

Monitoring Consumer Protection Risks in the Digital Age

Daniel Putman, Postdoctoral Fellow

March 30, 2022

Innovations for Poverty Action

Consumer Protection Practitioner's Forum

ipa
INNOVATIONS FOR POVERTY ACTION

Why Market Monitoring?

Background and Motivation

Market Monitoring

Goals:

1. Identify potential consumer protection concerns
2. Inform development of policies and interventions

Examples:

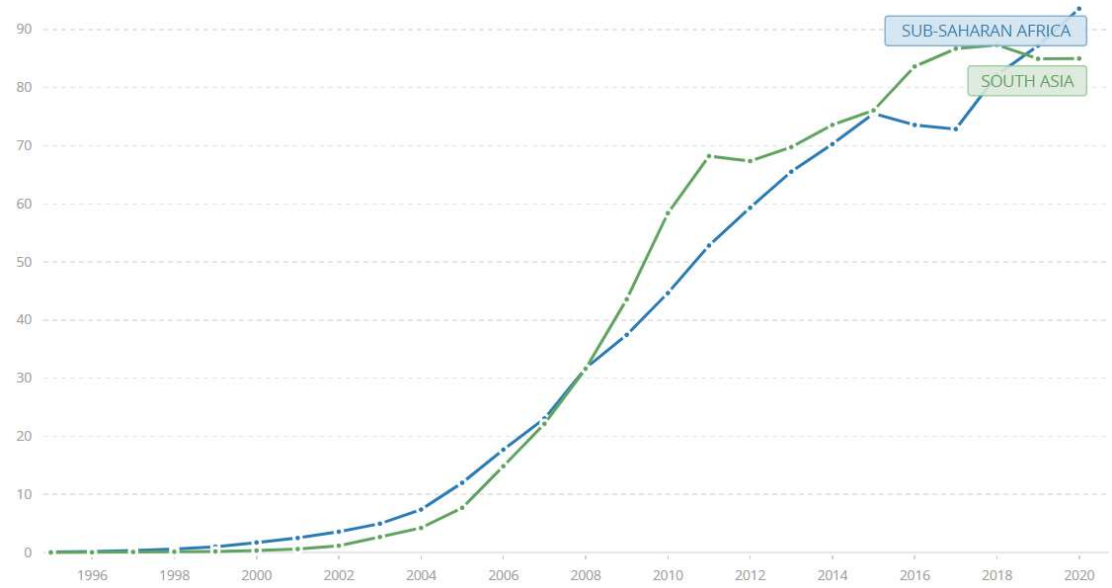
1. Kenya: IPA with the Competition Authority of Kenya[1]
2. Sierra Leone: IPA with UNCDF & the Bank of Sierra Leone[2]
3. Tanzania: CGAP with Central Bank of Tanzania[3]

1 Putman, D., Mazer, R., & Blackmon, W. (2021). Report on the Competition Authority of Kenya Digital Credit Market Inquiry Competition Authority of Kenya and Innovations for Poverty Action.
2 Blackmon, W., Cuccaro, F., Holzinger, A., Mazer, R., Ngwabe, W., & Putman, D. (2021). From the Field to Policy Formulation—How Research is Informing Consumer Protection in Sierra Leone. Innovations for Poverty Action. https://www.poverty-action.org/blog/field-policy-formulation—how-research-informing-consumer-protection-sierra-leone
3 Izaguirre, Juan Carlos, Rafe Mazer, and Louis Graham. "Digital Credit Market Monitoring in Tanzania," no. September (2018).

Growth in Digital Financial Services

- Large growth in Mobile Money in South Asia and Sub-Saharan Africa[4,5]
- Digital credit has been built on this foundation – strong growth in markets like Kenya where MM adoption was high[6,7]

Mobile cellular subscriptions (per 100 people)[8]



4 Andersson, Simon, and Nika Naghavi. "State of the Industry Report on Mobile Money," *GSMA* 2021.
5 Demirguc-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. "The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution," 2018. https://doi.org/10.1596/978-1-4648-1259-0.
6 Anderson, C. Leigh, Travis Reynolds, Marieka Klawitter, Pierre Biscaye, Kirby Callaway, Melissa Greenaway, Daniel Lunchick-Seymour, and Max McDonald. "Review of Digital Credit Products in India, Kenya, Nigeria, Tanzania, and Uganda." EPAR Technical Report, 2017.
7 Totolo, Edoardo. "The Digital Credit Revolution in Kenya: An Assessment of Market Demand, 5 Years On," no. March (2018): 28. https://www.microfinancegateway.org/library/digital-credit-revolution-kenya-assessment-market-demand-5-years.
8 World Bank Data: https://data.worldbank.org/indicator/IT.CEL.SETS.P2?end=2020&locations=ZG-8S&start=1995

