This would give consumers an opportunity to cancel, if needed, and to receive a receipt afterward.

RATIONALE/CONTEXT:

At the time, existing credit regulations required timely disclosure of costs only from licensed financial institutions, not from mobile money operators (MMOs). As a result, the dominant operator opted to disclose full cost information only after the transaction was completed, a practice that was more convenient and profitable. Pressure from the financial authorities and the providers was insufficient to impose a prior disclosure rule. This created significant consumer risks and undercut fair competition by enabling regulatory arbitrage by the mobile money operators. CAK was uniquely positioned to issue a uniform requirement for pre-transaction disclosure across the market.

RESULTS:

A follow-up survey of DFS users in Kenya found that the percentage of survey participants who could correctly estimate the cost of their last M-Shwari loan (via M-Pesa) of KES 200 went up from 52 percent before the CAK order to 80 percent afterward.

CHALLENGES:

A central bank directive would have applied only to licensed financial institutions, while the CAK guideline applied to all DFS providers, including unlicensed digital lenders. However, CAK has more limited supervisory and enforcement powers.

6 Sources: Mazer and Garz 2024; Nkhonjera 2017.

EU: Behavioral Vulnerabilities[7]

General authority: European Commission

Risk prevention • Behavioral vulnerabilities

PROBLEM:

The instant, automated, and remote nature of digital credit can heighten consumer risks. With minimal points of friction in the borrower journey, consumers may make hurried, ill-informed and often damaging credit choices, which are irreversible. This points to a behavioral vulnerability of many consumers, which some lenders exploit.

RESPONSE:

In 2023, the EU adopted the Consumer Credit Directive (CCD) and the Directive on financial services contracts concluded at a distance, which require member states to institute harmonized rules updated to reflect changes in the market, especially innovations in digital finance.

The CCD requires member states to ensure that consumers have a right to withdraw from a credit agreement within 14 calendar days without penalty or obligation to provide justification. This right must be clearly stated in the credit agreement. Consumers must notify the lender and repay the principal, and any interest owed. Additionally, consumers must be entitled to early repayment at any time. Under the second directive, the right of withdrawal from distance contracts must be facilitated through a prominent, easy-to-find "withdrawal function" on the provider's interface. The withdrawal function must be clearly labeled, unambiguous, and comprehensible. A confirmation of withdrawal must also be provided, and easily legible, with an acknowledgement of receipt that is sent to consumers. Member states must also ensure that consumers who have exercised the right of withdrawal are no longer bound by a linked credit agreement.

RATIONALE/CONTEXT:

In the EU, digitization has significantly transformed the consumer credit market, introducing practices and risks that were unforeseen under prior Union legislation. In response, member states adopted diverging provisions, resulting in a fragmented regulatory environment. The introduction of updated, harmonized directives on consumer credit helps to maintain a high standard of consumer protection across the EU, while maintaining a level playing field in the single EU market.

RESULTS:

The directives took effect very recently, and efforts to harmonize national laws are underway.

CHALLENGES:

Low-income and low-financial-literacy consumers in particular are susceptible to accepting digital credit that may turn out to be misleading, damaging, or fraudulent. Experiments with introducing withdrawal options and other points of friction show that these can be effective in encouraging consumers to pause, reconsider, and look for better options.

7 Source: European Union 2023a.

South Africa: Product Vulnerabilities[8]

Financial authority: National Credit Regulator

Risk prevention • Unfair treatment

PROBLEM:

Digital credit models speed up loan sales and approvals, which increase the likelihood that consumers may take on new debt without the ability to repay.

RESPONSE:

Under South Africa's National Credit Act of 2005, credit providers are required to conduct "affordability assessments" to evaluate a consumer's financial situation before entering into an agreement. These assessments are intended to help determine if borrowers can responsibly take on more debt. Lenders must consider the following factors: debt repayment history, financial means, prospects and obligations, understanding of risks and costs, and rights and obligations under the agreement. The assessment must also consider whether a loan is for business purposes and whether there is a reasonable prospect of success. Extending credit without this assessment is deemed reckless. The provisions on reckless lending and affordability assessments apply only to loans granted to individuals.

RATIONALE/CONTEXT:

Loan sharking and predatory lending proliferated under apartheid. Since then, South Africa has addressed this problem in multiple phases, resulting in the National Credit Act, which established a specialized National Credit Regulator (NCR) under the Department of Trade and Industry. The Act's provisions on affordability apply to all personal credit provision, including the fast-growing digital lending sector.

