MOBILE INSTANT CREDIT

Impacts, Challenges, and Lessons for Consumer Protection

September 2023

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EVIDENCE ON MOBILE INSTANT CREDIT

The digitization of financial services has enabled tremendous innovation in the provision of credit in low- and middle-income countries (LMICs), which some hail as a transformative development with potential to drive financial inclusion, reduce poverty, and spur economic growth.

However, others associate digital credit with a proliferation of misconduct, consumer abuses, and over-indebtedness, which can have severe consequences for the most vulnerable consumers and amplify inequality.

This report aims to bring evidence and data to bear on this debate, with an emphasis on the more narrow topic of Mobile Instant Credit (MIC), which is primarily targeted towards individuals as consumers and where there is now a sufficient body of research to begin drawing conclusions for digital credit policy more broadly.

Though this sector is quite dynamic and much evidence cited may already feel dated, we hope this attempt to curate relevant evidence and data helps contribute to a shared vocabulary, reference base, and conceptual framework that advances the discussion on the relationship between the digitization of credit and development.

The report reflects a collaboration between CEGA's Digital Credit Observatory and IPA's Financial Consumer Protection Initiative with support from the Bill & Melinda Gates Foundation.

Key takeaways from the report include:

1. Evidence suggests the welfare impacts of digital credit have been modest. Notably, despite alarming anecdotal reports of extreme over-indebtedness, which could harm consumers' financial health, no study included in this review found average impacts that are negative.
2. Nonetheless, there are pressing consumer protection challenges created by the rapid rise in the use of and types of digital credit.
3. Though the evidence on digital credit is growing, much remains unknown. The effectiveness of many types of digital credit remains unexplored and regulatory frameworks are still being developed in many countries around the globe.
4. Existing studies have begun providing insight on the segments adopting loans, how they're being used, financial literacy, and more, all of which may be instructive for informing management and regulation of digital credit products more broadly.

GUIDE TO READING THE REPORT & GLOSSARY

The report is organized into the following sections:

1. **Introduction:** Defines key terms, provides an overview of the market landscape, and summarizes the report's key takeaways.
2. **Welfare Effects of Digital Credit:** Summarizes evidence from a portfolio of 17 studies on digital credit, emphasizing 8 primary studies, organized by key outcomes related to welfare.
3. **Misconduct Associated with Digital Credit:** Defines key forms of misconduct associated with digital credit and provides examples and evidence related to each.
4. **Effects of Consumer Protection Tools:** Outlines existing evidence on the efficacy of interventions aimed at curbing misconduct and improving consumer outcomes.
5. **Ongoing Research and Open Questions:** Discusses the most pressing areas for further investigation.
6. **Summaries of Key Studies:** Provides a more in depth summary of the studies that formed the evidence base in Section 2.

This report is designed so it can be read as a whole, or used in part as a reference guide.

Throughout the report, citations are linked to the References section at the end of the deck. Additionally, each reference is linked to the spot in the report where it is cited, allowing readers to easily navigate back and forth.

While the entire financial services industry is being impacted by rapid digitization, this report does not focus on a number of products and services related to digital credit, such as mobile money or microinsurance, except where there is not sufficient evidence focused specifically on digital credit; this occurs primarily in sections 3 (Misconduct Associated with Digital Credit) and 4 (Effects of Consumer Protection Tools).

Terms & Definitions

BNPL: Buy-Now, Pay-Later, an emerging form of digital credit loan that allows consumers to make installment payments on their purchases.

CRB: Credit Reference Bureau, collates and provides comprehensive consumer credit information to private lenders.

Digital Credit: Loans disbursed and repaid electronically, characterized as instant, automated and remote. This report refers to digital credit, digital loans, and mobile loans interchangeably.

DFS: Digital Financial Services

Formal Borrowing: Borrowing any money from a financial institution or through the use of a credit card or mobile money account.

G2P: Government to Person

Informal Borrowing: Borrowing from a source that is not considered formal, such as borrowing from family or buying from a local store on credit.

IPV: Intimate Partner Violence

IVR: Interactive Voice Response

LMICs: Low- and middle-income countries, as defined and categorized by the World Bank Group.

Loan Term: The length of time from when a loan is disbursed repayment is due.

MIC: Mobile Instant Credit, a form of small digital credit loans typically used for consumption purposes.

MMPs: Mobile Money Providers

MNO: Mobile Network Operator

SMEs: Small & Medium Enterprises

Take-Up Rate: The proportion of customers who, when offered a loan, accept it.

USSD: Unstructured Supplementary Service Data, a protocol for text messaging which DFS platforms often use for communication with customers.

WEE: Women's Economic Empowerment

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INTRODUCTION

1

KEY DEFINITIONS

Mobile

Loans are disbursed and repaid remotely through mobile phones, via a smartphone's mobile application or basic phone's USSD menu, reducing or removing some barriers to access, such as the need to visit a bank branch.

Other Considerations

Automation: Loan processing is also automated, as underwriting decisions are often made using machine learning algorithms. Providers may utilize traditional data (e.g. credit bureau data) as well as non-traditional data (e.g. mobile money usage) for assessing new borrowers' creditworthiness, which can increase access for people without formal credit histories.

Instant

Loans are generally disbursed immediately, and almost always within 24 hours.

This speed also means loan terms can be as short as a few days; most products studied in this review had terms less than a month.

Credit

Loans are targeted towards individual consumers, typically borrowing for short-term consumption.

Other Considerations

Small Loan Size: Most mobile instant credit products offer small loans which can help smooth consumption but are generally too small for productive investments, for example in education or starting a business. Borrowers who repay on time typically become eligible for successively larger loans.

PROBLEM DEFINITIONS AND THEORY OF CHANGE

This review presents evidence exploring the general hypothesis of how access to digital credit may reduce poverty and improve welfare

Problem Definition

Credit, liquidity, and savings constraints can destabilize economic welfare, especially for individuals living close to the poverty line.

Such households may have trouble responding to a negative economic shock such as an unexpected health expense.

These shocks are common: in a broad, 16 country study, 10-35% of households reported experiencing a shock in the past year[1], and a study in India found that nearly half of households considered non-poor experienced at least one month of poverty during a year[2].

To mitigate the risks associated with these shocks, many households maintain some savings as a buffer, limiting their potential to use these assets more productively.

Theory of Change

Financial services enable safe and affordable savings, payments, and other transactions. Informal mechanisms, on the other hand, may be less reliable, less secure, and more expensive.

Individuals with access to formal financial services have been shown to be more resilient to financial shocks than those that do not[3]. Mobile money in particular has been shown to enable consumption smoothing, and mobile money users are more likely to send and receive remittances[4].

Access to digital loans with minimal transaction costs could enable borrowers to smooth consumption and improve welfare when dealing with unexpected costs.* Further, access to credit may have the indirect effect of enabling assets or savings held as a buffer against shocks to be released for other, higher utility uses.

** Credit may also enable investments and risk-taking; however, this deck focuses small loans which are unlikely to be used for productive investments.*

MOBILE INSTANT CREDIT AND MICROFINANCE

Though microfinance was once considered an exciting avenue for expanding financial inclusion, most rigorous studies showed that it did not live up to its promise

- Microfinance (alternatively microcredit) refers to small loans offered to individuals, particularly entrepreneurs, typically excluded from formal finance. Microcredit aims to reduce poverty by promoting entrepreneurship and increasing financial inclusion.
- Microfinance and digital credit are closely related, although they differ in several key ways. Because of this, it is important to acknowledge the implications of microcredit evidence for Mobile Instant Credit (MIC) and other digital credit products.
- J-PAL's Microcredit Policy Insight provides a more detailed summary of the evidence on microcredit.

Feature	Compare & Contrast	Implications
Purpose *Text if needed*	Both Microfinance and Digital Credit aim to promote financial inclusion by increasing access to credit, thereby reducing poverty.	Because microfinance and digital credit are related, the evidence on microcredit is meaningful for interpreting research on MIC and other digital credit products.
Target Consumer *Text if needed*	Microfinance typically focuses on entrepreneurship whereas digital credit products have more potential use cases. MIC loans in particular are generally used for consumption.	Microcredit's focus on entrepreneurs may limit the number and type of customers that loans are well-suited for.
Loan Size *Text if needed*	Microcredit loans are typically larger and offered through physical branches. In an analysis of six microcredit evaluations, initial loan sizes (PPP USD) ranged from $450 to $1600[1], as compared to $1 to $100 for most digital credit studies in this review.	This may make microcredit less accessible to the average customer, reducing its impact relative to digital credit.
Take-Up *Text if needed*	Microcredit has generally seen modest take-up rates – often less than 33%[1]. Studies on digital credit have generally found higher take-up, typically ranging from 33 – 70%[2].	Higher take-up rates support the notion that digital credit's greater variety of loan terms and smaller average loan sizes may make these products more accessible than microfinance.
Impacts *Text if needed*	Randomized experiments on the impact of microcredit across different contexts generally found that the product did not have transformative effects on poverty. Early results from evaluations of digital credit show more promise, but similarly do not indicate that the impacts have been transformative.	Research has found that microcredit has different impacts for different types of borrowers[1], suggesting that standardized products are not tailored to customers' needs. While digital credit's impacts likely vary similarly, more research is needed.

Note: This review is primarily focused on unsecured, cash loans which are a subset of the broader digital credit product suite and referred to here as Mobile Instant Credit (MIC).

However, larger loan products like Asset Financing and new models like Overdraft Facilities or Buy-Now, Pay-Later (BNPL) are entering the space. And in some cases, traditional microfinance lenders are beginning to digitize their efforts, blurring the lines between microfinance and digital credit. Recognizing that the impacts of these products may differ from MIC, they are outside the scope of this review.

FORMS OF DIGITAL CREDIT

Digital credit has grown rapidly and now includes a wide variety of product types.

Airtime Loans
Small airtime advances for a fee

Automotive Financing
Secured loan to purchase a vehicle

Credit Cards
Unsecured revolving line of credit

E-Commerce Buy Now, Pay Later
Unrestricted purchase divided into installments

Education/ Funeral Loans
Loans for consumer-specific purposes

Fixed Asset-Based Financing
Use of balance sheet assets to borrow

Gold Loans
Borrowing against gold

Group Microfinance: Group Liability
Use of social rather than material capital

Group Microfinance: Individual Liability
Borrowing against group setting but borrower is at risk only upon default

Home Mortgages
Borrowing against home

Input Financing
Capital to purchase agricultural inputs

Invoice Factoring
Supplier sells invoices to an external party at discount

Mobile Instant Credit
Small, fast, mobile-enabled loans

Overdraft
Allows transactions despite insufficient funds

P2P Lending
Connects borrowers with individual lenders

Pay-As-You-Go Buy Now, Pay Later (Solar)
Specific purchase divided into installments

Payroll Facilitation Service
Salary-on-demand without interest

Rent-to-Own Capital Equipment
Allows renting an equipment with option of buying

Reverse Factoring
Buyer sells invoices to an external party at discount

Revolving Business Credit
Revolving line of productive credit

Salary Loans
Loans paid with interest from salary

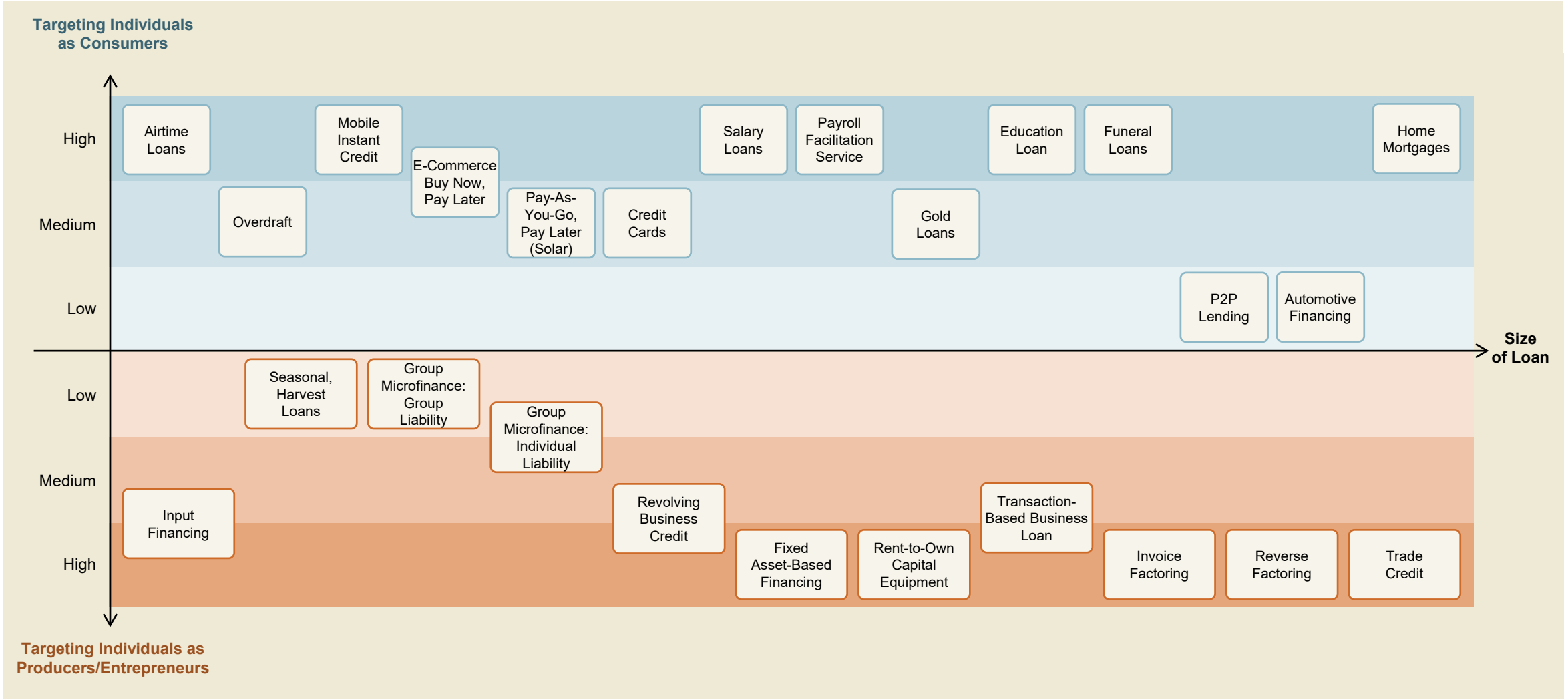
Seasonal, Harvest Loans
Agricultural output-based loan for general use

Trade Credit
Later payment of goods and services instead of on delivery

Transaction-Based Business Loan
Loans underwritten by cash flow data

The chart above includes many prominent forms of digital credit available in developing countries.

FORMS OF DIGITAL CREDIT



High: Intensive use. Low: Low use, could be used for Productive or Consumer credit.
The chart above includes many prominent forms of digital credit available in developing countries. Values are approximated based on an online review of provider information across developing countries and information provided in relevant academic studies.

CREDIT TYPES: KEY PARAMETERS

Targeting Individuals as Consumers — Targeting Individuals as Producers/Entrepreneurs — Informal Loans

High ↑ Low

Level of Security (Collateralization)	Unsecured	Semi-Secured	Secured
Rent-to-Own Capital Equipment			•
Fixed Asset-Based Financing			•
Trade Credit			•
Reverse Factoring			•
Invoice Factoring			•
Transaction-Based Business Loan			•
Revolving Business Credit			•
Home Mortgages			•
Gold Loans			•
Automotive Financing			•
Pay-As-You-Go Buy Now, Pay Later (Solar)			•
Group Microfinance: Group Liability		•	
Informal Lenders		•	
Loans from Family and Friends		•	
Salary Loans		•	
Group Microfinance: Individual Liability		•	
Overdraft		•	
Airtime Loans		•	
Input Financing	•		
Seasonal, Harvest Loans	•		
P2P Lending	•		
Education/Funeral Loans	•		
Payroll Facilitation Service	•		
Credit Cards	•		
E-Commerce Buy Now, Pay Later	•		
Mobile Instant Credit ★	•		

Flexibility of Loan Use	Low	Low/Med	Med	Med/Hi	High
Credit Cards					•
Gold Loans					•
Payroll Facilitation Service					•
Salary Loans					•
P2P Lending					•
Education/Funeral Loans					•
E-Commerce Buy Now, Pay Later					•
Revolving Business Credit					•
Group Microfinance: Individual Liability					•
Seasonal, Harvest Loans					•
Informal Lenders				•	
Group Microfinance: Group Liability				•	
Home Mortgages				•	
Loans from Family and Friends		•			
Trade Credit		•			
Transaction-Based Business Loan		•			
Mobile Instant Credit ★		•			
Overdraft		•			
Pay-As-You-Go Buy Now, Pay Later (Solar)		•			
Reverse Factoring	•				
Invoice Factoring	•				
Rent-to-Own Capital Equipment	•				
Fixed Asset-Based Financing	•				
Input Financing	•				
Automotive Financing	•				
Airtime Loans	•				

Intensity of Human Interaction	Low	Low/Med	Med	Med/Hi	High
Loans from Family and Friends					•
Informal Lenders					•
Group Microfinance: Group Liability					•
Group Microfinance: Individual Liability					•
Gold Loans					•
Seasonal, Harvest Loans				•	
Input Financing				•	
Fixed Asset-based Financing		•			
Rent-to-Own Capital Equipment		•			
Trade Credit		•			
Reverse Factoring		•			
Invoice Factoring		•			
Transaction-Based Business loan		•			
Revolving Business Credit		•			
Home Mortgages		•			
Automotive Financing		•			
P2P Lending		•			
Education/Funeral Loans		•			
Payroll Facilitation Service		•			
Salary Loans		•			
Credit Cards	•				
Pay-As-You-Go Buy Now, Pay Later (Solar)	•				
E-Commerce Buy Now, Pay Later	•				
Mobile Instant Credit ★	•				
Overdraft	•				
Airtime Loans	•				

The chart above includes many prominent forms of digital credit available in developing countries. Informal loans, highlighted in yellow, are the most common alternatives to digital credit for consumers in low- and middle-income countries. In 2021, almost half of borrowers reported that family and friends were their only source of credit. Cite 2021 Findex Values are approximated based on an online review of provider information across developing countries and information provided in relevant academic studies.

COMMON FORMS OF MOBILE INSTANT CREDIT

Model	**Bank-Telco** *Offered on the mobile money platform of the Telco, with the Bank providing capital. Typically feature small loans and high interest rates or fees.*	**Bank-Fintech** *Offered through a Fintech platform, with the bank providing capital. Loan sizes can be larger than in Bank-Telco partnerships.*	**Non-Bank Fintech** *Digital loans offered by fintech firms without the intermediation of a bank*
Example	M-Shwari (Kenya)	WeBank (China)	Tala (Kenya, Philippines, Mexico, India)
Average Loan Size ($USD)	$1–100	$70–44,000	$10–500
Typical Fees	7.5% (per month)	Average 18% (APR)	5–15% Extension Fee 8%
Typical Terms	Up to 30 Days	Up to 20 Months	21–90 Days

Information on loan sizes, fees, and terms from Robinson et al. (2022)[1].