Benefits have accompanied digitization of financial services

In tandem to increased adoption of financial services:

- Reduced transaction costs[9]
- Resiliency to risk[10,11]
- Poverty reduction[12]

9 Chen, Greg, and Rafe Mazer. "Instant, Automated, Remote: The Key Attributes of Digital Credit." *CGAP Blog*, 2016. https://www.cgap.org/blog/instant-automated-remote-key-attributes-digital-credit.
10 Jack, William, and Tavneet Suri. "Risk Sharing and Transactions Costs: Evidence from Kenya's Mobile Money Revolution." *American Economic Review* 104, no. 1 (2014): 183–223. https://doi.org/10.1257/aer.104.1.183.
11 Suri, Tavneet, Prashant Bharadwaj, and William Jack. "Fintech and Household Resilience to Shocks: Evidence from Digital Loans in Kenya." *Journal of Development Economics* 153, no. April 2020 (2021): 102697. https://doi.org/10.1016/j.jdeveco.2021.102697.
12 Suri, Tavneet, and William Jack. "The Long-Run Poverty and Gender Impacts of Mobile Money." *Science* 354, no. 6317 (2016): 1288–92. https://doi.org/10.1126/science.aah5309.

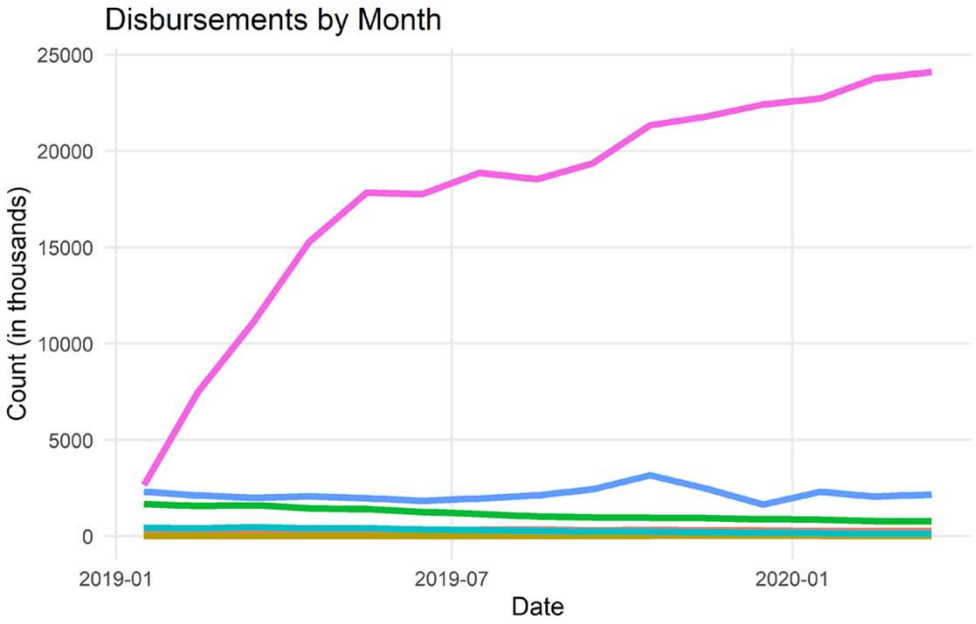
Digitization is a double-edged sword

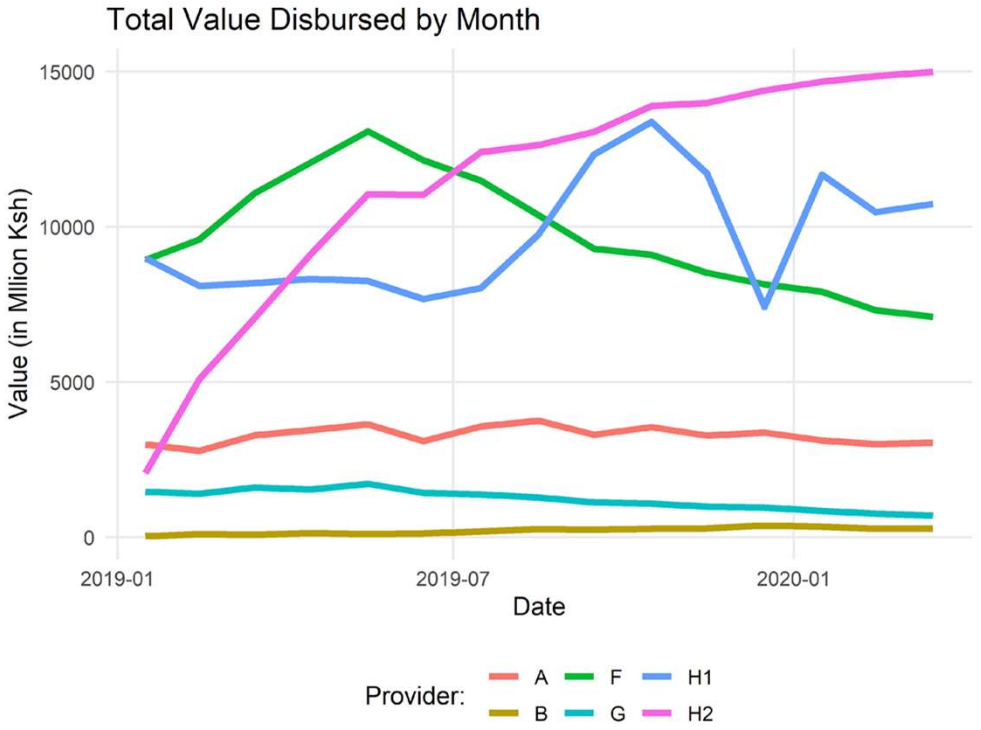
- Opportunities for misconduct and fraud[13]
- Products are often not fully understood by consumers[14]
- Aspects of digital credit can heighten risks: speed of disbursement,[15] increases in credit limits[16]
- Product information and experience may help alleviate some risks[17,18]