RESULTS:

To a large extent, the Act has enhanced financial inclusion. This conclusion is supported by the statistics provided by the National Credit Regulator, which show that credit extension increased by 32.49 percent in 2017 compared to December 2007, six months after all sections of the National Credit Act came into effect.

CHALLENGES:

Some of the provisions, as applied, appear to hinder residential and small business credit, but these have, in part, been mitigated by court decisions.

8 Source: Republic of South Africa 2006.

US: Discrimination and Algorithmic Bias[9]

Financial authority: Consumer Financial Protection Bureau

Risk prevention • Unfair treatment

PROBLEM:

There is growing concern about lenders using complex algorithms to assess creditworthiness while failing to provide explanation for any credit denials required under the Equal Credit Opportunity Act (ECOA) and Regulation B, which implements the Act. Many FSPs use advanced computational methods as part of their credit decision-making, and the most reputable typically provide the rationale behind their credit decisions. Others use "black-box" algorithms, that yield outputs which cannot be readily explained and may reflect biases.

RESPONSE:

In a 2022 circular, the CFPB clarified lenders' duties in this respect. The ECOA requires creditors to provide applicants with a written notice outlining specific reasons for adverse actions taken against them. The specific reasons disclosed must relate to and accurately describe all the key factors considered or scored by a creditor. Creditors who use complex algorithms, including AI or ML, in any aspect of their credit decisions must still provide a notice that discloses the specific principal reasons for taking an adverse action. A creditor cannot justify noncompliance based on the mere fact that the technology it employs to evaluate applications is too complicated or opaque to understand.

RATIONALE/CONTEXT:

The ECOA's notice requirements "were designed to fulfill the twin goals of consumer protection and education." These requirements are designed to advance consumer protection, because "if creditors know they must explain their decisions . . . they [will] effectively be discouraged [from discriminatory practices]." The notice requirement also educates consumers about the reasons for the creditor's action and, therefore, what they need to address in future credit applications.

RESULTS:

The CFPB followed up with a 2023 circular clarifying that creditors cannot simply use the most analogous adverse action rationale listed on the Regulation B forms if that reason is not accurate and specific under the circumstances. The circular also suggests that the CFPB will use the ECOA requirements to increase scrutiny of nontraditional data collected and used in AI models.

CHALLENGES:

The opacity of many credit algorithms challenges both consumers and regulators. Applying Regulation B is complicated by lenders' reliance on "black-box" models and their lack of or inaccurate explanations.

9 Source: CFPB 2022.

Uganda: Abusive Debt Collection[10]

Financial authority: Uganda Microfinance Regulatory Authority

Risk prevention, mitigation • Overindebtedness

PROBLEM:

A surge of predatory digital lending caused increasing concern, especially given the lack of comprehensive regulation and oversight over more than 2,000 loan apps and 200 bottom-tier licensed Microfinance Institutions.

RESPONSE:

In 2024, the Uganda Microfinance Regulatory Authority (UMRA) issued a set of new Digital Lending Guidelines for the SACCOS, nondeposit-taking MFIs, and money lenders licensed under the Tier 4 Microfinance Institutions and Money Lenders Act (2016). The guidelines limit interest penalties and prohibit certain collection methods.

- **Limits on Penalties:** No interest penalty on default that exceeds half the initial interest at the time of loan offering. The maximum recoverable amount is the sum of principal owed and interest as provided in the contract, not exceeding the principal due when the loan becomes nonperforming.
- **Collection Methods Prohibited:** (a) Using threats, obscenity, violence, or other criminal means to physically harm the person, reputation, or property; (b) making unauthorized or unsolicited calls or posting messages to a customer's contacts who were not party to the loan transaction; and (c) any other conduct that harasses, oppresses, or abuses any person in connection with debt collection. Borrowers must be informed in advance of empaneled or assigned collection agents.

RATIONALE/CONTEXT:

The rapid growth of digital lending apps and abusive practices necessitated new, bespoke rules for Tier 4 institutions engaged in digital lending. These entities are regulated not by the central bank but by UMRA. While money lenders are often excluded from financial regulation, Uganda's approach was to bring them under the 2016 Act along with microcredit providers, thus treating their activities on a level playing field.

RESULTS:

The impact of these guidelines and the effectiveness of UMRA's enforcement actions in the market are not clear yet, as UMRA's actions are only beginning to take effect.