MARKET FOR DIGITAL CREDIT

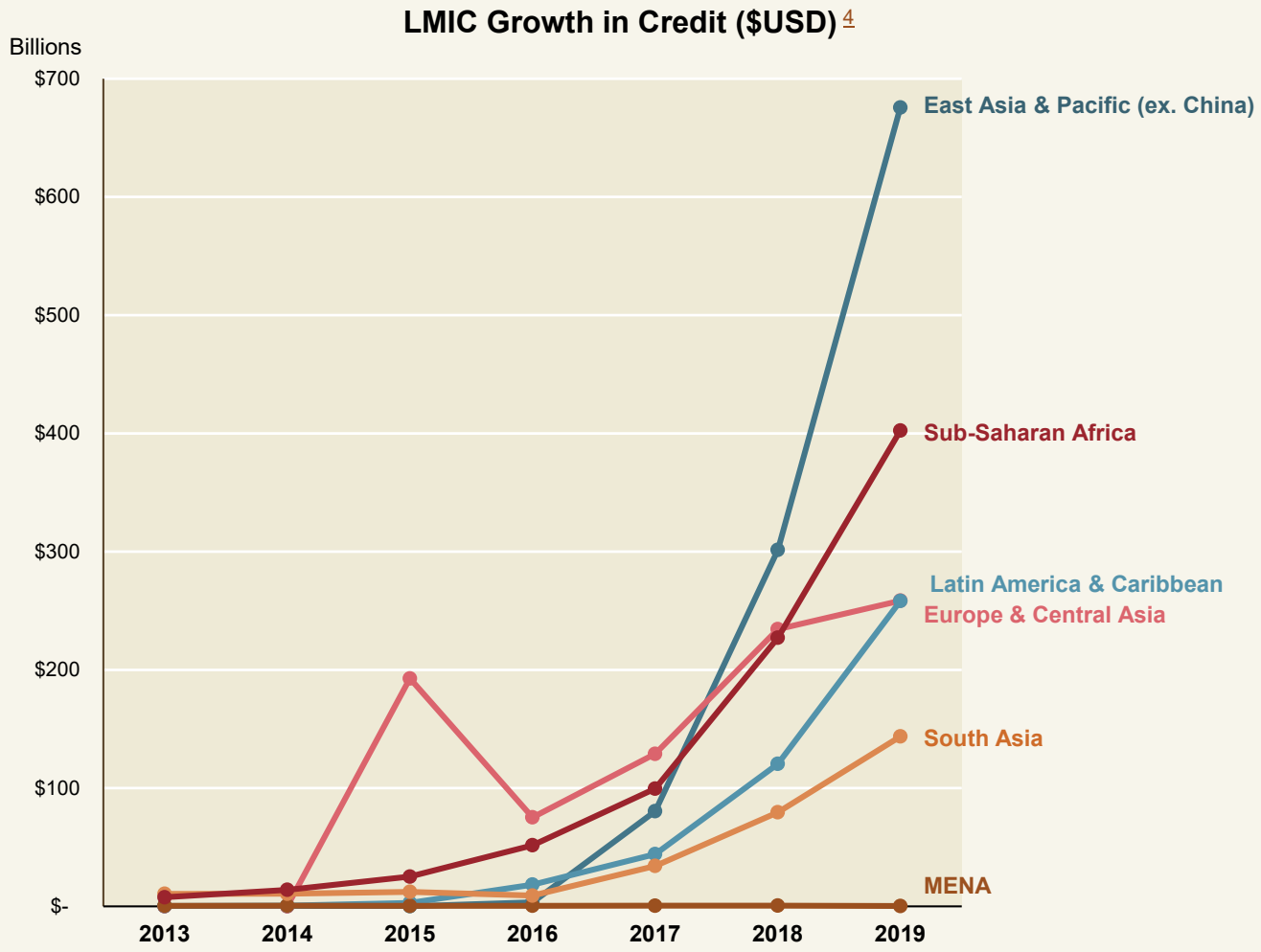
Providers

In 2012, Safaricom and the Commercial Bank of Africa launched M-Shwari, the first loan product offered via mobile device.

M-Shwari made 20 million loans to 2.6 million borrowers during the first two years[1].

53% of all mobile money providers (MMPs) offered a digital loan product, making credit the most prevalent non-payment service offered by MMPs[2].

Most providers offer between 1–5 credit products, and the majority of digital credit products were launched after 2019, meaning it is still a fairly new industry[3].



Users

From 2014 to 2021, the share of adults that were borrowing formally rose from 16% to 23%[5].

Digital loans disbursed in June 2020 alone were worth $423 million[3].

Digital credit has spread globally. A few prominent examples and the year they launched:

- WeBank (2015): 28mm users in China
- KakaoBank (2016): 14mm users in South Korea
- Tala (2014): 6mm users in Kenya, Philippines, Mexico, & India
- Digicel (2015): 10mm users in Latin America and Caribbean

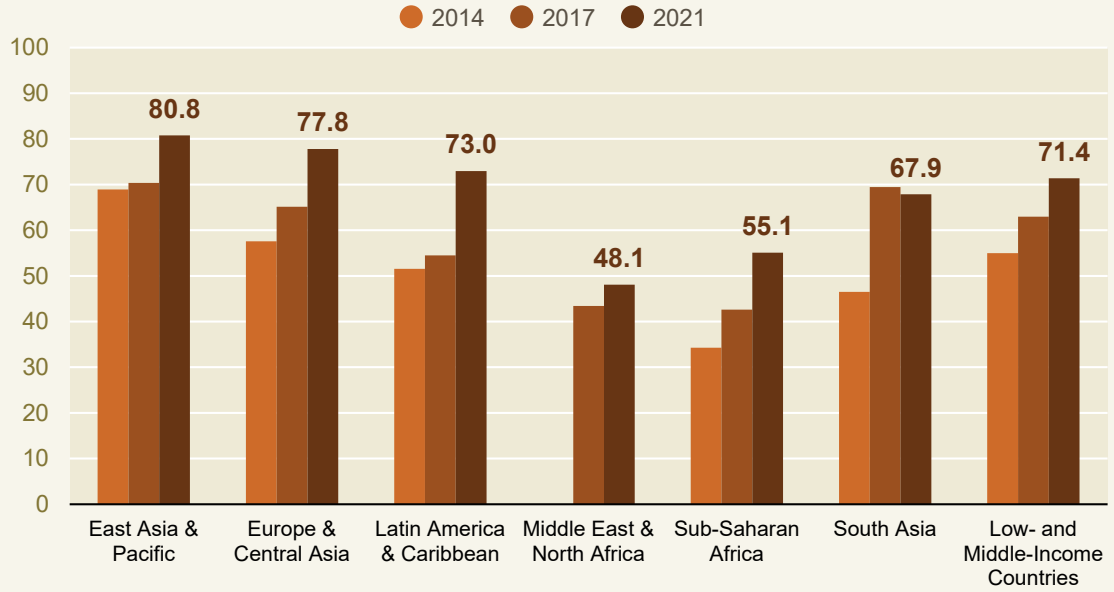
In Figure 1 (LMIC Growth in Credit ($USD)) , the figures reported are only for low- and middle-income countries in each region. Figures for East Asia & Pacific are reported exclusive of data for China, as total credit disbursed in China (USD $62.6 trillion vs. $1.7 trillion for all other LMICs combined in 2019) is sufficiently large to obscure broader trends across LMICs if presented on a single graph.

FINDEX DATA SHOWS PROGRESS ON FINANCIAL INCLUSION

World Bank Group's Global Findex[1] data shows that account ownership is growing and translating into more formal access, but there is still work to be done

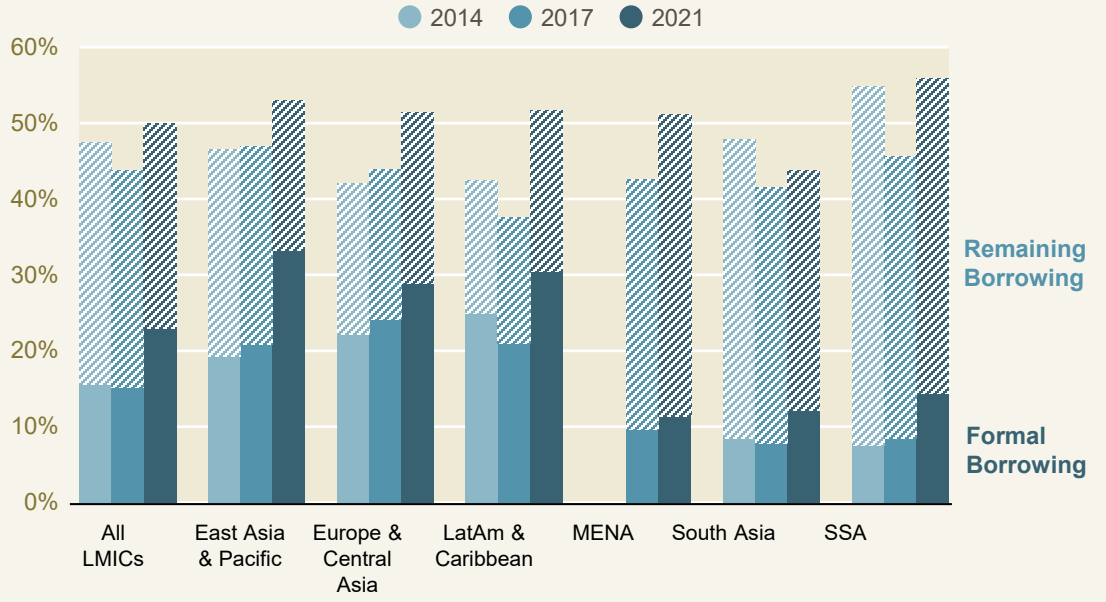
Account Ownership (% of adults)

- Account ownership across low- and middle-income countries (LMICs) has risen from 55% in 2014 to 71% in 2021.
- However, these increases have not been uniform. While account ownership jumped 12% from 2017 to 2021 in Sub-Saharan Africa, South Asia saw a small 1% decline in the same metric.



Formal vs. Total Borrowing (% of adults)

- Across low- and middle-income countries, formal borrowing has risen as a percentage of total borrowing following increases in account ownership.
- Sub-Saharan Africa and South Asia have seen some of the largest percentage increases in formal borrowing, but still have much lower levels of formality than LMICs in other regions.
- Informal or semi-formal methods of borrowing, like borrowing from family or buying from a local store on credit, can be less safe, less reliable, and more costly than formal borrowing.



METHODOLOGIES

The deck draws on experimental and quasi-experimental studies, descriptive research and case studies.

These methods utilize different types of data, and it's important to understand how to interpret the results.

Notably, the studies that reveal causal relationships are impact evaluations, which utilize randomization, and quasi-experiments, which are used when randomization is infeasible.

Impact Evaluations

Impact evaluations are rigorous studies that examine the effectiveness of development programs.

Impact evaluations utilize random assignment to create a treatment and comparison group.

Any observed differences from between the two groups can be attributed to the program, thus providing insight into which interventions work or don't work.

Data

- Surveys
- Administrative data

Quasi-Experimental

Quasi-experimental methods also aim to measure the effectiveness of development programs, but without random assignment.

Quasi-experimental methods may instead rely on natural variation or eligibility cutoffs to "assign' treatment and comparison groups.

These methods are useful when true randomization is either impractical or unethical.

Data

- Surveys
- Administrative data

Descriptive Research

Descriptive research examines why a particular situation or phenomenon occurs and measures it, but does not seek to establish a causal relationship.

Unlike experimental impact evaluations, descriptive research does not use treatment and comparison groups to measure the impact of programs. Instead, researchers systematically characterize a population or situation.

Data

- Surveys
- Administrative data
- Mixed methods

Case Studies & Policy Analysis

Case studies explores complex issues by systematically investigating a single individual, business or other real situation.

Though case studies are in-depth analyses of a singular situation, they may be generalizable to larger policy, business and other issues.

Data

- Observations
- Qualitative Interviews and Focus Groups
- Desk Research

KEY TAKEAWAYS

Limited Impacts

Evidence suggests that digital credit has led to modest improvements in resilience and subjective wellbeing, but it has not had transformative effects on welfare.

1

Urgent Challenges

The proliferation of digital credit creates urgency for addressing consumer protection challenges, including high and hidden fees, over-indebtedness, post-contract exploitation, fraud, and discrimination.

2

Open Questions

Existing evidence on MIC loans suggest modest impacts. There remain open questions about how the diversity of sources and forms of digital credit affect individual welfare and ways to effectively protect consumers from credit risks with regulation or interventions.

3

Insights for Policy

Insights from the existing studies on MIC loans documented here - the segments that adopt these loans, the use of the loans, knowledge or lack thereof of loan terms, etc. - may be instructive for informing management and regulation of credit products more broadly.

4

WELFARE EFFECTS OF DIGITAL CREDIT

2

WELFARE EFFECTS OF DIGITAL CREDIT

	Study Name & Authors	Form of Digital Credit	Time Period for Measuring Outcomes	Take Up Rate	Average Loan Size (USD)	Average Total Loan Value (USD)	Default Rate
1	**Fintech and Household Resilience to Shocks: Evidence from Digital Loans in Kenya** *Suri, Tavneet, Prashant Bharadwaj, and William Jack (2021)*	Mobile Instant Credit	18 months	34%	$2.80	$25	7%
2	**Digital Credit: Filling a Hole, or Digging a hole? Evidence from Malawi** *Brailovskaya, Valentina, Pascaline Dupas, and Jonathan Robinson (2021)*	Mobile Instant Credit	11 months	35%	$1.25	$2	15%
3	**The Impacts of Liquidity Loans to Mobile Money Agents** *Toth, Russell, Siobhan Herbert (2021)*	Business Loan	13 months	12%	$1,166	$2,200	0.7%
4	**Liquidity or Convenience? Heterogeneous Impacts of Mobile Airtime Loans on Network Usage and Communication Expenditure** *Barriga-Cabanillas, Oscar and Travis J. Lybbert (2021)*	Airtime Loans	11 months	70%	$0.50	$2	< 2%
5	**Effects of Increasing Credit Limit in Digital Microlending: A Study of Airtime Lending in East Africa** *Shema, Alain (2021)*	Airtime Loans	8 months	45%	$0.11	$13	2-3%
6	**Welfare Impacts of Digital Credit: A Randomized Evaluation in Nigeria** *Björkegren, Daniel, Joshua E. Blumenstock, Omowunmi Folajimi-Senjobi, Jacqueline Mauro, and Suraj R. Nair (2021)*	Mobile Instant Credit	3 months	85%	$15	$56	7%
7	**Too Fast, Too Furious? Digital Credit Speed and Repayment Rates** *Burlando, Alfredo, Michael Kuhn, and Silvia Prina (2021)*	Mobile Instant Credit	7 months	-	$91	n/a *(No Data)*	27%
8	**Digital Credit and Agriculture: A Randomized Experiment in Ghana** *Karlan, Dean, Monica Lambon-Quayefio, Utsav Manjeer, and Christopher Udry (2020)*	Agricultural Input Credit	6 months	60%	$40	$40 *(One-Time Loan)*	-

Note: all monetary values in USD. Studies differ in their period over which outcomes were measured, so are not directly comparable – see first column. Average Total Loan Value refers to the total amount borrowed by the average study participants over the course of the study, accounting for repeat borrowing. We do not report take-up for Burlando et al. (2021) because their sample is restricted to people approved for loans.

WELFARE EFFECTS OF DIGITAL CREDIT

	Study Name & Authors	Intervention	Geography	Impacts: Repayment	Resilience	Consumption or Expenditure	Assets or Savings	Network Cellular Usage	Financial Health	Subjective Wellbeing	Digital Credit and Gender
1	**Fintech and Household Resilience to Shocks: Evidence from Digital Loans in Kenya** *Suri, Tavneet, Prashant Bharadwaj, and William Jack (2021)*	Access to MIC loans	Kenya		Positive	Neutral	Neutral				
2	**Digital Credit: Filling a Hole, or Digging a hole? Evidence from Malawi** *Brailovskaya, Valentina, Pascaline Dupas, and Jonathan Robinson (2021)*	1. Access to MIC loans 2. Financial Literacy training	Malawi	Mixed	Neutral		Neutral	Neutral	Neutral	Positive	Neutral
3	**The Impacts of Liquidity Loans to Mobile Money Agents** *Toth, Russell, Siobhan Herbert (2021)*	Increased loan size for mobile money agents	Myanmar		Neutral			Neutral[1]			Neutral
4	**Liquidity or Convenience? Heterogeneous Impacts of Mobile Airtime Loans on Network Usage and Communication Expenditure** *Barriga-Cabanillas, Oscar and Travis J. Lybbert (2021)*	Access to airtime loans	Haiti			Positive		Neutral			Neutral
5	**Effects of Increasing Credit Limit in Digital Microlending: A Study of Airtime Lending in East Africa** *Shema, Alain (2021)*	Changing credit limits	Anonymous East African Country	Negative		Negative		Neutral			
6	**Welfare Impacts of Digital Credit: A Randomized Evaluation in Nigeria** *Björkegren, Daniel, Joshua E. Blumenstock, Omowunmi Folajimi-Senjobi, Jacqueline Mauro, and Suraj R. Nair (2021)*	1. Vary access to MIC loans 2. Vary the amount of credit customers receive	Nigeria		Neutral	Neutral	Neutral		Neutral	Positive	Neutral
7	**Too Fast, Too Furious? Digital Credit Speed and Repayment Rates** *Burlando, Alfredo, Michael Kuhn, and Silvia Prina (2021)*	Speed of MIC loan disbursement	Mexico	Positive							Neutral
8	**Digital Credit and Agriculture: A Randomized Experiment in Ghana** *Karlan, Dean, Monica Lambon-Quayefio, Utsav Manjeer, and Christopher Udry (2020)*	Access to agricultural input credit through a digital lending product	Ghana		Neutral[2]	Positive	Neutral		Neutral	Positive	Mixed

1. Impacts for agents' businesses (not borrowers' usage) 2. Damage from shocks, food security index

REPAYMENT

Default rates can be high with MIC products, but a variety of studies have shown that interventions can improve repayment rates

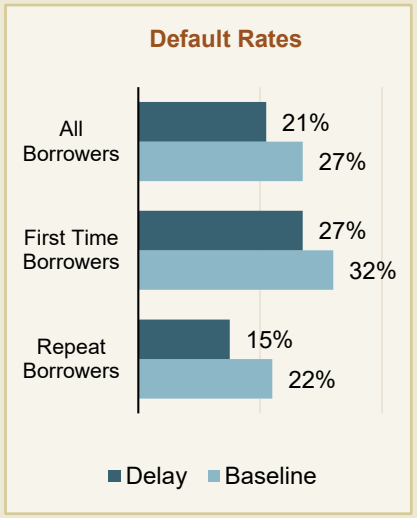
Definition: Measures the frequency with which loans are fully paid back, and paid back on time.

Results: These studies report mixed evidence on the effectiveness of interventions to improve repayment.