13 Garz, Seth, Xavier Giné, Dean Karlan, Rafe Mazer, Caitlin Sanford, and Jonathan Zinman. "Consumer Protection for Financial Inclusion in Low- and Middle-Income Countries: Bridging Regulator and Academic Perspectives." *Annual Review of Financial Economics* 13, no. 17 (2021): 1–28. https://doi.org/10.1146/annurev-fe-2-110110-100001.
14 Brailovskaya, Valentina, Pascaline Dupas, and Jonathan Robinson. "Is Digital Credit Filling a Hole or Digging a Hole? Evidence from Malawi," 2021.
15 Burlando, Alfredo, Michael A. Kuhn, and Silvia Prina. "Too Fast, Too Furious? Digital Credit Delivery Speed and Repayment Rates." *CEGA Working Paper*, 2021. https://doi.org/10.11436/mssj.15.250.
16 Shema, Alain. "Effects of Increasing Credit Limit in Digital Microlending: A Study of Airtime Lending in East Africa." *Electronic Journal of Information Systems in Developing Countries*, no. July 2020 (2021): 1–14. https://doi.org/10.1002/isd2.12199.
17 Breza, Emily, Martin Kanz, and Leora Klapper. "Learning to Navigate a New Financial Technology: Evidence from Payroll Accounts," 2020.
18 Annan, Francis. "Misconduct and Reputation Under Imperfect Information," 2021.

Digital Financial Services are still evolving

Market dynamics in Kenya shifted significantly in 2019 with a new overdraft product





Why use administrative data?

What is administrative data?

Any data that is collected and stored by organizations for operational as opposed to research purposes

As digital financial services have grown, automation has meant digitized record keeping, which provides an opportunity:

1. Digital credit administrative data has become larger scale and better kept
2. Includes records like account information, disbursements, fees, repayments, rollovers, etc.

Advantages of administrative transaction data

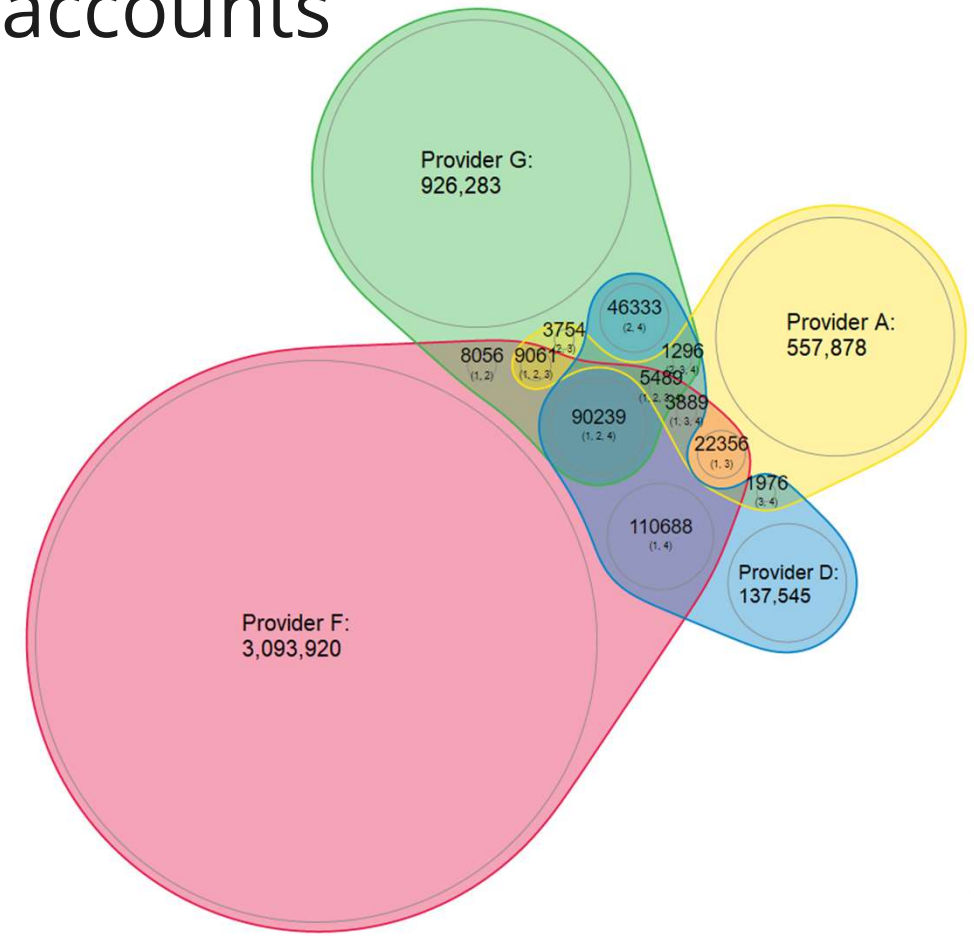
1. Lower **cost** of data collection both participants and researchers
2. Detailed data is generated **quickly** and is more up to date
3. Can also trace out the **evolution** of outcomes over time
4. Better **measurement** of outcomes[19]
   - *Accuracy and precision when studying difficult to recall outcomes*
   - *Avoids social desirability biases*