CHALLENGES:

Regulators worldwide have struggled to keep pace with the rapid innovation and proliferation of new digital lending apps. This is coupled with the challenge of avoiding uneven treatment and regulatory arbitrage.

10 Source: Uganda Microfinance Regulatory Authority 2024.

Brazil: Consumer Complaints and Dispute Resolution[11]

General authority: Ministry of Justice's National Consumer Secretariat

Risk resolution • Inadequate redress

PROBLEM:

Dispute resolution processes in Brazil were located at the courts and the local offices of the general consumer protection agency (Procon). With the increase in volume and types of online transactions, especially by younger consumers, the types of providers (e.g., fintech lenders), and the relative efficiency of online processes, the need for an online, remote alternative dispute resolution mechanism became evident.

RESPONSE:

In 2014, Brazil launched a national online dispute resolution (ODR) platform, consumidor.gov.br, as an informal forum for consumers and businesses to resolve disputes through direct negotiation and private settlement. The Ministry of Justice's National Consumer Secretariat (Senacon) manages the platform but does not intervene in the process. Business registration on the platform is voluntary, and fintech lenders have joined.

In 2019, "Consumidor.gov.br" was incorporated into the Ministry of Justice platform for electronic judicial process. Upon receiving a consumer complaint, the business has up to 10 days to respond, after which consumers have up to 20 days to accept or reject the proposed solution. Consumers can also provide a publicly visible business satisfaction rating. If an agreement is not reached, consumers can register complaints through traditional redress channels. Information on disputes, filings, and agreements is publicly available.

RATIONALE/CONTEXT:

Alternative dispute resolution mechanisms are necessary complements to the legal system, especially for individual consumers. Technology has expanded the ways in which DFS customers can seek out-of-court redress. ODR mechanisms directly connect consumers with FSPs and regulators, increasing convenience, coverage, and speed of dispute resolution for customers at a low cost.

RESULTS:

The ODR platform served 1,375 businesses and 5.4 million users in 2023. The financial services sector and electronic payments accounted for 31 percent of registered complaints, with 12 percent related to credit, debit, and store cards, and 2.7 percent to online and mobile payment services. Fintechs and other digital lenders have been the subject of thousands of complaints, which have been addressed on the platform. The Banco Central do Brasil's conduct supervision department uses this information to supplement their complaints register for risk analysis.

CHALLENGES:

First, the ODR process is automated, with no human intervention, so algorithmic bias and other technological issues may affect it. Second, the platform is used at relatively low rates by individuals with lower levels of education, residents of poorer regions, and elderly populations. Finally, the disparity in power between complainants and FSPs may need greater consumer information and education.

11 Sources: Consumidor.gov.br n.d.; Ministry of Justice and Public Security n.d.; Suriani 2022.

APPENDIX II

Selected Examples of Solutions by Providers

TABLE 15. **Examples of provider solutions by phase of risk management cycle and consumer risk**

Provider	Type	Example	Risk Management Cycle				Consumer Risk and Issue
			Identification	Prevention	Mitigation	Resolution	
Amazon Web Services (AWS)	Bigtech	Enabling Redundant Failover Systems, Disaster Recovery, and Offline Capabilities		✓	✓		Network downtime
Microsoft Fairlearn	BIgtech	Enabling Fair, Explainable, and Inclusive AI in Digital Credit	✓	✓	✓	✓	Unfair treatment
Google	Bigtech	Enhancing Transparency and Restricting Access to Sensitive Data	✓	✓	✓	✓	Lack of transparency, Data misuse
Apple	Bigtech	Enhancing Transparency and Strengthening Consumer Protection	✓	✓	✓	✓	Lack of transparency, Data misuse

Amazon Web Services (AWS): Enabling Redundant Failover Systems, Disaster Recovery, and Offline Capabilities

Bigtech

Risk prevention, mitigation • Network downtime

PROBLEM:

Digital credit platforms depend on always-on infrastructure to deliver time-sensitive services like loan disbursement and repayment. In low-connectivity settings, any system failure can disrupt services—undermining user trust, delaying payouts, and increasing reputational risks. Providers like AWS offer cloud-based infrastructure that enables resilient and scalable solutions, minimizing service disruptions. However, overreliance on centralized systems introduces operational vulnerabilities.

RESPONSE:

AWS provides a global suite of cloud services that support:

- **Redundant Failover Systems:** These automatically reroute functions to backup systems during outages to maintain uptime.
- **Disaster Recovery**: Enables rapid data recovery by deploying applications and data across multiple availability zones and regions.
- **Scalable Cloud Services:** Scalable services during peak lending periods or repayment cycles, without compromising performance.
- **Offline Resilience:** Enabled cached functions and USSD/SMS–based services for continued functionality in low-bandwidth areas.