Positive Impact

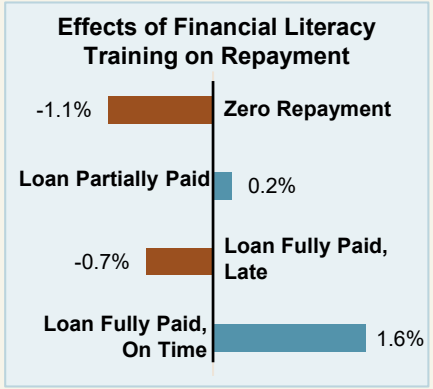
Longer wait times for loans led to a significant reduction in the probability of default.

A study in Mexico[1] found that delays in loan disbursement were associated with a 5.6pp reduction in default rates (on a base of 27%, for an effect size of 21%). These results suggest that wait times may play an important role in repayment rates.



Mixed Impact

Recipients of an Interactive Voice Response (IVR) Financial Literacy treatment were more knowledgeable of loan terms and conditions, repaid loans on time at higher rates, and had lower levels of zero repayment[2].



However, the treatment also **increased demand for future loans**. While individuals were less likely to default on any given loan, their probability of defaulting across all loans actually *increased*.

Negative Impact

Increased credit limits led to decreased repayment rates for customers of a Mobile Network Operator (MNO) in East Africa[3].

Customers whose credit limit increased saw an initial 13.6% decrease in their repayment rate. Over the full study, the gap in repayment rates was about 10%.

Effects were not as strong for customers with longer borrowing history and smaller loans, suggesting that experience contributes to customers' willingness and/or ability to repay.

These results suggest that lack of experience or knowledge about MIC products may contribute to high default rates, but that steps can be taken to facilitate repayment.

RESILIENCE

Studies offered mixed evidence on whether MIC can bolster resilience to shocks.

Definition: An ability to respond to different types of negative shocks such as an unexpected health expense.

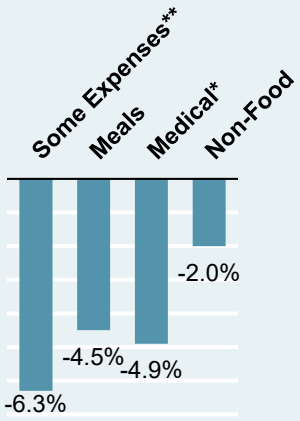
Results: These studies report mixed evidence on digital credit's effect on resilience.

Positive Impact

M-Shwari loans improved resilience

A study in Kenya[1] found that households who utilized M-Shwari were 6% less likely to forego expenses due to any negative shock and 5% less likely to forego expenses due to a medical shock.

Change in Likelihood of Foregoing Expenses



Neutral Impact

Small loans in Malawi did not improve shock coping

In Malawi, Airtel Malawi's Kutchova product did not have an effect on coping with shocks[2].

Loan sizes range from USD$1.40-14.00, and the average customer in the study took USD$3.93 in loans. Given the small loan sizes, this result on resilience is not surprising.

$26
Median Amount Needed to Fully Cope with a Shock

vs.

$2
Median Loan Taken by Study Participants

Neutral Impact

Digital credit in Nigeria failed to impact resilience

A study in Nigeria[3] studied a small consumer-focused digital credit product from a fintech and did not find any effects on shock-coping or resilience.

Neutral Impact

Agricultural credit product did not improve households ability to cope with shocks

In Ghana, farmers who used an agricultural inputs credit product did not show improved food security[4].

Neutral Impact

Loans to mobile money agents did not impact resilience.

In Myanmar, receiving larger loans did not have an impact on mobile money agents' resilience to shocks[5].

CONSUMPTION OR EXPENDITURES

Studies generally found credit to have a small, but positive effect on consumption. Effects on specific types of spending were often more pronounced.

Definition: Total spending on goods, services, investment, etc.

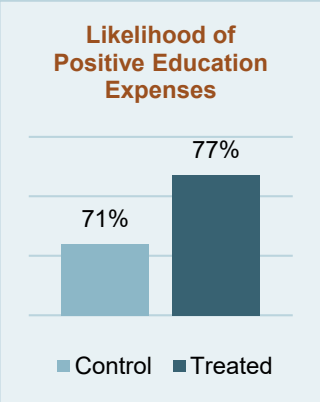
Results: Most studies found that access to credit had a positive, but insignificant impact on total expenditures. However, in some cases, there were increases in expenditure on specific items which were significant.

On the flipside, Shema finds that a sudden increase in airtime credit limits for customers of an East African MNO led to a small initial increase in spending, followed by a large decline in airtime spending and recharges. This appears to be driven by the fact that clients, with newfound access to credit, overextend themselves and begin to repay at lower rates, inhibiting their ability to buy new airtime and in some cases, seemingly causing them to leave the network altogether.

Neutral Impact

Access to M-Shwari did not affect spending broadly, but did have a large impact on education spending.

A study in Kenya[1] found small and insignificant impacts on most measures of expenditure, except education expenses. Money from loans may be spent on items customers would have foregone without credit; this happens to be education.

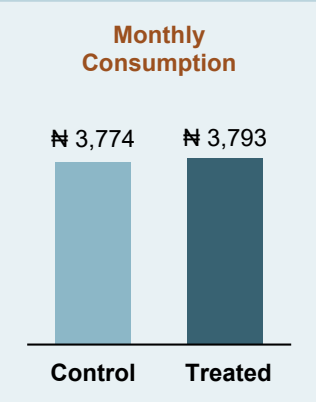


Neutral Impact

Digital credit in Nigeria did not affect income or expenditures

A study in Nigeria[2] did not find any effects on income or expenditures. The study focuses on the credit offering from an anonymous fintech.

The difference between the two groups is not economically meaningful, and is statistically indistinguishable from zero.

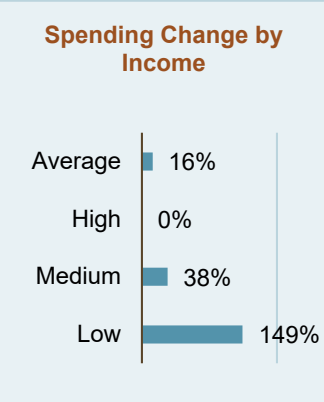


Positive Impact

Access to airtime loans in Haiti increased total communication expenditures. Impacts varied by income levels and primarily affected lower income individuals.

The average consumer increased airtime spending by 16%, but the impact varied widely by income tercile.

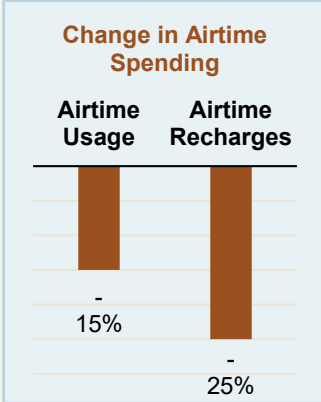
The results suggest that access to credit crowds-in additional expenditure[3].



Negative Impact

Increased credit limits led to short-term increases in borrowing, but were quickly followed by large and persistent declines in airtime borrowing and spending.

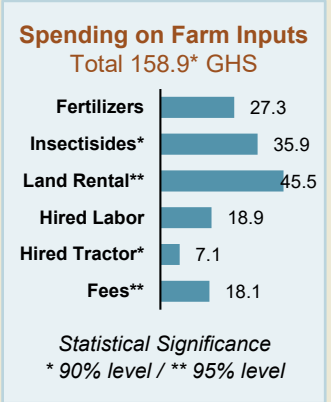
After an initial period of increased spending, customers who had their credit limits raised borrowed and recharged airtime 15% and 25% less, respectively, which may indicate that customers became over-indebted when credit was easily available[4].



Positive Impact

Access to input credit led farmers to spend more on complementary inputs.

Treatment farmers received input credit worth up to GHS 350 (about USD $75) in this study in Ghana[5]. The evidence suggests other inputs were viewed as complements to the input credits received.



ASSETS OR SAVINGS

Despite to fears that servicing debt would cause reduced savings rates, no included studies found that MIC impacted savings or assets.

Definition: The value of assets owned (i.e. a home) and savings.

Results: The studies included in this review did not find that digital credit had an impact on customers' savings or asset ownership.

Neutral Impact

Access to M-Swhari did not have an impact on customers' total savings.

A study in Kenya[1] found small and insignificant impacts on assets as well as savings. Individuals did report using a larger number of savings vehicles, which the authors attribute in part to saving more with M-Shwari to build credit, but the total amount saved across those vehicles was not impacted.

Neutral Impact

Neither access to credit, nor financial literacy training, had a large impact on customers' savings.

A study in Malawi[2] found a small positive (but insignificant) effect on savings.

Neutral Impact

Neither access to credit, nor the amount of credit offered, had an impact on customers' savings.

A study in Nigeria[3] found a small positive (but insignificant) effect on savings.

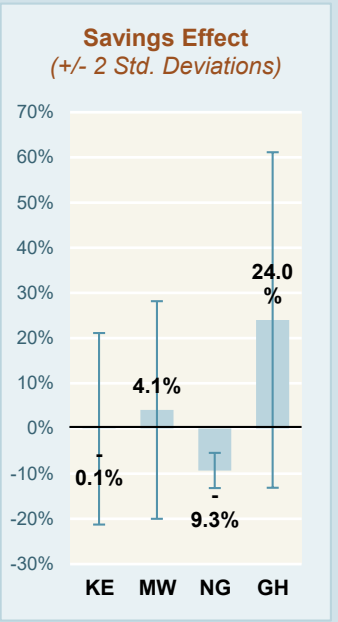
Neutral Impact

Access to input credit led to a small, but insignificant increase in asset ownership and savings for farmers.

In Ghana[4], treated farmers who had access to up to USD$75 worth of input credit had small positive (but insignificant) increases in asset ownership and household savings.

Estimates of how credit access affected savings rates varied widely across studies and borrowers within each study.

Although some effects look large, the estimates are very imprecise, as shown by the error bars, and cannot be distinguished from zero.



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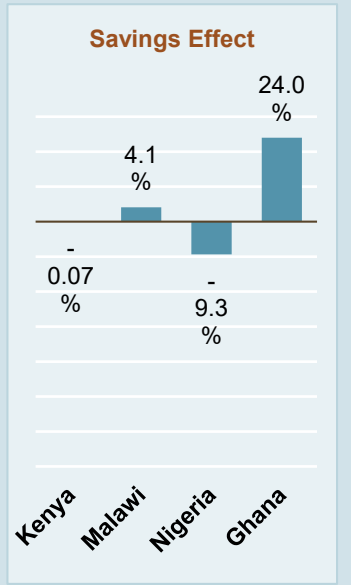
Study	Effect	2 SDs	Range Min	Range Max
Kenya	-0.07%	21.19%	-21.26%	21.12%
Malawi	4.10%	24.08%	-19.98%	28.18%
Nigeria	-9.30%	3.90%	-13.20%	-5.40%
Ghana	24.00%	37.14%	-13.14%	61.14%



NETWORK CELLULAR USAGE

Airtime loans are popular, suggesting untapped demand, but evidence on repayment rates was mixed.

Definition: Time and money spent using a mobile phone for calls and/or SMS messages.

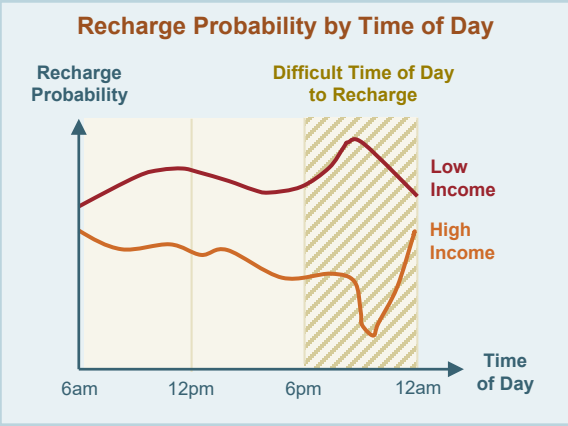
Results: The two studies focused on airtime loans both found that airtime loans were popular (high take-up). However, results on network spending were mixed.

Neutral Impact

Access to airtime loans in Haiti increased total communication expenditures. Impacts varied by income levels and primarily affected lower income individuals.

The average consumer increased airtime spending by 16%, but the impact varied widely by income group[1].

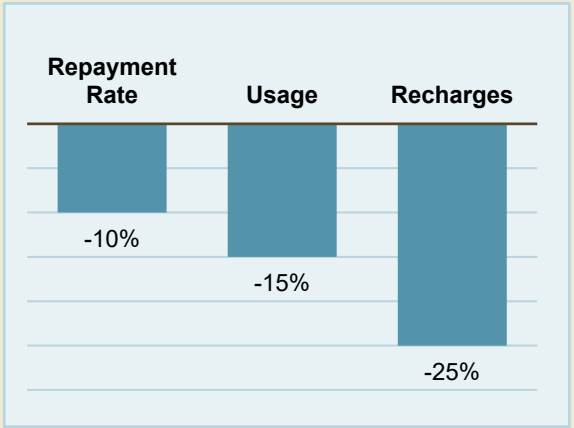
Low income consumers were more likely to recharge at night, despite higher transaction costs, consistent with the idea that poorer customers wait until they have more certainty over their daily incomes before deciding how much to recharge



Neutral Impact

Increased credit limits led to short-term increases in borrowing, but were quickly followed by large and persistent declines in airtime borrowing and spending.

Some customers of an anonymous East African mobile network operator were assigned new credit limits. Higher credit limits initially led to an 11% increase in airtime borrowing, but repayment, borrowing, and recharges all subsequently fell. This may be evidence that over-indebtedness followed from easily accessible credit[2].

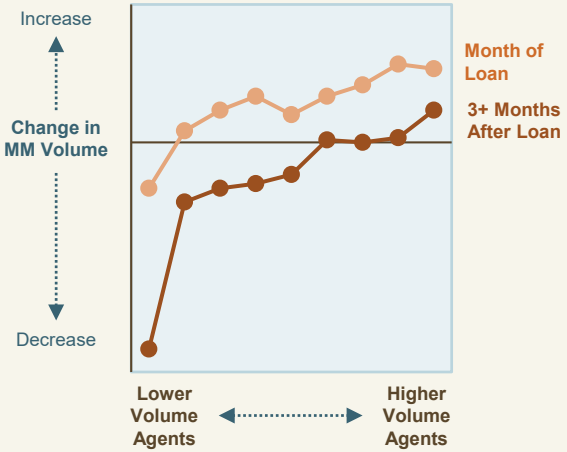


Neutral Impact

Doubling loans to mobile money agents led large agents to increase volumes, but small agents to divest.

A study in Myanmar[3] examined how larger loan offers to mobile money agents affected their business. The change led to a 13.3% increase in monthly mobile volumes the next month, but this effect tapers off within 2-3 months.

Lower-volume agents decreased volumes by 18-35%, shown by the negative effect for agents on the left side of the graph. This suggests relatively lower income agents allocate loan funds elsewhere.



FINANCIAL HEALTH

Evidence points to small, positive impacts on Financial Health, but these impacts fall far short of being transformative.

Definition: An individuals' self-reported ability to pay for necessary items like food or medical treatment, pay for non-food expenses, and prepare for emergencies. Resilience, covered earlier, is a component of many indexes designed to measure Financial Health.

Results: Most studies included in this review found small, positive, impacts on Financial Health. Researchers have not identified any evidence that digital credit has transformative impacts on Financial Health.

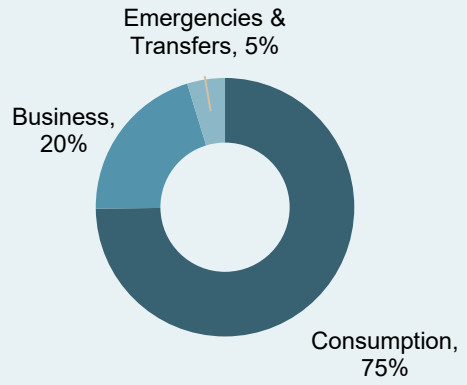
Neutral Impact

Access to credit in Malawi had almost no effects on financial security.

In a study in Malawi[1], customers with access to MIC loans reported almost no change in different measures of financial security, such as preparedness for emergencies or ability to pay for non-food expenses.

This is not surprising given the size of the loans: 75% of survey respondents used the loans for consumption vs. 20% for business.

"What was your last Kutchova loan for?"



Neutral Impact

Access to loans in Nigeria had positive, but insignificant, impacts on measures of financial health.

This study[2] examined how both *access* to loans and *the amount offered* affected customers of a prominent financial service provider in Nigeria. Neither had an effect on an index of the overall financial health of the applicant.

Neutral Impact

Access to agricultural input loans did not improve food security for farmers in Ghana.

A study in Ghana[3] found no evidence of improved food security among treated farmers, who received agricultural input credit worth USD $75.

They also found negative, but statistically insignificant, effects on non-farm business involvements & damages from shocks.

SUBJECTIVE WELL BEING

Evidence suggests that MIC can have positive effects on subjective well-being.

Definition: Considers factors such as an individuals' self-reported life satisfaction, measures of depression or distress, and perceptions of one's standing in social status.

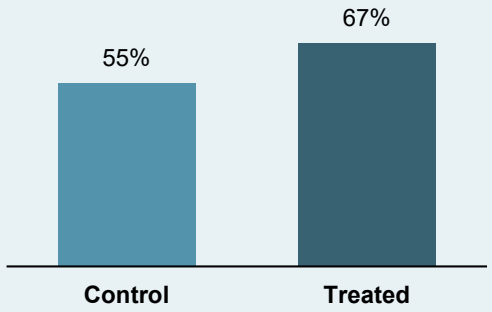
Results: The studies included in this review generally found small, positive impacts on subjective well-being; in multiple examples these impacts were statistically significant.

Positive Impact

Customers in Malawi reported higher levels of satisfaction with their financial well-being when they had access to credit.

Although access to credit only had a small and statistically insignificant impact on customers' financial health, those with access were more likely to report being satisfied with their financial well-being[1]. This finding was statistically significant.

"Are you satisfied with your financial well-being?"
Percentage of respondents who said yes



Positive Impact

Access to credit increased subjective well-being for customers in Nigeria.

This study[2] examined how both access to loans and the amount offered affected customers of a prominent financial service provider in Nigeria.

Customers who had access to MIC loans reported higher levels of subjective well-being. The effect was large, even in comparison to the effect of cash transfers and multifaceted antipoverty programs, which are 10-20 times more costly to implement.

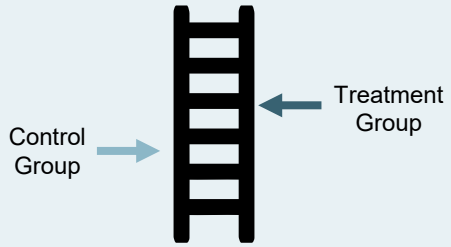
However, offering larger loans only had small and statistically insignificant effects on subjective well-being.

Positive Impact

Farmers in Ghana reported mixed effects on their well-being after receiving agricultural input loans.

Treated farmers are more likely to self-report that their position on "an imaginary social ladder" was greater, and to report greater levels of subjective well-being, though the latter estimate is noisy. The loans did not have an effect on measures of psychological distress[3].

Self-Reported Position on an Imaginary Social Ladder



On average, treated farmers reported being 6% higher on an imaginary social ladder. This finding was statistically significant.

DIGITAL CREDIT AND GENDER (1 OF 4)

Motivation

Digital credit is a subset of the broader Digital Financial Services (DFS) landscape. Women's economic empowerment's intersection with DFS is more well studied than that with digital credit, but similar dynamics apply when examining the potential for differential impacts by gender.

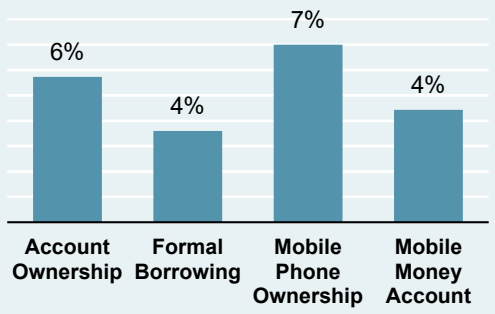
Some have speculated that DFS could be an avenue for boosting women's economic empowerment (WEE), for example by removing barriers that impede women's access to financial services.

Others worry that DFS will exacerbate existing inequities if products given large gender gaps in enabling norms and technologies such as mobile phone ownership and usage (prerequisites for the use of mobile money or digital credit).

Background

There are persistent and well documented gender gaps for a number of financial inclusion indicators, including account ownership and usage, and credit limits/usage, as well as adjacent indicators like return on capital, phone ownership, etc.

Gender Gaps in LMICs (2021 Figures)[1,2]



Increasing women's financial inclusion and women's economic empowerment are important for achieving the Sustainable Development Goals and building equitable societies.

Approach

- Summarizing the large body of evidence studying the components of empowerment and interventions that increase WEE would be a challenging undertaking in its own right
- This review selects a handful of pathways where digital credit may plausibly lead to different outcomes for men and women. Plausibility is tied to specific, known barriers that women face for financial inclusion and economic empowerment.
- For each pathway, there are theories for why digital credit may be helpful or harmful; this review outlines the theories and examines the evidence produced thus far.
- Many studies funded by the DCO explicitly focused on WEE or included an analysis to investigate impacts by gender. Results from these studies are included for each relevant pathway.

Additional Reading

Below is a small sample of additional reading on Women's Economic Empowerment and Digital Financial Services:

- The Impacts of Digital Financial Services on Women's Economic Empowerment | Bill & Melinda Gates Foundation
- Evidence of Digital Financial Services Impacting Women's Economic Empowerment | WEE-DiFine
- Leveraging Digital Financial Capability to Drive Women's Financial Inclusion | Women's World Banking
- Women's Economic Empowerment Meansurement in Financial Inclusion | FinEquity
- Women and Finance: Enabling Women's Economic Empowerment | CGAP
- The real story of women's financial inclusion in India | MicroSave Consulting
- Tackling Legal Impediments to Women's Economic Empowerment | IMF
- What Can Digital Credit do for Women? | Digital Credit Observatory

DIGITAL CREDIT AND GENDER (2 OF 4)

Digital Credit: Help or Hindrance for Women's Economic Empowerment?

Barrier Addressed	Why Would this Help?	Key Stat	Why Could this Hurt?	Key Stat
Distance *Traveling to bank branches represents a cost; this disproportionately affects women and people in rural areas*	Remote access to financial services can lower the monetary and time costs of traveling to a bank branch	In a survey of unbanked individuals, 31% cited distance from financial services as a barrier for not having a financial account[1]	Large and persistent gender gaps in access to and control of mobile phones may actually exacerbate financial inclusion gaps	Women are 7% less likely than men to own a mobile phone and 15% less likely to use mobile internet[5]
Financial History *Women are less likely to have robust credit histories, which can make them appear riskier to banks*	The use of alternative data such as mobile money transactions may increase financial inclusion for people without credit histories	Women were 26% more likely to receive a loan with novel methods like the EFL tool vs. traditional screening approaches[2]	If algorithms are trained on data that include biases, they may replicate those biases at large scale, exacerbating the gender gap	When Apple and Goldman Sachs introduced the Apple Card, men received credit limits up to 20x higher than their spouses[6]
Autonomy *Cultural norms may limit women's ability to make decisions about their labor or financial resources*	Digital financial services, including credit, enable women to shield income and savings from their spouse or family, retaining decision-making power over its use	In a study in Uganda, women who received loans in their mobile money accounts had 15% higher profits than those who received cash[3]	The potential, even when it is unrealized, for privacy could create suspicion that leads to increased pressure or, in some cases, intimate partner violence (IPV)	Survey participants whose spouse had financially deceived them were 72% less likely to report being very happy in their relationship[7]
Stereotypes & Biases *Women often face discrimination in traditional financial institutions and are underrepresented among the banking sector workforce.*	Algorithms make decisions based on rules and data, and are less likely to discriminate against women based on preferences or stereotypes	Only 14% of women in the control group of a study in India reported being able to visit a bank without male supervision[4]	Without active support and products designed to meet women's needs, existing gaps in financial and digital literacy may exacerbate gaps in financial inclusion	Women were 4x more likely than men to have a loan taken out in their name but were less than half as likely to have the final say in the decision to take out the loan[8]

Results

The studies reviewed here broadly find that the impacts of digital credit did not vary significantly, either positively or negatively, by gender.

Few studies were able to look at measures of women's economic empowerment but those that did found no significant impacts, positive or negative.

The following slides provide more detail on the specific studies that examine impacts by gender and what evidence they produced.

DIGITAL CREDIT AND GENDER (3 OF 4)

A broad swath of studies found that MIC did not impact women's economic empowerment, nor did broader impacts vary by gender.

Neutral Impact

Distance | Financial History | Stereotypes & Biases

Access to digital credit loans did not have an impact on women's economic empowerment in Nigeria or Malawi.

Studies in Nigeria[1] and Malawi[2] investigated whether MIC loan access had different impacts for men and women, but did not find significant impacts on women's economic empowerment.

Neutral Impact

Autonomy

Loans to mobile money agents in Myanmar did not have impacts on women's empowerment for the agents themselves or for women in their communities[3].

Roughly half of the mobile money agents in the study were women, allowing for an investigation of how impacts vary by gender.

Researchers generally did not find significant impacts for the mobile money agents or for women in their communities.

The only statistically significant finding was a 1.6% reduction in likelihood of lending to women in one's community.

Mixed Impact

Distance | Autonomy | Stereotypes & Biases

Agricultural input loans in Ghana had a mix of relatively positive and negative impacts on women farmers[4].

- Women who received input credits spent significantly less on other farming inputs, whereas men increased complimentary input spending
- Female farmers' profits improved. Researchers speculate input credit may have driven lower input spending at the market, allowing profits to improve
- Women did not shift towards mixed crop farming, whereas men did
- Women's non-farm business income increased, whereas men's did not. However, women borrowers didn't experience the gains in perceived social status that male borrowers did.
- Female farmers suffered less damage from shocks.

Neutral Impact

Distance | Financial History

The impact of access to airtime loans did not vary by gender[5].

Women in Haiti are more likely to work in the informal economy, and on average have lower income.

After accounting for these differences, researchers do not find differences in airtime usage by gender.

DIGITAL CREDIT AND GENDER (4 OF 4)

A broad swath of studies found that MIC did not impact women's economic empowerment, nor did broader impacts vary by gender.

Neutral Impact

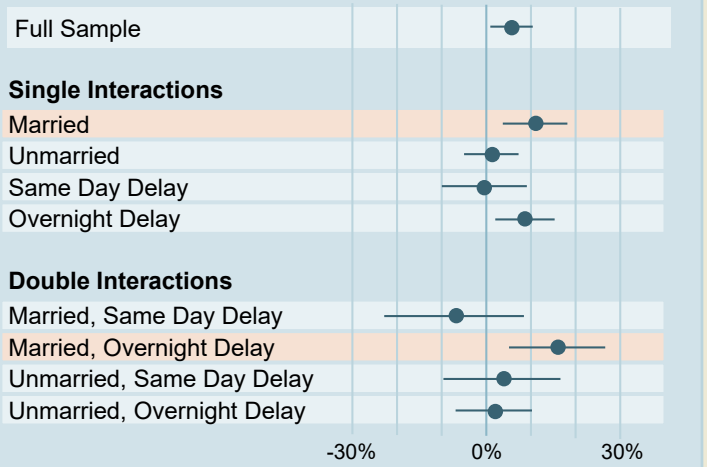
Autonomy

The speed of loan disbursement generally did not impact repayment differently by borrower gender.

A study in Mexico[1] did not find differences in repayment rates by gender, nor that the effects of delays in loan disbursement differed by gender.

However, delays improved repayment rates more among married borrowers, particularly married women.

Impact of the Cutoff on Loan Repayment



Positive Impact

Distance | Financial History | Autonomy | Stereotypes & Biases

Gender sensitization training did not impact key outcomes for women in India. However, agricultural loans could be designed to better fit women's needs and preferences.

In Odisha, a rural area of India where agricultural loans are widespread, researchers tested the effects of gender sensitization training and whether crop insurance or alternate credit scoring methods would impact demand for credit[2].

The gender sensitization training did not impact perceived gender roles, agricultural decision making, asset ownership, or demand for credit.

Women reported lower demand for agricultural loans - both in frequency and desired loan amount. However, both the alternative credit scoring approach and the offer of crop insurance boosted their demand for loans more than men's, suggesting that these features may be useful in designing products for women.

Loan Demand (INR)	Men	Women
Baseline	38,633	34,763
+ Khetscore	+ 1,893	+ 3,300
+ Insurance	+ 1,256	+ 2,584

Neutral Impact

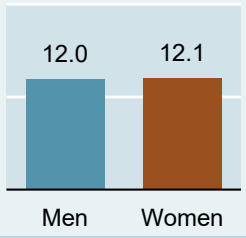
Stereotypes & Biases

Researchers did not find gender discrimination among judges of a business plan competition in Ethiopia.

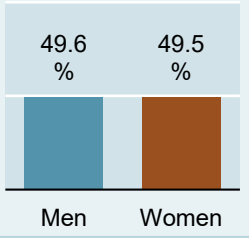
Researchers randomized the gender shown to judges on applications to a real business plan competition in Ethiopia, and found no evidence that judges discriminated against female-owned businesses[3].

Judges' evaluation scores, likelihood of recommending a business for a loan, and assessment of future business performance were all unaffected by the randomly assigned gender on the application. Though the intervention itself had no impact, this has positive implications for fairness in loan recommendations.

Judges' Evaluation Scores (0–20)



Likelihood of Recommending a Business for a Loan



MISCONDUCT ASSOCIATED WITH DIGITAL CREDIT

3

HIGH AND HIDDEN PRICES

Inexperienced consumers of financial products are both riskier to lend to, and the target of agent misconduct, leading them to pay high prices

Definition

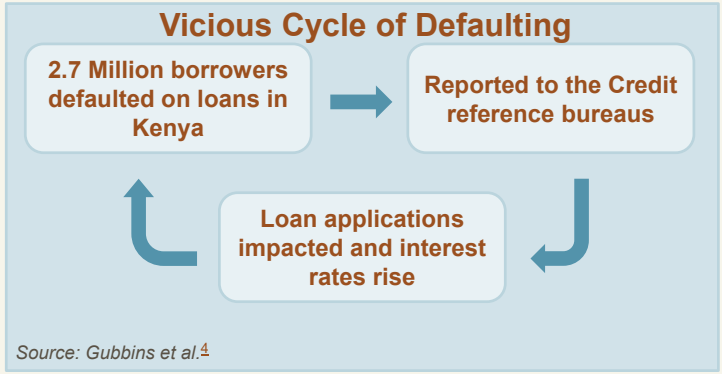
- As digital credit is often targeted toward riskier consumers without a robust credit history, fees associated with the product including interest rates and late fees may be higher than with comparable products.
- However, inexperience with borrowing doesn't always mean high risk, which leads to alternative credit scoring.
- Prices may also be inadvertently or purposely obfuscated from the consumer, especially through complex menus and contracts.
- High prices may manifest as price dispersion where prices vary dramatically for the same product, resulting in some consumers overpaying.

Cause(s)

- Risk-adjusted pricing. High prices are matched to high credit risks.
- Confused, inattentive, or over-optimistic consumers are susceptible to higher fees and overcharging[1, 2].
- Provider staff may maximize commissions and fees rather than making recommendations in the customer's best interest.

Examples and Evidence

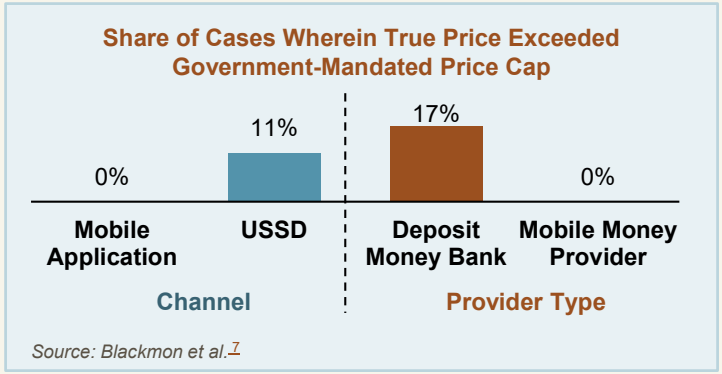
- An audit study in southern India found that banks rarely offered a no-cost account to consumers[3].
- In Kenya, 2.7 million borrowers have defaulted on loans, resulting in being reported to one of the credit reference bureaus (CRBs)[4].
- Another study in Kenya found that digital credit is relatively expensive, with a mean effective APR of 280.5% and median effective APR of 96.5%. The difference is mainly attributed to the presence of early repayment[5].
- A mystery shopping audit study of financial service providers in Ghana, Mexico and Peru found that providers disclose little unsolicited information about product cost or features, often understating costs[6].



Source: Gubbins et al.[4]

- An audit of transfers in Nigeria found that consumers regularly pay fees to send transactions via electronic banking transactions that exceed caps set by the Central Bank of Nigeria[7].
- Using mobile app meta and review data, a study examining problematic fintech apps in the US, India, Nigeria, and the Philippines found that 69% of personal loan apps showed signs of predatory behavior, which included obfuscating the true cost of loans[8].

Note: Given the dearth of evidence on digital credit, this section includes examples and evidence from related financial products.



Source: Blackmon et al.[7]

DEBT STRESS

Easy access to credit can facilitate customers borrowing more then can be repaid, particularly when proper consumer protections are not in place; though, evidence is somewhat mixed as few studies find opposing results.

Definition

- Poor households often face financial uncertainty due to low or irregular income. Debt stress is associated with overborrowing or undue burden associated with paying back loans. Consumers may borrow more than they are able to repay within the time constraints associated with the credit product, which can be quite short for digital credit, without incurring serious hardship or making sacrifices.

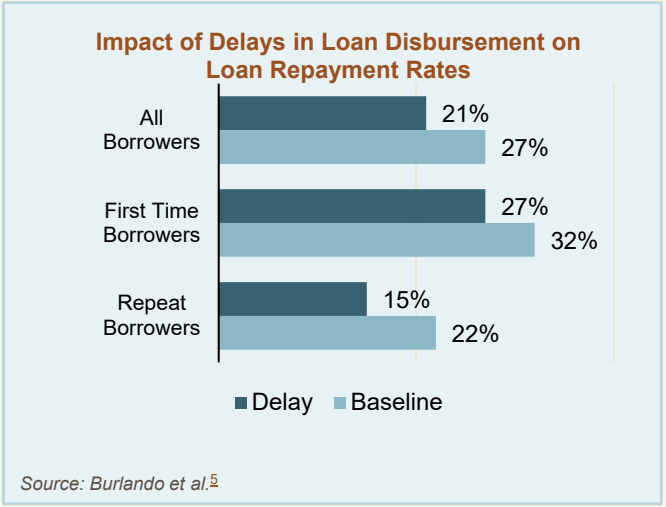
Cause(s)

- Present bias can lead to undersaving and inability to repay loans when consumers do not calculate the tradeoffs between borrowing in the present and repaying in the future[1].
- Exponential growth bias and limited attention can lead to underestimation of borrowing costs, which can in turn lead to overborrowing. Exponential growth bias can affect both underestimation of borrowing costs and undervaluation of savings returns[2, 3].
- Lenders face an implicit information problem. If borrowers take on multiple concurrent loans from different providers, each provider is unable to accurately assess ability to repay the loan. This suggests a role for (near) real-time updating and monitoring of credit bureaus.

Examples and Evidence

- In Mexico, offering a sequential line of credit led to decreased default rates for borrowers with high credit scores, but increased default rates for those with low credit scores, driven by differences in how high and low credit borrowers used sequential loans[4].
- In Mexico, borrowers who received delayed loans were 5.6 ppts more likely to repay loans, potentially suggesting present bias leads consumers to take loans they don't need or can't repay[5].
- Randomly increasing customers' credit limits led repayment rates, borrowing, and airtime recharges to fall by 10%, 15%, and 25%, respectively[6].
- In Kenya, the first African country to broadly introduce digital credit, one report found that 2.7 million Kenyans had been negatively listed by CRBs by 2017[7].
- A survey of digital credit borrowers found that 12% of borrowers in Kenya and 31% of borrowers in Tanzania have defaulted[8].
- A study in India found that repayment flexibility can reduce financial stress. Clients repaying monthly were 51% less likely to indicate feeling "worried, tense or anxious" about repaying, were 54% more likely to report feeling confident about repaying, and reported spending less time thinking about their loan than weekly clients[9].
- A potential symptom of debt stress and limited savings, adults reported that paying for medical costs is their biggest worry: 36% in LMICs and 33% for SSA. Additionally for SSA, 29% are worried about paying for school fees or education[10].

Note: Examples included here show manifestations and sources of debt stress.



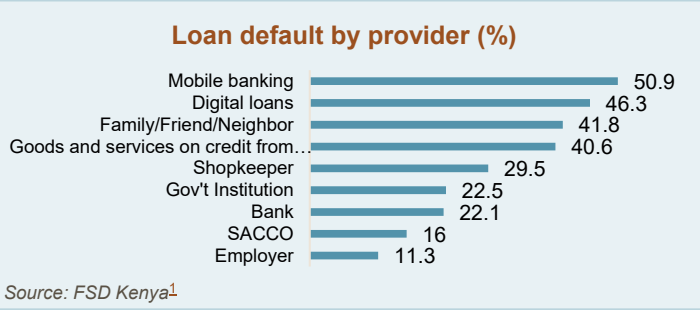
Source: Burlando et al.[5]

CASE STUDY: DEBT STRESS IN KENYA

Kenya, an early adopter of digital credit, is an example of how access to credit can lead to debt stress without proper consumer protections

Mobile loans and overlapping loans are associated with higher default

FSD Kenya surveys show that mobile loans have higher default rates (51%) than other formal loans[1].