RESULTS:

AWS enables reliability, scalability, and resilience. However, digital lenders should still:

- Adopt multicloud or hybrid strategies to mitigate provider dependency.
- Implement data compliance strategies across regions.
- Carry out transparent downtime communication with borrowers to preserve their trust.

For example, Tala leverages AWS for its cloud infrastructure to maintain platform availability and service continuity through regional failover and redundancy systems.

CHALLENGES AND LIMITATIONS:

- **Complexity and Cost:** AWS infrastructure requires skilled technical teams and financial planning to avoid overspending.
- **Data Privacy:** Compliance with local data privacy regulations (e.g., data localization) is critical when operating cross-border.
- **Vendor Lock-In:** Heavy reliance on a single provider limits flexibility and increases exposure to pricing changes or outages.
- **Single Point of Failure:** Incidents such as the Microsoft and CloudStrike outages demonstrate how centralized platforms can lead to cascading disruptions and service outages.
- **Competition Risks:** Cloud providers may also enter adjacent financial services, creating potential conflicts of interest.
- **Security Risks:** If sensitive data, IP, and processes are handled by a single provider, they are at risk if not properly managed.

Microsoft Fairlearn: Enabling Fair, Explainable, and Inclusive AI in Digital Credit

Bigtech

All risk management phases • Unfair treatment

PROBLEM:

AI-based credit scoring can unintentionally produce biased or discriminatory outcomes if trained on nonrepresentative data such as overweighted income, gender, or geographic variables. This can lead to unfair loan rejections and pricing disparities, especially in EMDEs with diverse populations, insufficient data, and limited regulatory oversight.

RESPONSE:

Microsoft's Fairlearn is a community-driven, open-source Python library designed to improve the fairness and transparency of ML models. It helps developers evaluate and mitigate bias in credit scoring, as well as comply with fairness-related AI principles. Key features include:

- Fairness metrics: Demographic parity to measure equal prediction rates across groups, equalized odds to measure equal true positive and false positive rates across groups, and disparate metrics to measure the ratio of positive outcomes between groups.
- Bias detection and mitigation algorithms.
- Tools for model transparency and interpretability.

When conducting a fairness assessment, three main steps should be included: (i) identify who will be harmed, (ii) identify the types of harms anticipated, and (iii) define fairness metrics based on the anticipated harms.

RESULTS:

By using Fairlearn, digital lenders can:

- Detect and reduce bias in credit decisioning.
- Improve transparency for regulators and users.
- Support regulatory compliance with emerging AI fairness and discrimination laws.
- Make more accurate and fair credit decisions.

For example, digital lenders such as Tala, Branch, Lenddo, and CreditMantri have used Fairlearn to improve their processes.

CHALLENGES AND LIMITATIONS:

- **Data Quality and Availability:** To effectively mitigate bias, it would require large, diverse, and high-quality data sets.
- **Scoring Model Complexity:** Fairlearn is better suited to interpretable models; integration with proprietary "black-box" scoring systems can be challenging.
- **Fairness Vs. Accuracy Trade-Offs:** Optimizing for fairness may slightly reduce predictive accuracy—requiring careful calibration.
- **Fairness and Antidiscrimination:** It is also worth noting that addressing algorithm fairness is different from complying with antidiscrimination laws.
- **Ongoing Maintenance:** Fairness must be continually monitored as data and user populations evolve over time.

Google: Enhancing Transparency and Restricting Access to Sensitive Data

Bigtech

All risk management phases • Lack of transparency, data misuse

PROBLEM:

Digital personal lending can operate with limited oversight in some cases, leading to data misuse, a lack of transparency of loan terms, and predatory lending practices. Inconsistent disclosure of terms and unrestricted access to customers' sensitive data—such as contacts, photos, location, and messages—undermine consumer protection, particularly in EMDEs.

RESPONSE:

Google has strengthened borrower protection by enhancing transparency, safeguarding data, and enforcing fair lending practices:

- Google Play Policy Update requires all personal loan apps listed in the Google Play Store to clearly disclose the APR, repayment period, and loan terms (Google's Digital Lending Policy Updates in 2021 and 2023).
- Apps offering loans of 60 days or less or with APRs exceeding 36 percent are banned in the US and restricted in parts of Asia and Africa.