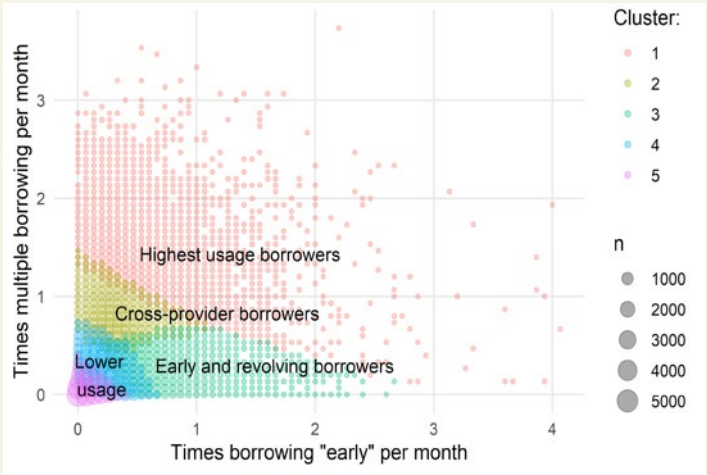
Source: FSD Kenya[1]

Administrative data show that overlapping loans are associated with higher incidence of default[2].

Consumer Group	% Ever Late	% Ever Defaulted
Multiple borrowers, across providers	73.4%	39.6%
Repeat borrowers, single provider	64.4%	27.4%
Neither multiple nor repeat borrowing	67.3%	31.5%
All Consumers	**67.7%**	**36.2%**

Segmentation of multiple borrowers suggests specific risks and policies.

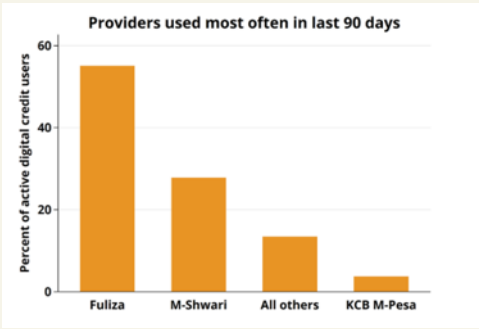
- Of concern are the "highest usage borrowers" and "cross-provider borrowers" clusters, who have a higher risk of late repayment or default[2].
- The risk of "Early and revolving borrowers" relate more to the expenses of servicing debt early, which result in expensive borrowing, than default. This group mainly borrow from the same provider, which has visibility on past loans and outstanding debts.



Source: Blackmon et al.[2]

Overdraft facility, Fuliza, saw a rapid uptake

- As of March 2022, value of Fuliza disbursements reached KSh 503 billion (~4B USD), +43% from last year with 102% repayment vs disbursal rate[3].
- Fuliza recorded the most active users across all providers. While it has provided relief, it is also subject to debt stress risks. Mobile banking, which includes Fuliza, observed the highest loan defaults in 2021[2].



Source: Blackmon et al.[2]

- Data from Kenya's 3 Credit Reference Bureaus shows that accounts that were negatively listed had rose from 2.7M last year to 3.2M in March 2020. The majority were linked to mobile digital loans, with an average loan size of KSh 2,500 (roughly USD $24)[4].

POST-CONTRACT EXPLOITATION

Opaque fee structures and limited regulatory oversight enable high rates of overcharging and predatory debt collection practices

Definition

- Post-contract exploitation occurs when providers or their actions harm consumers after take up of financial services.
- Agents may charge additional transaction fees, add unsolicited services and employ abusive debt collection practices. Even with regulated tariff structures, some agents collect informal fees.

Cause(s)

- Imperfect contracting procedures result in moral hazard whereby the provider fails to conform with the regulations or contract terms regarding fees, client onboarding and debt collection.
- Anticompetitive behavior may enable providers to exploit consumers after take up of financial products, particularly customers without many choices. Local monopolies in rural settings and mobile money markets dominated by one or two large firms contribute to providers' ability to engage in corrupt practices.

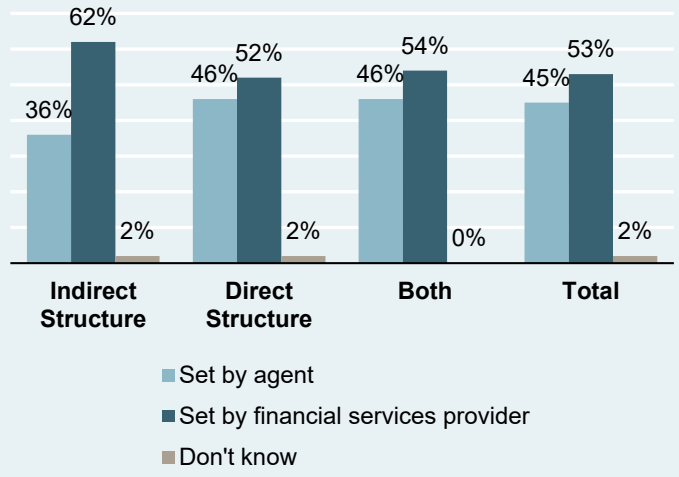
Examples and Evidence

- In Nigeria, 45% of Indirect Agents set their own customer prices, rather than using the price structure set by the service provider[1].
- A Consumer Protection Survey conducted in Nigeria cited agent overcharging, 33%, and unexpected or unclear fees, 29%, as the largest challenges ever experienced with DFS. Most consumers took no action to resolve this challenge- signaling an area for improvement in consumer redress channel access and usage[2].
- A popular fintech app in Kenya and Nigeria, Okash, reportedly threatened users who were late on payments that everyone on their contact list would be notified, violating data privacy[3].
- Regulators sanctioned India's Bharti Airtel for opening Airtel Payments Bank accounts without customer consent and linking those accounts to customers' national digital ID, directing public subsidy payments directly into the Airtel accounts[4].
- Using mobile app meta and review data, a study examining problematic fintech apps in the US, India, Nigeria, and the Philippines found that 69% of personal loan apps showed signs of predatory behavior, which included engaging in abusive debt collection practices[5].

Largest Challenge Ever Experienced

33%	29%	26%
Unexpected or Unclear Fees	Agent Overcharging	Phishing Attempts

Setting Customer Fees on Transactions



Source: Blackmon et al.[2]

FRAUD AND SCAM

In most studies, the majority of surveyed consumers report that they've been the target of fraud and/or scams

Definition

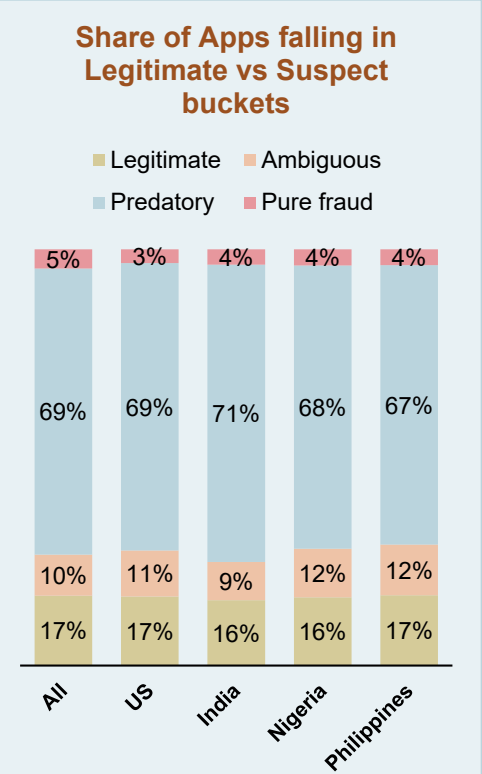
- Fraud is expansive and includes fraudulent entities like a Ponzi scheme; misconduct conducted by individuals such as phishing for passwords or account numbers; and misconduct conducted by employees of legitimate entities such as mobile money agents who cheat customers.
- Fraudulent digital loan products can sieve private data or processing fees from unsuspecting customers (without providing any actual financial services). Fraudulent products may go undetected because signals of fraud are often hidden by scammers who, for example, utilize fake reviews in order to make the products seem legitimate

Consequence(s)

- The 2016 Financial Inclusion Insights Survey examines the time and monetary costs of fraud. More than 20% of banked respondents in Uganda, Kenya, and Nigeria reported losing money to fraud or scams, or paying bribes.
- Fraud may reduce trust in the financial system and limit use of financial products that could improve consumer welfare.

Examples and Evidence

- In Colombia, over half a million people engaged in two large Ponzi schemes, investing funds equal to 1.2% of annual GDP[1].
- In India, unlicensed lending apps employed predatory lending practices, including aggressive debt collection tactics. The crisis was serious enough that the Reserve Bank of India banned many such apps from the Google Play Store[2].
- Using mobile app meta and review data, a study examining problematic fintech apps published on a major platform in the US, India, Nigeria, and the Philippines found that more than two-thirds of personal loan apps showed signs of predatory and fraudulent, including providers obfuscating the true cost of loans, and misusing personal data[3].
- In Kenya, only 12% of participants in a study correctly distinguish a set of spam and official messages. Training led to an 8% increase in correctly identifying spam, but also led participants to incorrectly categorize official messages as spam[4].
- In Malawi, scammers steal more than USD $100,000 each month via fraudulent mobile money transfers[5].
- In Nigeria, educational anti-fraud interventions improved the ability to detect fraudulent communications, at cost of falsely labeling genuine communications as fraudulent (driven by men). It also increased confidence in deciphering (driven by women), in line with evidence that women typically drive broad increases in trust in DFS[6].
- In a survey of more than 1,200 people in Rwanda, 40% reported being targeted by fraudulent schemes and 10% were victims of fraud at least once[7].



Source: Fu and Mishra[3]

DATA SECURITY, PRIVACY AND PROPERTY RIGHTS (1 OF 2)

Studies on the deployment of digital identification systems report reduced payment leakages and increased control of cash for women, though customer experience may be improved.

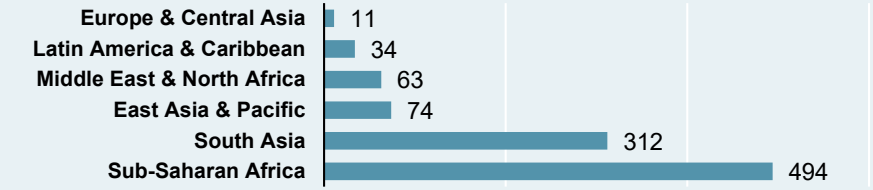
Definition

- Data security, privacy and property rights relate to the degree to which personal information, such as ID, is controlled, edited, managed, and the extent to which information is communicated and shared to others.
- Frictions arise as there are risks around harvesting personal consumer data for public interest, potentially without consent of the individual.

Digital ID: Context

- 161 countries have ID systems using digital technologies, reinforcing the need for robust privacy and data protection standards[1].
- 1 billion people and 600 million women lack an official proof of identity, limiting access to critical services and participation in political and economic life. 1 in 3 people without an ID reported difficulties in using financial services, receiving government financial support, etc[1].
- Among adults in LMICs, 46% do not have an ID because of documentary requirements, 44% due distance to limited registration points, and 40% due prohibitive costs in obtaining one[1].
- A 2020 analysis found that majority of leading credit apps were collecting data such as GPS location, storage capacity and contact information[2].
- Using mobile app meta and review data, a study examining problematic fintech apps in the US, India, Nigeria, and the Philippines found that 69% of personal loan apps showed signs of predatory behavior, which included misusing personal data[3].

Number of Unregistered Population by Region (2018 Estimates), *Millions*



Source: World Bank Group[1]

Digital ID: Examples and Evidence

- In Malawi, fingerprinting when applying for loans led to higher repayment rates for borrowers with the highest ex ante default risk, but had no effect for the rest of the borrowers[4].
- Introducing biometric Smartcards payment on antipoverty programs in India reduced leakages in payments and delivered a faster, and less corrupt payment process without affecting program access. It proved to be cost-effective, generating savings by reducing ghost workers[5].
- Biometric authentication in the delivery of Pakistan's cash transfer led to women becoming 4x more likely to attend cash withdrawals in person, and increased control of cash for women who did not collect it themselves. However, there were small increases in side-payments and the number of trips required to collect cash. Women were also less satisfied with new system, at least in short-term[1].

Impact of Biometric Smartcards Payment

40%

Reduction in Leakage Due to Corruption

Improved User Experience

Total time savings of USD 4.5M per year

90% of beneficiaries in treated areas preferred new system

Source: Muralidharan et al.[5]

DATA SECURITY, PRIVACY AND PROPERTY RIGHTS (2 OF 2)

While implications on data security, privacy and property rights are still limited, initial evidence on modern and digital approaches to Government-to-Person (G2P) targeting shows reduced exclusion errors and delays.

Definition

- Data security, privacy and property rights relate to the degree to which personal information, such as ID, is controlled, edited, managed, and the extent to which information is communicated and shared to others.
- Frictions arise as there are risks around harvesting personal consumer data for public interest, potentially without consent of the individual.

G2P Targeting: Context

- Globally, over a quarter of adults receive payments from the government, whether through public sector wages, pensions, subsidies or social protection programs, an increase of 400 million from 4 years earlier[1].
- Use of digital payments among government transfer recipients increased from 5 out of 10 in 2017 to 7 out of 10 in 2021. Such payments included using internet to pay bills or make a purchase (49%) or using an account to make in-store purchases (54%)[1].
- Research on social assistance response to COVID-19 found that countries using digital databases and data sharing platforms reached 51% of the population (on average), compared to just 16% of the population for those that did not[1].

Ongoing usage of financial services has made significant progress

Digital Government Transfer Recipients: 7 of 10 also made a digital payment .

Government Transfer Recipients: 1 of 3 also accumulated savings at a formal financial institution or savings account

Source: World Bank Group[1]

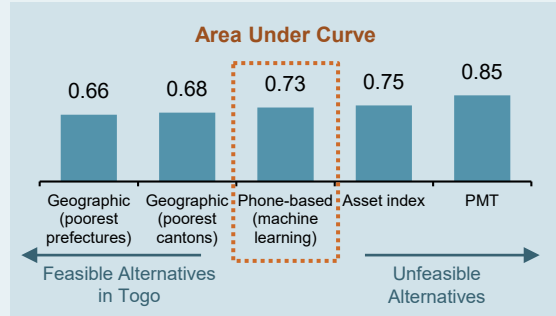
G2P Targeting: Examples and Evidence

- Using data for 9 African countries, proxy-means testing, a popular method of poverty targeting, helps filter out the nonpoor, but excludes many poor people. Universal targeting and demographic scorecards are found to perform just as well as proxy-means targeting[2].
- Relative to targeting options considered by Government of Togo, a machine learning approach using data from mobile phone networks reduced errors of exclusion by 4-21%. It is rapid and cost-effective way to target aid in the absence of up-to-date and detailed data sources[3].
- Shared infrastructure and interoperability enabled a seamless flow of information vital to social assistance delivery in Turkey. The number of documents needed dropped from 17 to 1, time to apply from days to minutes, and time to process applications and deliver benefit from months to days[1].

Comparing Model Efficiency of Phone-based Targeting to Alternatives

Phone-based approach was more effective than actual alternatives.

Phone-based targeting benefits are greatest when population is homogenous, and when there is less variation in other factors (i.e. place of residence) used in traditional targeting approaches.



Source: Aiken et al.[3]

EVIDENCE OF CONSUMER PROTECTION INTERVENTIONS

Potential Interventions to Address the Consumer Protection Challenges

High and Hidden Prices	Debt Stress	Post-Contract Exploitation	Fraud and Scam	Data Security, Privacy, & Property Rights
• Financial Literacy • Wait Times • Information Disclosure	• Financial Education • Information Disclosure and Improving Credit • Credit Reference Bureaus • Reminders • Flexible Repayment	• Legal Representation • Market Monitoring • Competition • Learning-by-Doing	• Information Campaigns • Consumer Complaint and Redress Mechanisms • AI to Monitor DFS	• Digital ID user authentication • Use of privacy enhancing technology

EFFECTS OF CONSUMER PROTECTION TOOLS

4

IMPROVING LOAN REPAYMENT

Although repayment rates are generally low to begin with, several different interventions have shown promise in boosting repayment

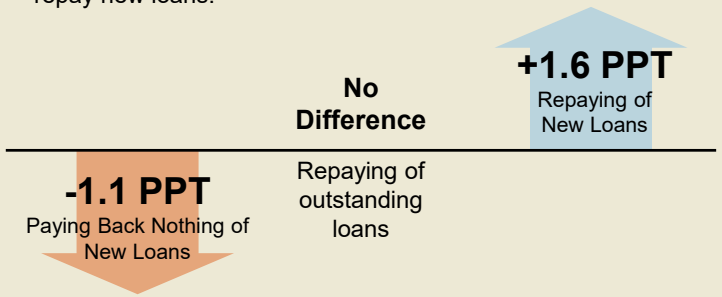
Financial Literacy

Neutral Impact

High and hidden prices | Debt stress | Fraud and scam

Financial literacy training did not affect repayment rates for outstanding loans, but moderately boosted repayment for new loans. This mild but positive effect is consistent with the large literature exploring the impact of financial literacy with traditional credit products.

- A study in Malawi[1] explored the effect of simple, phone-based financial literacy on digital credit users' loan take up and repayment.
- The financial literacy intervention improved users' knowledge of costs and risks associated with use of the loan product.
- While this new knowledge did not impact repayment of outstanding loans, the study finds small impacts on repayment rates for treated individuals who took loans *after the treatment*. Treated borrowers are about 1.6 percentage points more likely to repay new loans.



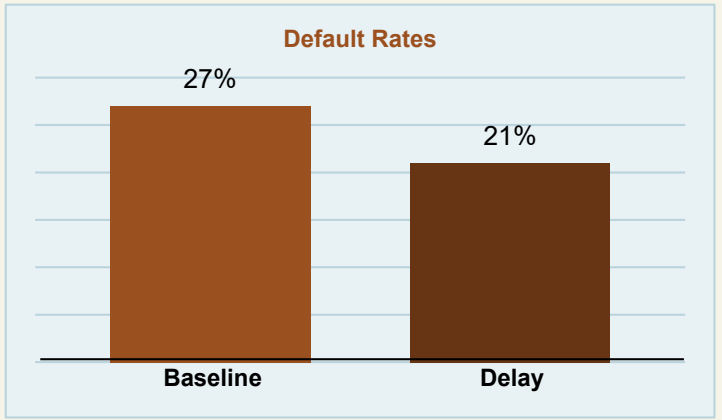
Wait Times

Positive Impact

Debt stress

Delayed loan disbursement led to significantly higher repayment compared to similar loans.

- A study in Mexico compared repayment for two groups of loans that were requested at similar times, but where one group was unpredictably delayed.
- Borrowers who receive delayed loans were 5.6 percentage points more likely to repay their loans than similar borrowers who receive loans faster, a 21% reduction in default rates[2]. The results suggest that wait periods could impact financial decision-making behavior.



Repayment Flexibility

Mixed Impact

Debt stress

Repayment Flexibility Can Reduce Financial Stress: A Randomized Control Trial with Microfinance Clients in India

An experiment in India randomly assigned microfinance clients to a monthly or a traditional weekly installment schedule. Customers on the monthly repayment schedule reported a 45% reduction in stress and higher business income and investment, without changes in repayment rates[3].

Repayment Flexibility and Risk Taking: Experimental Evidence from Credit Contracts

In a field experiment in Bangladesh, some microfinance customers were randomly given the option to delay up to 2 monthly repayments during a 12 month cycle. These clients increased their business investment, revenue, profits, and land, while defaulting at marginally *lower* rates[4].

Flexible Microcredit: Effects on Loan Repayment and Social Pressure

A lab-in-the-field experiment with microcredit borrowers in the Philippines found that repayment flexibility substantially lowers both repayment & social pressure. The results are consistent with a strong social norm for repayment, which is weakened by introducing flexibility[5].

IMPROVING CREDITWORTHINESS

Providing accurate information appears to improve borrowing decisions and results, though there is a wide range of outcomes

Financial Education

Mixed Impact

High and hidden prices | Debt stress

Although numerous studies on financial literacy programs exist, there is little consensus on their impacts

- A meta-analysis of studies[1] on financial education, focusing on effects on financial literacy and financial behaviors, found small improvements in borrowing behavior such as reduced debt and default rates[2] or reduced payday loan borrowing[3].
- However, most studies rely on self-reported data. The financial literacy programs and populations treated are extremely varied, and outcomes that measure effectiveness are different and often conflicting, making it difficult to interpret the results of multiple studies holistically[4].

Information Disclosure & Improving Credit Information Sharing

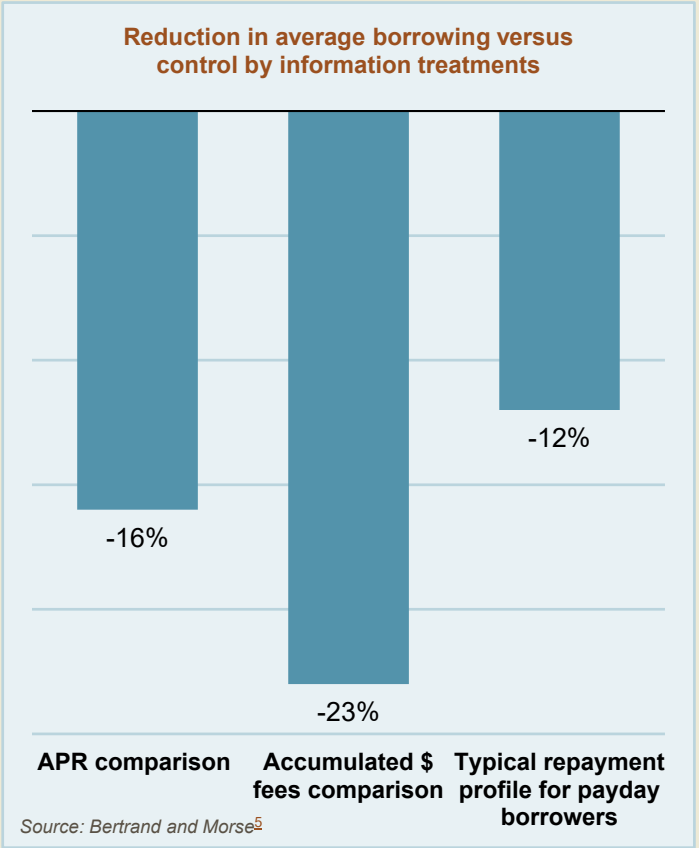
Positive Impact

High and hidden prices | Debt stress

Information on interest rates and alternative options led to reduced payday loan borrowing

- A randomized experiment in the US evaluated how information on the costs of payday loans affected consumers' borrowing decisions. Borrowers who received the information treatments reduced their payday borrowing between $28-$55 USD each pay cycle, a 12-23% decline[5].
- After Texas adopted information disclosure requirements for payday loans, loan volumes declined 13%. Austin and Dallas implemented more stringent supply restrictions, leading to 61% and 41% declines, respectively[6].

  Results show that both behaviorally-motivated disclosures and city-level supply restrictions can impact loan volumes, without effects on prices.



IMPROVING CUSTOMER RIGHTS

A variety of interventions aimed at bolstering consumers' rights have been effective in lowering prices and increasing access to services

Legal Representation

Positive Impact

Data security, privacy and property rights

Legal representation in Kenya led to increased access to credit

- In rural Kenya, an experiment examined the effect of the improved legal representation on security and property rights by providing 2 years of free lawyer services to individuals in rural Kenya. The lawyer helped residents navigate a complicated judiciary system and helped to enforce court decisions.
- The study finds that free legal representation leads to improvements in security and property right claims which translated into economic improvements.
- For participants with access to legal services, access to credit increased by 56% compared to individuals who did not receive legal services, suggesting that dispute resolution can improve economic activity[1].

Market Monitoring & Info Campaigns

Positive Impact

Data security, privacy and property rights

Post-contract exploitation | High and hidden prices

Phone-based monitoring and information campaigns are promising ways to increase efficiency of service and reduce misconduct.

- A study in India explored a phone-based system to monitor delivery of government transfers to farmers. The social program is meant to reduce the need for farmers to take on debt by offering a transfer. It led to a substantial reduction in leakage, enabling more farmers to receive the subsidy on time. This led to $3.9 million worth of transfers being delivered on-time[2].
- In Ghana, a low-cost anti-misconduct information led to significantly reduced vendor misconduct, implying about 40% reduction of transaction fees. Consumer outcomes also improved as those in treated markets are 7.6% less likely to experience shocks that they could not financially remedy[3].

Learning-by-Doing

Positive Impact

Post-contract exploitation | High and hidden prices

Learning to Navigate a New Financial Technology: Evidence from Payroll Accounts[4]

- A field experiment introduced payroll accounts in a population of largely unbanked factory workers in Bangladesh who mostly receive wages in cash to see if "learning-by-doing" is an effective strategy to mitigate consumer risk.
- Workers in a treatment group received monthly wage payments into a bank or mobile money account while workers in a control group continued to receive wages in cash.
- The results show that exposure to payroll accounts leads to increased account use and consumer learning. Those receiving accounts with automatic wages learn to use the account without assistance, begin to use a wider set of account features, and learn to avoid illicit fees, which are common in emerging markets for consumer finance.
- The treatments also led to increased savings and improvements in the ability to cope with unanticipated shocks.

STEMMING FRAUD

Training campaigns are effective in building trust but appear to have limited impacts on fraud. Applications of social media tools for market monitoring show potential as cost-effective intervention for detecting issues earlier.

Information Campaigns

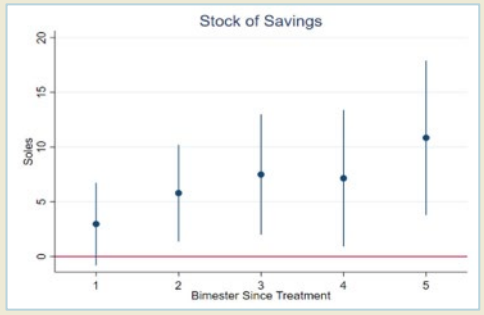
Neutral Impact

Fraud and scam

Trust and Saving in Financial Institutions

- In the study, conditional cash transfer beneficiaries in Peru are randomly assigned to a 3-hr training session meant to build their trust in financial institutions.
- Beneficiaries who receive the training a) increased trust in banks and b) increased savings over the 10-month period but c) had no change in financial literacy[1].

After 5 bimesters (10 months),the difference in the stock of savings averaged 10.84 Peruvian soles



- While trust alone may not impact fraud, developing savvier consumers and building familiarity with financial services may stem fraud by helping consumers separate well-intentioned actors from fraudulent ones.

Consumer Complain and Redress Mechanisms

Impact N/A

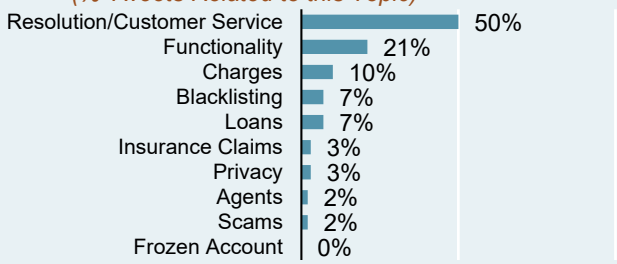
Fraud and scam | Data security, privacy and property rights

Did you see my tweet? Monitoring financial consumer protection via social media

- A non-experimental study used social media analysis tools and a curated twitter handle to understand how consumer protection issues are raised in the #KOT "Kenyans on Twitter" community.
- The study finds that twitter analysis is a useful tool to identify consumer protection concerns in real time by identifying spikes in similar tweets about specific services[2].
- Social media monitoring enabled users to amplify complaints, increasing the pressure on providers for a response.

Distribution of Relevant Tweets Across Consumer Protection Topics for the Kenyan Citizen

(% Tweets Related to this Topic)



AI to Monitor DFS

Impact N/A

Fraud and scam | Data security, privacy and property rights

Social media usage by digital finance consumers: Analysis of consumer complaints in Kenya, Nigeria and Uganda

- The study uses a social media listening tool tested on DFS in Kenya, Nigeria and Uganda, and will be used to inform further experimentation with consumer engagement and complaint handling via social media.
- While Twitter and Facebook accounts are mainly used to report consumer protection-related issues, Google Play Store reviews focus on App performance and operational failures[3].
- Waiting times and lack of responsiveness are the most frequent complaints related to customer care. Financial providers' response rate vary considerably across Twitter, Facebook and Google Play: the response rate of the interaction between consumers and providers measured is higher on Google Play.
- Regulators can benefit from applying automated tools for market monitoring, providing real-time statistics and early warning signs on actions that should be taken.

EQUITY IN ACCESS

Evidence of inequitable access of digital credit across gender is mixed.

Anti-Discrimination

Mixed Impact

Data security, privacy and property rights

Evidence of gender bias in terms of anti- discriminatory laws and credit access is overall mixed.

- Only 44% of surveyed low-income jurisdictions have laws or regulations prohibiting discriminatory practices[1].
- A study in Ethiopia explored gender gap in capital access through a business plan competition experiment wherein gender of business owner is randomly assigned when given to the financial provider to evaluate. It finds no evidence for greater discrimination; financial provider decisions reflect accurate beliefs about performance by gender[2].

Debiasing Campaigns

Mixed Impact

Data security, privacy and property rights

Debiasing campaigns in Chile and the Philippines displayed mixed results.

- The study in Chile explores the effect of messaging about female borrowers repayment rates and gender discrimination costs on gender differences in lending. The study finds that male loan officers who received the treatment are no more likely to approve loan requests from female loan applicants than those who did not receive the treatment[3].
- The study in the Philippines provides loan officers with evidence on low-income borrowers creditworthiness and training on income scorecards. However, the study finds that additional information on the creditworthiness of low-income households does not improve loan officers' likelihood to extend loans to such households[4].

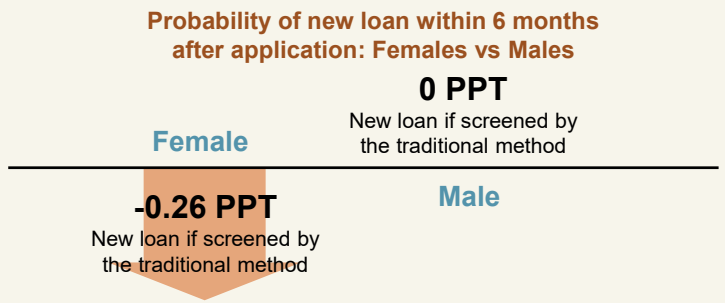
AI in Fintech

Positive Impact

Data security, privacy and property rights

There is evidence that a traditional screening methods induce gender bias[5].

- While studies on AI in fintech are limited, ethical AI could improve equity in financial service provision in LMICs.
- A study in Peru exploited variations in SME loan screening to explore if traditional screening methods, which rely heavily on loan officers, are biased against women. It finds female loan applicants are offered worse credit terms. Screening methods that do not rely on loan officers (e.g. a psychometric credit scoring tool) reduced these biases.



ONGOING RESEARCH/ OPEN QUESTIONS

5

EFFECTS OF DIGITAL CREDIT

The evidence base points to three primary areas where more data and information is urgently needed on MIC and the broader digital credit landscape

Understanding Welfare

- Could larger digital credit loans large enable productive investments with transformational welfare effects, or would they be more likely to lead to adverse financial consequences such as over-indebtedness?
- To what degree are borrower characteristics (e.g. financial literacy, time preferences, income, and/or gender) predictive of welfare outcomes?
- Along key indicators such as take-up, usage, repayment, and impacts on financial health and well-being, how do digital credit products compare to other credit offerings, especially for first-time borrowers?

Innovative Products

- Can new types of products or product features more successfully reach and benefit specific customer segments such as farmers or MSMEs, or accommodate use cases such assets with "flow" service value (e.g. electricity microgrids)?
- How can product design and features better serve marginalized groups such as women and unbanked people?
- How can non-traditional credit-scoring algorithms, regulations, and other consumer protection measures be designed to minimize default, over-indebtedness, leakage, fraud and other risks to consumers?

Improving Products

- Can loan terms be improved to promote higher repayment rates, for example through delayed loan disbursement or more flexible repayment schedules?
- Which aspects of products are most likely to be beneficial (or harmful)?
- How can data sharing (such as payments cash flow data) impact quality, suitability, access, prices of credit products?

CONSUMER PROTECTION ISSUES

Better Products

- Can interventions that promote competition improve lending terms for consumers?
- What are the effects of interest rate price caps and bans on certain product features that are likely to induce consumer mistakes?

Regulation and Redress

- How do consumer decision-making (i.e. present bias) and market failures (i.e., limited regulation that allows for fraud or improper debt collection practices) affect consumer welfare? Are there policy implications that arise from these impacts?
- Can traditional information and product disclosure approaches improve consumer outcomes when applied in digital credit markets?
- How can technology improve complaint systems around fraud, high prices and other digital credit issues to serve the most vulnerable?
- How can oversight mechanisms on lenders improve consumer outcomes (i.e. transparency of prices, repayment)?
- Can technology improve consumer protection regulations on digital credit?

Financial Ecosystem

- How do we measure trust in digital lending and is trust a good indicator of consumer protection?
- How can data sharing (such as payments cash flow data) impact quality, suitability, access, or prices of credit products?

SUMMARIES OF KEY STUDIES

6

FINTECH AND HOUSEHOLD RESILIENCE TO SHOCKS: EVIDENCE FROM DIGITAL LOANS IN KENYA

Authors: *Tavneet Suri, Prashant Bharadwaj, and William Jack*
Publication: *Journal of Development Economics (2021) | Link*

Intervention: Access to M-Shwari

Outcomes: Loan takeup, financial resilience, expenditures, savings

Research Design: Compares customers on either side of an eligibility threshold to assess impacts of access to credit.

Survey Dates: Jan–Mar 2015; Sep 2016–Jan 2017

Country: Kenya

Context: The take up of M-Shwari has been remarkable: within two years of the launch of the product, there were more than 4.5 million active users (nearly 20% of the adult population) and approximately 10 million accounts had been opened.

Sample:

- Administrative data on 156k clients just above and just below the credit eligibility threshold.
- A random subsample of 6000 clients were surveyed via phone.

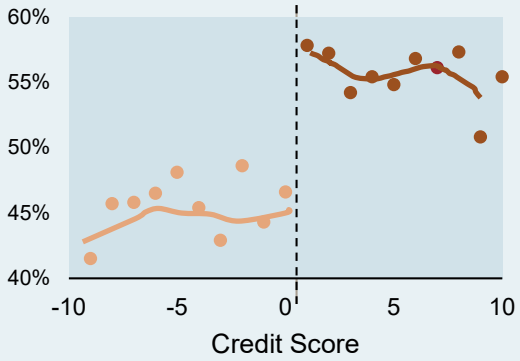
Contribution: One of the first rigorous evaluations on the welfare impacts of digital credit. Demonstrated the high takeup rates of M-Shwari (which was already known anecdotally) and documented improvements on resilience as a result of access to digital loans.

Impact

Almost half the control group held any loans (primarily non M-Shwari loans). Eligibility for M-Shwari results in a large expansion of credit, as households just above the cutoff are 10.6 percentage points more likely to hold any loan.

Proportion of Individuals Holding Any Loan

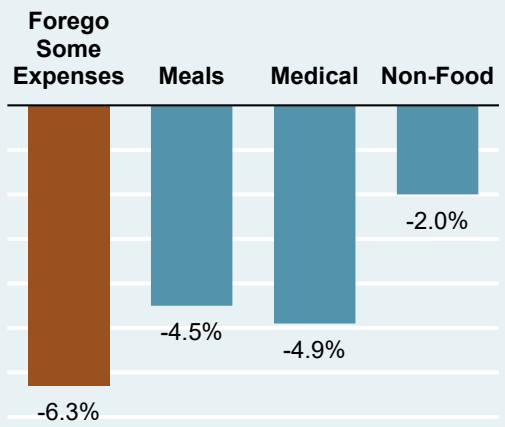
Those to the right of the cutoff line had access to M-Shwari. These individuals were 10.6 percentage points more likely to have a loan



Impact

Households with individuals above the M-Shwari loan cutoff were 6% less likely to forego expenses due to any negative shock and 5% less likely to forego expenses due to a medical shock.

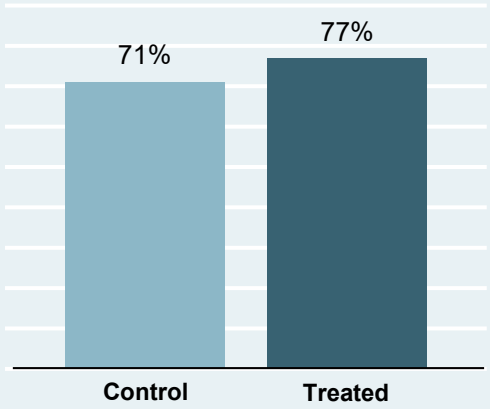
Change in Likelihood of Foregoing Expenses



Impact

The study found small and insignificant impacts on most measures of expenditure, except education. Households just above the cutoff are 5.8 percentage points more likely to report spending on education.

Likelihood of Positive Education Expenses



DIGITAL CREDIT: FILLING A HOLE, OR DIGGING A HOLE? EVIDENCE FROM MALAWI (1 OF 2 | RDD ANALYSIS)

Authors: *Jonathan Robinson, Pascaline Dupas, Valentina Brailovskaya*
Publication: *Working Paper (2021)*

This project has two components. Here, we focus on component one:

Intervention: Access to Airtel Malawi's digital credit product, Kutchova

Outcomes: Loan take-up, credit usage, welfare impacts (i.e. resilience, financial security, well-being, etc.)

Research Design: Compares customers on either side of an eligibility threshold to assess impacts of access to credit.

Survey Dates: Jul 2019 – May 2020

Country: Malawi

Context: 60% of MNO consumers in Malawi are men, and even conditional on account ownership, women use mobile money less.

Sample:

- Admin data: 10,000 users around the credit eligibility threshold; phone surveys with 3,996 customers (46% women)
- 1,100 of whom also participated in surveys for the RCT

Contribution: One of the few evaluations on the impacts of access to digital credit. Gender-balanced sample allows for testing whether effects differ by gender.