Digital lending apps are prohibited from accessing sensitive customer data such as photos, contacts, videos, precise location, texts, and call logs, unless necessary for loan underwriting and service delivery. (Google's Data Safety Section requires apps to disclose data collection and sharing practices, enhancing user awareness and data privacy compliance.)

RESULTS:

- **Increased borrower protection** by limiting exploitative practices and ensuring transparent lending terms.
- **Enhanced data privacy** by restricting unnecessary access to sensitive user information.
- **Better regulatory alignment with global standards** on financial consumer protection and data privacy.

For example, Google collaborates with regulators and industry associations to curb predatory lending apps in its store. For instance, to be listed on the Google Play Store in emerging markets such as India, Kenya, Nigeria, and the Philippines, digital lenders must prove compliance with local licensing and regulations.

CHALLENGES AND LIMITATIONS:

- **Limited Enforcement Scope:** Policies apply only to lending apps distributed via the official Google Play Store. Digital apps installed through sideloading or third-party stores may still circumvent protections.
- **Implementation Gaps Across Regions:** Enforcement varies geographically, with some emerging markets facing slower rollout or inconsistent enforcement.
- **Developer Circumvention Risks:** Some lenders may attempt to rebrand or repackage their lending apps to evade scrutiny, requiring constant monitoring.

Apple: Enhancing Transparency and Strengthening Consumer Protections

Bigtech

All risk management phases • Lack of transparency, data misuse

PROBLEM:

Predatory digital lending practices, including high-cost short-term loans and misuse of consumer data, have raised significant concerns globally. Borrowers, particularly in EMDEs, are vulnerable to nontransparent loan terms, unfair pricing, and privacy violations. Inconsistent standards across app stores further enabled some lenders to exploit consumers through hidden fees, aggressive data collection, and unclear repayment obligations.

RESPONSE:

Apple has strengthened borrower protections through updated App Store policies for personal loan apps by:

- **Mandatory Disclosure of Key Loan Terms:** App Store guidelines require apps offering personal loans to clearly disclose APR, loan repayment terms, and due dates upfront.
- **Banning Short-Term, High-Cost Loans:** Apps offering loans of 60 days or less or with APRs exceeding 36 percent are banned from the App Store in several regions.
- **Enhanced User Privacy:** Apps are restricted from harvesting sensitive consumer data—such as contacts, photos, call logs, or device information—unless it is essential for loan processing.
- **Strengthened Enforcement:** Apple enforces compliance through periodic app reviews and updates. (Apple revised its App Store Guidelines in 2021 and 2022.)

RESULTS:

- **Increased borrower transparency** by requiring disclosure of clear, consistent loan terms.
- **Strengthened data privacy** by limiting unnecessary access to sensitive personal information.
- **Reduction in predatory lending** by imposing stricter app vetting and enforcement on the App Store.
- **Alignment with global standards** on financial consumer protection and data rights.

For example, Apple's updated App Store policies have helped regulators in emerging markets, such as India and parts of Southeast Asia, identify and restrict predatory loan apps. Lenders must meet local regulatory compliance requirements to remain listed.

CHALLENGES AND LIMITATIONS:

- **Limited Jurisdiction:** Rules only apply to apps distributed via the official Apple App Store; apps downloaded via other channels may still bypass protections.
- **Enforcement Gaps Across Regions:** Implementation consistency varies, with emerging markets sometimes facing slower enforcement.
- **Developer Circumvention Risks:** Some lenders may attempt to rebrand or repackage their lending apps to evade scrutiny, requiring constant monitoring.

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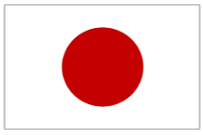
CGAP Members



CGAP members and strategic partners as of June 2025

CGAP Members (continued)

MetLife Foundation

Ministry of Foreign Affairs and International Cooperation

Ministère de l'Économie, des Finances et de la Souveraineté industrielle et numérique — Direction générale du Trésor

Ministry of Foreign Affairs of the Netherlands

Norad

PROPARCO Groupe AFD

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Agency for Development and Cooperation SDC

Sida

SIFEM

Swedfund

The World Bank
IBRD • IDA | World Bank Group

WFP
World Food Programme

UKaid
from the British people

UNCDF
Microfinance • Capital Development

UNDP

CGAP Strategic Partners

AXA

Baillie Gifford

citi

Fundación BBVA Microfinanzas

CGAP members and strategic partners as of June 2025

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