Descriptive

Airtel Malawi has 4 million-plus subscribers. The customer base skews urban, young, male, and educated.

Kutchova Loan Terms:

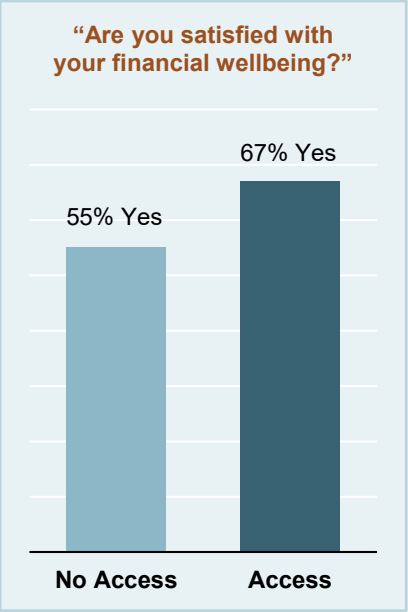
- Must have a mobile money account at least 6 months
- 10% fee, due in 2 weeks. Late fees of 2.5% fees weekly (capped at 22.5%).
- Customers in the study took an average of 4.60 loans, with a total value of USD$18.90.
- The entry-level loan was for MWK 1,000 (about $1.40 USD), enough to pay for some daily expenses (e.g. a kg of maize flour, rice, or sugar)

Impact

- Substantial demand, evidenced by take-up of 44% among those eligible for digital credit, despite very high (and poorly understood) fees
- No effect on coping with shocks (not surprising given small loan sizes)
- Positive but small/insignificant effects on food security and ability to pay for non-food expenses
- The coefficient on total savings is positive and fairly large ($5, about 4.1% of the baseline mean), though not significant.

Impact

The largest effect on well-being was on a subjective measure of financial well-being, which was 12 percentage points higher among those with access to Kutchova.



Impact

- Effects generally did not differ by gender
- Impacts on measures of financial security, especially satisfaction with financial well-being, were stronger for women
- However, they were not statistically distinguishable from impacts for men

DIGITAL CREDIT: FILLING A HOLE, OR DIGGING A HOLE? EVIDENCE FROM MALAWI (2 OF 2 | RCT ANALYSIS)

Authors: *Jonathan Robinson, Pascaline Dupas, Valentina Brailovskaya*
Publication: *Working Paper (2021)*

This project has two components. Here, we focus on component two:

Intervention: Financial Literacy training

Outcome: Knowledge of loan terms and conditions; impacts on borrowing and repayment

Research Design: Evaluates the effects of a Financial Literacy interactive voice response (IVR) module delivered through a Randomized Controlled Trial.

Survey Dates: July - October 2019 (across two surveys)

Sample:

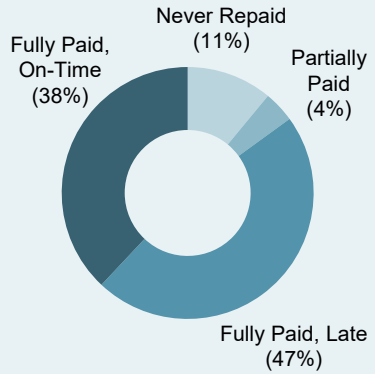
- FinLit survey with 26,467 customers (July - Aug 2019)
- Administrative data (All loans taken between July 2019 - May 2020)
- Surveys on impacts with 3,321 customers (46% women) (Sept - Oct 2019)

Contribution: Directly tests financial literacy and how improved financial literacy impacts demand for credit. A gender-balanced sample allows for testing whether effects differ by gender.

Context

- Loans were taken out for a wide variety of uses. The most common were: airtime (29%), food (21%), electricity (11%), & business transportation (11%)
- The majority of borrowers fail to repay their loans fully and on-time

Repayment Status of Loans

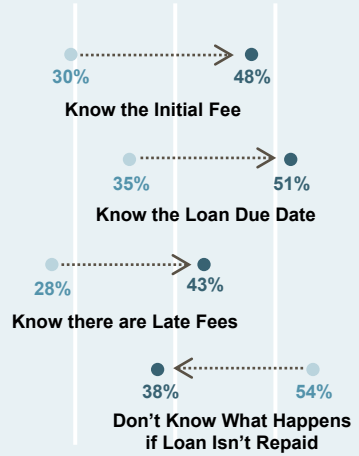


Impact

- At baseline, knowledge of loan terms and conditions is very low - many customers do not know the fees, due date, or what happens if their loan isn't repaid.
- Financial Literacy IVR improved knowledge of loan terms

Control *Treated*

Likelihood that Customers…

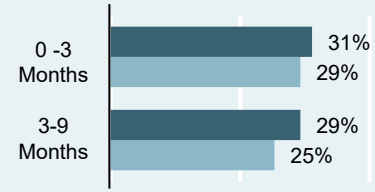


Impact

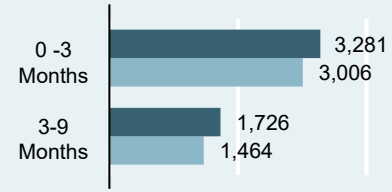
- Surprisingly, Financial Literacy treatment increased demand for the loans in short and longer term.
- These effects were driven entirely by new users; there were no impacts on pre-existing borrowers

Control *Treated*

Likelihood of Taking a Kutchova Loan



Amount Borrowed (MWK)



Impact

Borrowers were more likely to repay on time, but increased loan demand still made users more likely to end up in default.

THE IMPACTS OF LIQUIDITY LOANS TO MOBILE MONEY AGENTS

Authors: *Russell Toth and Siobhan Herbert*
Publication: *Forthcoming*

Intervention: Access to loans and Increased loan size for mobile money (MM) agents

Outcome: Mobile money volumes, agent loyalty, and impacts on the community/WEE

Research Design: Compare agents who took out their first loan just before or just after an unexpected loan policy change which doubled the size of the initial loan offer. The researcher then uses a Differences-in-Differences approach to evaluate impacts on lower-volume agents.

Survey Dates: Oct 2020 - Jan 2021

Country: Myanmar

Context: Mobile phone ownership in Myanmar grew 9x from 2014-2019, following a telecom expansion that began in 2015.

Sample:

- Admin data: 20,000 loans from 9,500 agents
- Survey data: 5,400 agents

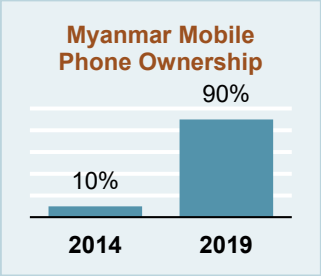
Contribution: Provides insight into how an innovative loan structure could affect both mobile money agents and end-users.

Context

Mobile phone ownership in Myanmar grew 9x from 2014-2019, following a telecom expansion that began in 2015.

Loan Terms::

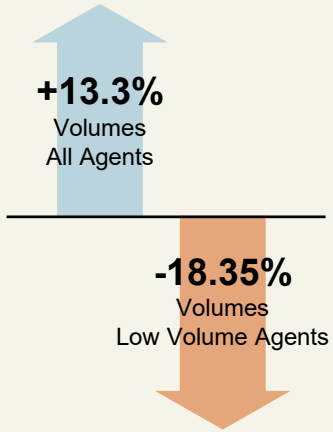
- Loan length 1-12 months
- Loans range from 100k - 20mm Myanmar kyat (~75 - 15,000 USD)
- The average loan is about 2.5mm Myanmar kyat (~1,900 USD)
- By law, interest is capped at 16%
- Nearly 80% of the agents are women



Impact

Doubling the first loan leads to up to a 13.3% increase in monthly mobile volumes in the month a loan is received, but this effect tapers off within 2-3 months.

Lower-volume agents decreased MM volumes by 18-35%, suggesting relatively lower income agents allocate loan funds elsewhere.



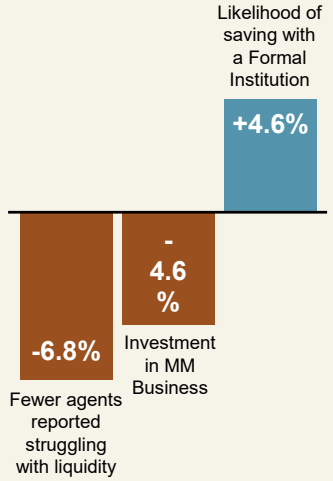
Impact

The loans were followed by an increase in agent loyalty.

The average agent works with 0.78 mobile money companies other than the partner provider in this study, but doubling the first loan decreased this by 0.15 (about a 20% reduction).

Impact

Doubling agents' first loan improved liquidity and savings, though it also reduced time worked on a investment into the mobile money business



Impact

Broadly, the study did not find statistically significant effects on empowerment for women agents themselves nor for women in their community.

The only statistically significant effect is a 1.6% reduction in likelihood of lending particularly to women in one's community.

LIQUIDITY OR CONVENIENCE? HETEROGENEOUS IMPACTS OF MOBILE AIRTIME LOANS ON NETWORK USAGE AND COMMUNICATION EXPENDITURE

Authors: *Oscar Barriga-Cabanillas and Travis J. Lybbert*
Publication: *Working Paper (2021)*

Intervention: Access to airtime loans
Outcome: Total weekly communication expenditure

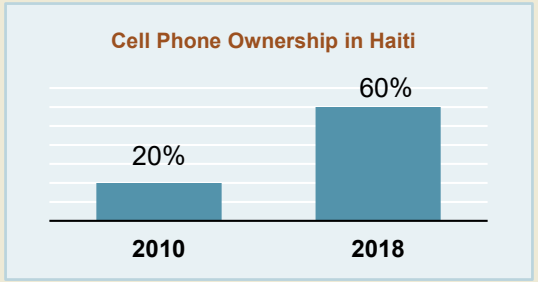
Research Design: The study uses administrative data to identify the impact of access to small airtime loans. To examine heterogenous effects, the study matches a unique phone survey to administrative data.
Survey Dates: January - April 2021
Country: Haiti
Context: 46% of Haitian adults lack access to any formal financial service. Cellphone ownership grew from 20% in 2010 to 60% in 2018, and airtime loans are often the first loans accessed by individuals experiencing poverty.
Sample:

- 96,342 out of 278,697 mobile phone lines in the administrative data
- 600 unique surveys matched to the mobile phone lines (July 2019)
- Phone surveys with 2,361 participants (Jan - Apr 2021)

Contribution: The study explores the effects of lifting liquidity constraints and what drives the demand for digital loans.

Descriptive

- Population: Cell phone ownership is low, but growing rapidly in Haiti.
- Conditional on age, women in Haiti own mobile phones at a similar rate to men, but spend about 25% less on network communications

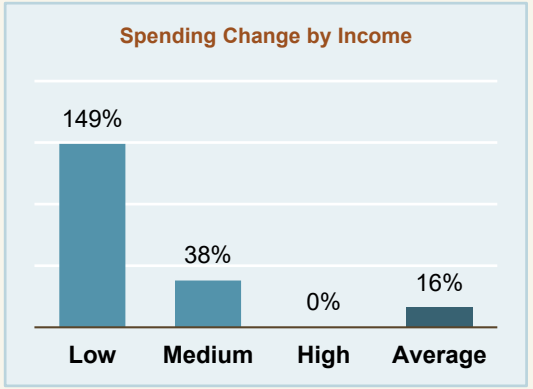


Loan Terms:

- Customers can request their first loan five weeks after initial activation.
- Two-thirds of eligible customers request at least one loan every 60 days.
- Loans range from USD$0.13 to USD$2.00; the median loan is USD$0.39
- 30 day term with a 10% facilitation fee
- Loans can be paid back in multiple installments

Impact

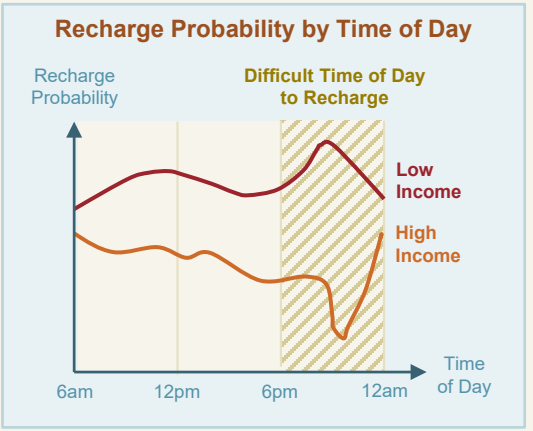
Access to credit increases airtime spending by 16% on average.



- Access to credit more than doubled airtime spending for the poorest customers, but had no effect on customers with the highest income
- Despite systematic differences in cell phone usage by gender, the study found no evidence that the impacts of airtime loans differ by customer gender.

Impact

- Airtime loans could impact expenditure by relaxing liquidity constraints, reduce marginal communication costs and lower transaction costs associated with visiting an agent to top up one's cell phone.



- Low income consumers were more likely to recharge at night, despite higher transaction costs
- This result is consistent with the idea that poorer customers wait until they have more certainty over their daily incomes before deciding how much to recharge

EFFECTS OF INCREASING CREDIT LIMIT IN DIGITAL MICROLENDING: A STUDY OF AIRTIME LENDING IN EAST AFRICA

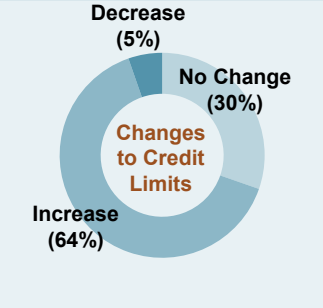
Authors: *Alain Shema*
Publication: *The Electronic Journal of Information Systems in Developing Countries (2021)*

Intervention: Changing credit limits
Outcome: Airtime borrowing and spending, Repayment Rates

Research Design: Randomized controlled trial that evaluated how changing airtime loan credit limits for a subset of customers impacted borrowing, network usage, and repayment.
Survey Dates: n/a
Country: Anonymous
Context: About 73% of the MNO's active subscribers were qualified to borrow in July 2019, with 45% of qualified customers taking loans. Airtime loans represent ≈ 27% of the airtime spending on the network.
Sample: 46,531 existing customers were assigned new credit limits (treatment) and another random subset of 29,985 customers who act as control
Contribution: Tests how changes to credit limits affects consumers' credit usage and repayment. Novice borrowers (and their lender) appear to benefit from lower credit limits until they gain experience with repayment.

Descriptive

The experiment randomly selects creates a new credit limit for subset of customers based on prior borrowing and repayment patterns.

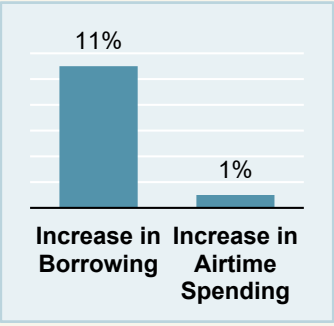


Loan Terms:

- 7 discrete loan amounts from ~USD $0.02-$0.31
- The largest loan pays for 200 minutes of voice calls and 20 SMSs
- There is a fixed service fee, ranging from 15% to 75% of the loan value
- Loans have a 30 day term

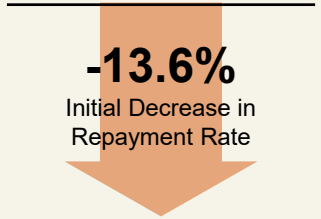
Impact

- Borrowers with increased credit limits immediately increased borrowing the next month, but did not correspondingly increase airtime spending.
- Customers may have viewed borrowing as an alternative to recharging, and the borrowing did not fuel unmet demand for airtime spending.



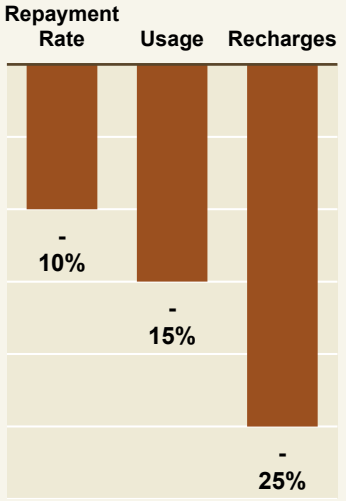
Impact

Customers who saw increases in their credit limits saw a 13.6% decrease in their repayment rate compared to similar customers who did not see a change in their credit limit.



Impact

- Increased borrowing reverted in the second month, while longer term repayment, airtime usage and airtime recharges decreased
- Some customers appear to have left the network with outstanding loans.



Impact

Customers may have viewed borrowing as an alternative to spending, and the borrowing did not fuel unmet demand for airtime spending.

Borrowers in the following categories saw smaller changes in their repayment rates following credit limit changes:

- Longer borrowing history
- Longer-term patterns of repayment
- Smaller Loan Sizes

WELFARE IMPACTS OF DIGITAL CREDIT: A RANDOMIZED EVALUATION IN NIGERIA

Authors: *Joshua Blumenstock, Daniel Björkegren, Suraj Nair, Omowunmi Folajimi-Senjobi, Jacqueline Mauro*
Publication: *Working Paper (2023)*

Intervention: (1) Vary access to credit and (2) Vary the amount of credit customers receive

Outcome: Access to credit, financial health, well-being, resilience, WEE

Research Design: Two stage randomization - (1) Half of applicants were automatically approved for a loan, whereas the other half were vetted by a standard loan approval process (to identify the impact of access to credit); (2) Initial loan offer size was also randomly assigned (to identify the impact by loan size).

Survey Dates: Nov 2019 - Feb 2020

Country: Nigeria

Context: In Nigeria there are 50+ digital credit products on the market, most of which require a bank account. As of 2020, there was no regulation of digital lending in Nigeria.

Sample:

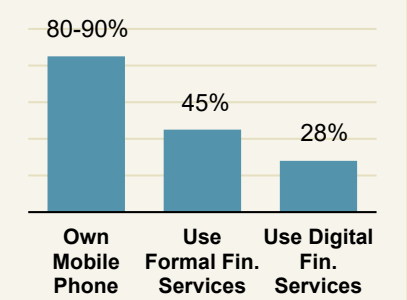
- 46,937 customers enrolled
- 1,618 phone surveys (24% female)

Contribution: One of few impact evaluations that can identify the causal impacts of digital credit on welfare. The study rules out large negative impacts from increased access to credit (such as over-indebtedness) and finds modest positive effects (on subjective wellbeing).

Context

Access to Credit

The percentage of Nigerians who:



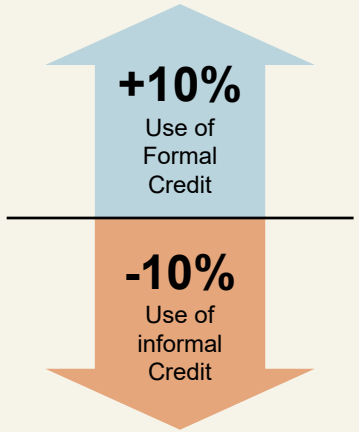
Loan Terms

- Initial loans sizes were randomized, ranging from USD$2.75 - $35.75
- Average initial loan size was USD$15, and the total average borrowed over 3 months was USD$56
- *Monthly* interest of 15 - 22% based on credit score.
- On-time payment required for future loans; no other penalty for default.

Impact

Access to Credit

- The interventions mechanically increased access to formal credit (by approving more applicants, 85% of whom took out a loan).
- Accompanied by a small, but significant, decrease in the use of informal loans.



Impact

Financial Health and Overall Well-Being

- No large impacts (positive nor negative) on income, expenditure, and resilience
- Small (but statistically significant) improvements in subjective well-being
- Small (but statistically insignificant) improvement in financial health (e.g. “always able to pay a bill on time”)

Impact

Gender-Related Outcomes

- Similar impacts for female vs. male borrowers
- No impacts on women’s economic empowerment

TOO FAST, TOO FURIOUS?
DIGITAL CREDIT SPEED AND REPAYMENT RATES

Authors: *Afredo Burlando, Michael Kuhn, and Silvia Prina*
Publication: *Working Paper (2023)*

Intervention: Speed of loan disbursement

Outcome: Repayment rates

Research Design: The study leverages a unique loan approval process which "batches" applications, and compares repayment outcomes for loans submitted right before or after this cutoff time.

Survey Dates: Admin data only

Country: Mexico

Context: The consumer protection implications of easy, quick credit are not well known. Digital credit may be able to help households cope with unexpected shocks, but the ease and speed of accessing lines of credit could potentially increase defaults or over-indebtedness.

Sample:

- 11,512 disbursed loan applications from 7,206 unique borrowers.
- 48% of these loans are from first-time borrowers.

Contribution: Finds that delays in credit disbursement may facilitate lower default rates.

Context

Consumers submit an application online and immediately receive a preliminary approval or rejection. Agents send approved loans to the bank in "batches" 2-4x per day at unpredictable times.

Just missing the previous batch doubles the disbursement time from 10-20 hours on average.

31%

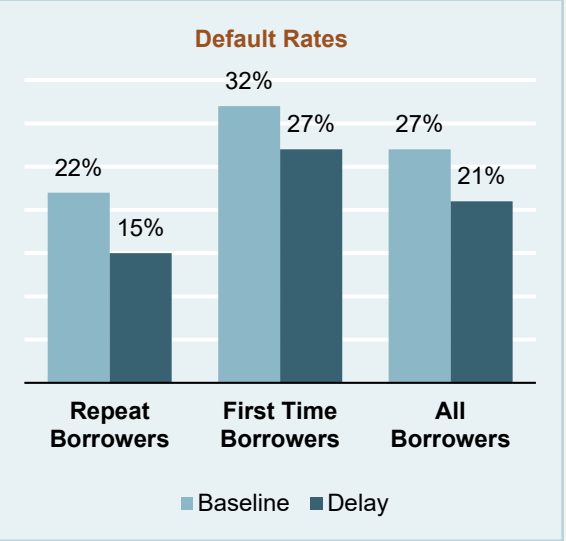
Lower likelihood of receiving funds the same day for borrowers who missed the cutoff

Loan Terms

- Loan sizes range from 1,500-3,000 Mexican pesos (~USD $75-150)
- Loan terms vary from 7-30 days.
- Annualized interest rates reach up to 478.8%.
- Default rate in the data for this study = 27%

Impact

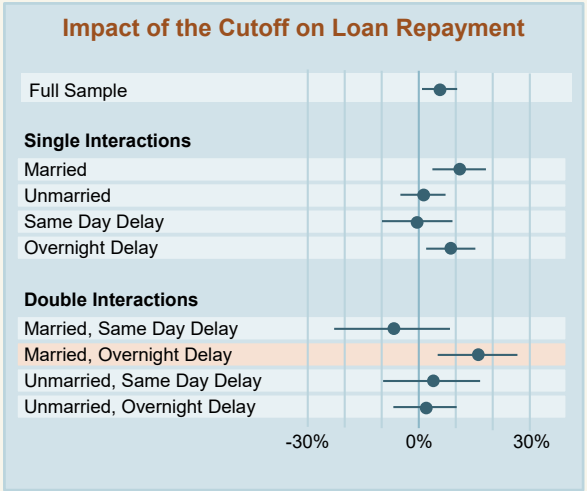
On average, delayed loan disbursement was associated with a 5.6pp reduction in non-repayment, a 21% reduction in default



These effects were larger for repeat borrowers, whose non-repayment rates fell 7pp, a 33% reduction in default.

Impact

The effects of delays on repayment were stronger for certain groups: Married Borrowers, especially women; Higher Income Borrowers; Higher Credit Score Borrowers; and Afternoon Applicants (whose funds were more likely to arrive the next day if delayed)



Potential mechanisms consistent with the data

- **Impulse Behavior:** Delay provides extra time to deliberate about the use of loans
- **Household Bargaining:** Delay encourages more household bargaining over loan uses

DIGITAL CREDIT AND AGRICULTURE:
A RANDOMIZED EXPERIMENT IN GHANA

Authors: *Christopher Udry, Monica Lambon-Quayefio, Dean Karlan, and Utsav Manjeer*
Publication: *Forthcoming*

Intervention: Agricultural input credit loans

Outcome: Borrowing, spending, cultivation, farming outcomes, welfare outcomes, gender outcomes

Research Design: The intervention randomly provides loans, in the form of agricultural inputs, to farmers who may also access several other services from the implementing partner, Farmerline.

Survey Dates: Apr 2019 - Nov 2020

Country: Ghana

Context: Low population densities and poor infrastructure makes traditional microcredit for farmers costly, and success has been limited. Digital approaches have also struggled with take-up, preventing rigorous evaluation of impacts.

Sample: 1,372 farmers (917 treatment and 455 control)

Contribution: Finds that access to input credit increases spending on a number of related farming inputs, but did not necessarily lead to increased profits or well-being, consistent with other evidence on agricultural evidence.

Descriptive

Mergdata is a mobile app. Farmers can apply for farming inputs on credit and receive other services including weather forecasts, market prices and farming tips.

Credit scores are algorithmically calculated using data on farmers' production histories, sales, and operational data.

Loan Terms:

Treatment farmers received input credit worth up to GHS 350 (about USD $75). Farmers choose from inputs including inorganic fertilizers, insecticides, and herbicides. Farmers repay at a 4% per-month rate with monthly repayment period starting 3 months after disbursement. Full repayment is due within 6 months.

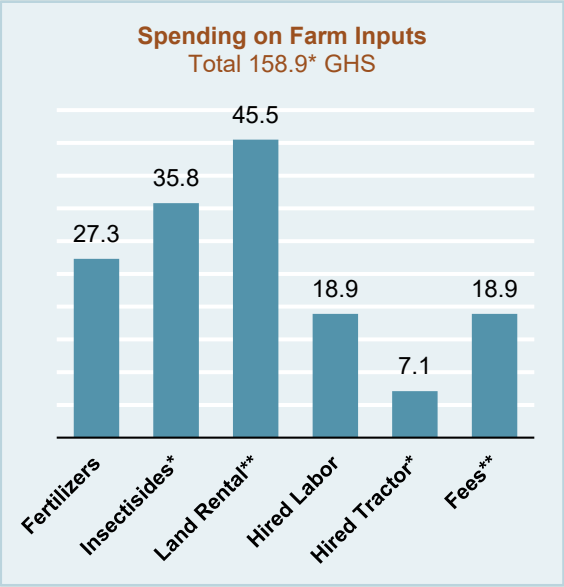
The control group was not intended to receive input credit, though 16.5% did anyway. Farmers in the control group still had access to other services from Farmerline.

While farmers were expected to receive input loans within 30 days of application, logistical delays resulted in some farmers receiving timely loans and others not.

Impact

Spending: Treated farmers, on average, spent more on farm inputs, but in many cases, the difference is not statistically significant.

We show a selection below:



** Denotes a statistical significance (90% level)*
*** Denotes a statistical significance (95% level)*

Impact

Borrowing: Significant increase in borrowing from MFIs, and insignificant reduction in borrowing from moneylenders.

Cultivation: Farmers decreased area growing a single crop & increased area for multiple crops (0.49Ha, *statistically significant*), for a small net increase in cultivated area (.20Ha).

Farming Outcomes: Farmers who received their loans on time saw sizable increases in crop production and sales.

Welfare Outcomes: No evidence of improved food security and negative, but not significant, effects on non-farm business involvements & damages from shocks.

Gender Outcomes: The interaction between the input credit and gender produced mixed outcomes:

- Women spent significantly less on other farming inputs, opposite of men
- Female farmers' profits improved. Researchers speculate input credit may have driven lower input spending at the market, allowing profits to improve
- Women's non-farm business income increased, whereas men's did not. However, women borrowers didn't experience the gains in perceived social status that male borrowers did.
- Female farmers suffered less damage from shocks.

GENDER DISCRIMINATION IN THE DIGITAL CREDIT ERA

Authors: *Ketki Sheth, Shanthi Manian*
Publication: *Working Paper (2023)*

Intervention: Randomized business owner's gender on application materials shown to loan officers

Outcome: Measures of gender bias

Research Design: Researchers recruited financial providers to act as judges in a real business plan competition. To evaluate potential effects of gender discrimination, they randomly assigned the business owner's gender on the applications shown to judges.

Survey Dates: Jan 2020 – Aug 2021

Country: Ethiopia

Context: Woman-owned businesses earn lower profits and are less likely to obtain formal financing than male-owned counterparts. These gaps are only partially explained by differences between men and women, suggesting discrimination may be at play.

Sample:

- 916 applicants to a business plan competition
- 3,696 evaluations (~4 evaluations/applicant)

Contributions: Provides further evidence that gender-blind decision making does not lead to equity in lending decisions. A future RCT would contribute a rigorous evaluation of the welfare impacts of this gender-differentiated credit scoring model for women loan applicants.

Context

There is evidence that algorithms can be used to help avoid human prejudice in decisions prone to biases. On the other hand, automated decision-making using available data could replicate or exacerbate underlying inequalities. The research team outlined four methods of evaluating business plans to understand how each method could affect the equity and efficiency of capital allocation decisions, planning to compare human and algorithm-based loan decision-making.

Study Design

The researchers recruited 84 financial providers from 10 financial institutions to serve as judges in a real business plan competition. They evaluated 916 applications. The gender of the business owner was randomly assigned to be shown as either male or female on applications provided to the judges. Each business was evaluated multiple times, and each financial provider evaluated multiple businesses, for a total of over 3,600 evaluations. This allowed researchers to compare the judges' evaluations of each business plan depending on the apparent gender of the applicant, allowing them to causally identify whether financial providers discriminate against female entrepreneurs.

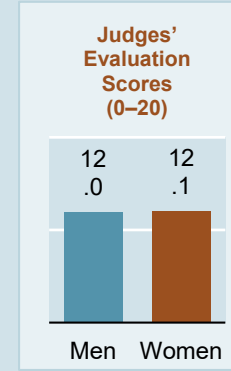
Impact

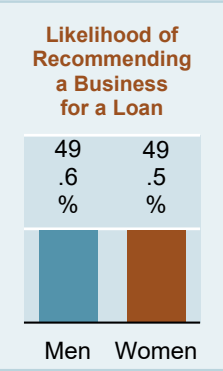
Researchers did not find gender discrimination among judges of a business plan competition in Ethiopia.

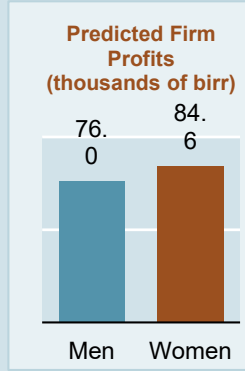
Researchers randomized the gender shown to judges on applications to a real business plan competition in Ethiopia, and found no evidence that judges discriminated against female-owned businesses.

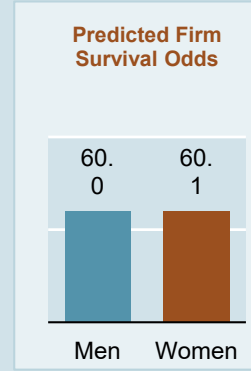
Judges' evaluation scores, likelihood of recommending a business for a loan, and assessment of future business performance were all unaffected by the randomly assigned gender on the application.

Judges' assessments of future business performance were also unrelated to gender, which was accurate. A follow-up survey 18 months after the competition found business survival and profits did not differ by the true gender of the business owner.









UNDERSTANDING THE BARRIERS TO AGRICULTURAL CREDIT FOR WOMEN FARMERS

Authors: *Berber Kramer, Patrick Ward, Subhransu Pattnaik*
Publication: *IFPRI Working Paper (2021)*

Intervention: Gender sensitization training + novel credit scoring approach

Outcome:

Research Design: The study combines surveys, intended to measure gender norms and their effects on demand for agricultural loans, with a randomized controlled trial intervention which provides gender sensitization training.

Survey Dates: June – Oct 2020

Country: India

Context: In LMICs like India, smallholder farmers often lack access to credit from formal financial institutions. Algorithms could reduce costs for agricultural loans, expanding access to credit - especially for women farmers who typically lack land records - but it could also disempower women, given their limited mobility and smartphone access relative to men.

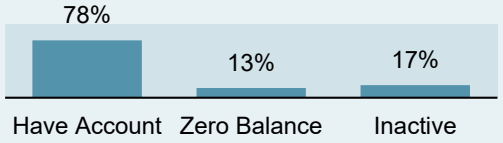
Sample: 3,514 respondents (women farmers plus a family member) in Cuttack and Jaipur

Contributions: Examines gender differentiated effects on demand for credit of alternative credit scoring and crop insurance, finding gender norms impact demand for credit but sensitization training are ineffective in shifting norms.

Context

Odisha is a state in eastern India where agriculture is a primary source of income and agricultural credit is widespread: in 2017–18, farmers jointly borrowed USD 2.07bn.

Women typically have lower output per unit of land, in part because smallholders and marginal farmers, and especially women, lack access to institutional credit. Although three-quarters of women in India have an account with a financial institution, this is not a true indicator of their financial inclusion.



KhetScore uses remote sensing technologies, machine learning, and crop images to (i) digitize information on land parcels (ii) create plot-level agricultural credit scores (iii) verify crop damage.

Design: Randomly assign villages:

A. Control group: standard procedures (50%)

B. Agricultural loans w/ KhetScore (25%)

C. Agricultural loans w/ KhetScore + participate in gender sensitization training (25%)

Impact

Women reported lower desired loan amount: INR 34,763 (US$475) vs. INR 38,633 (US $528) for men. However, alternative credit scoring and crop insurance boosted demand for loans more for women than men.

Loan Demand (INR)	Men	Women
Baseline	38,633	34,763
+ Khetscore	+ 1,893	+ 3,300
+ Insurance	+ 1,256	+ 2,584

Some differences are not related to gender per se, but rather to characteristics related to women in Odisha (i.e. restricted mobility and lower levels of empowerment).

Impact

Gender sensitization training did not affect perceived gender roles, agricultural decision making, asset ownership, or demand for credit.

Though anecdotal reports suggest that a switch from in-person to virtual trainings due to COVID-19 reduced their effectiveness, overall these trainings did not have beneficial impacts for women.

No effects on:

- Perceived Gender Roles
- Agricultural Decision-Making
- Asset Ownership
- Demand for Credit

Negative Effects on:

- Group membership for women (positive effect for men)
- Mobility

DIGITAL CREDIT LINKED TO DIGITAL PAYMENTS: IMPACT ON SMALL MERCHANTS

Authors: *Ethan Ligon, Badal Malik, Ketki Sheth, Carly Trachtman*
Publication: *PLoS ONE (2019)*

Intervention: n/a – Conducted Surveys
Outcome: Measured ability of merchants to use digital payments and reasons why they chose not to

Research Design: Pilot
Survey Dates: April – Sept 2017
Country: India
Context: Following the 2016 demonetization policy in India, there has been a significant push by the government of India to promote the use of digital finance to reduce corruption and tax evasion.
Sample: 6,011 fixed store merchants in markets around Jaipur
Contributions: Provide a basis for understanding why merchants chose not to adopt digital payments, and what mechanisms policy makers could rely on to encourage adoption.

Policymakers in India who wish to encourage additional adoption of digital payments by small-scale merchants should consider policies that address customer concerns, as simply subsidizing adoption among small-scale fixed store merchants may not be sufficient.

Context

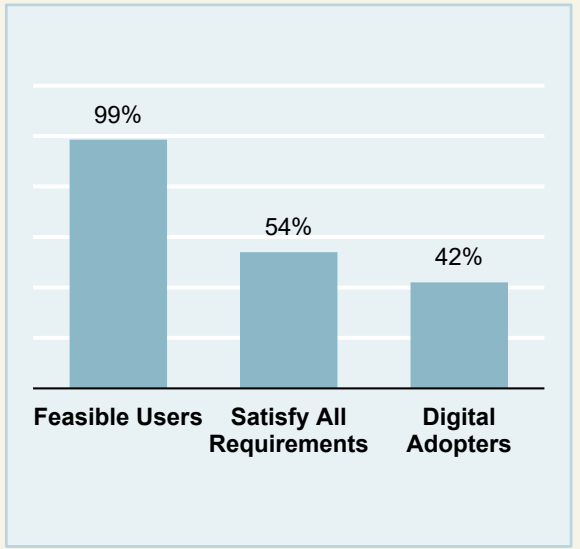
The research team studied the adoption of digital payments technologies in Jaipur, India.

1,003 Merchants Surveyed

They surveyed 1,003 merchants with small, fixed-store enterprises to understand whether the costs of obtaining a bank account, an appropriate device, internet access, usage fees, or limited technological literacy could explain the limited adoption of digital payments.

Outcome

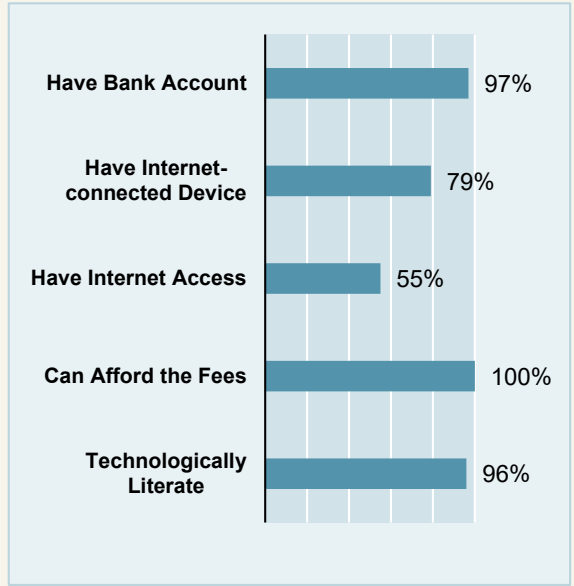
Roughly 60% of merchants in the sample have not adopted digital payments of any type. Supply-side barriers do not fully explain the low rates of adoption.



Even among users of digital payments, 81.4% of transactions are still being done in cash.

Outcome

The percentage of sample firms that meet prerequisites for digital payment feasibility:



While suppliers can, but don't, adopt digital payments, researchers found evidence that demand-side factors, such as a perceived lack of customers wanting to pay digitally, or customer concern over taxes, contribute to lower digital payment adoption.

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