19 See also: Feeney, Laura, Jason Bauman, Julia Chabrier, Geeti Mehra, Michelle Woodford, and J-PAL North America. “Using Administrative Data for Randomized Evaluations,” 2018.

Digital Credit Market Inquiry:
Consumers with multiple accounts

Multiple Account Holding in the Digital Credit Market Inquiry:[20]

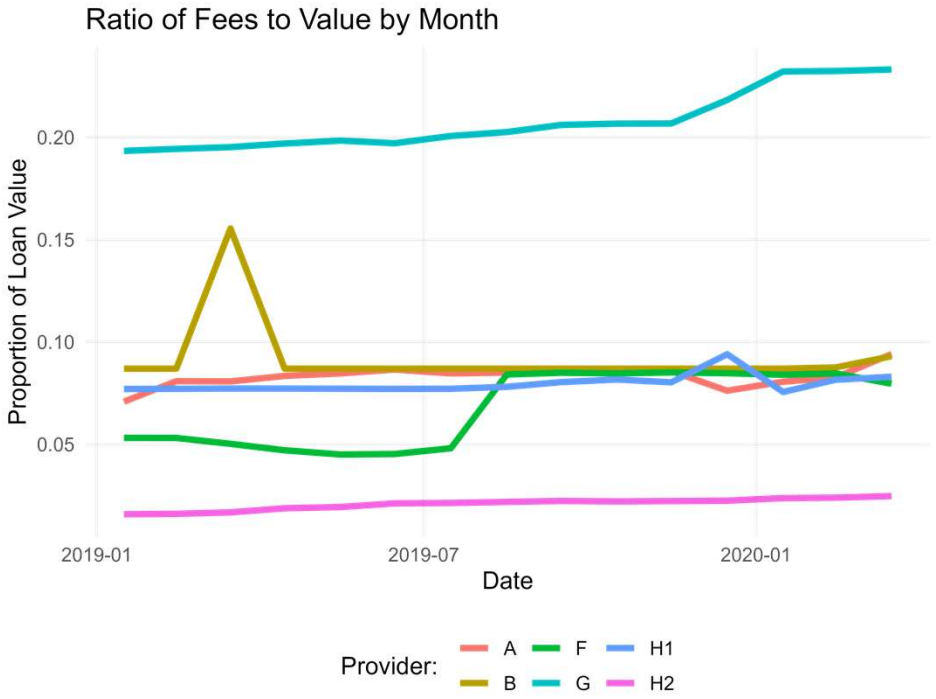
1. De-identified phone numbers through a common process which allowed us to match them later
2. Found 6% of our sample had multiple accounts



20 Putman, Daniel, Rafe Mazer, and William Blackmon. "Report on the Competition Authority of Kenya Digital Credit Market Inquiry," 2021.

Digital Credit Market Inquiry:
Three Pricing Insights from Fee Data

1. Prices converge among similar lending by deposit-taking institutions (A, B, F, H1)
2. Higher fees at non-deposit taking institution (G)
3. Lower fees (and shorter tenure) for overdraft product (H2)



Previewing the Toolkit

A detailed and practical market monitoring toolkit, focused on digital credit

There are many* admin data toolkits, how is this one different?

The toolkit is aimed at addressing the unique opportunities and challenges of using digital credit transaction data for consumer protection market monitoring

We view this toolkit as a complement, not a substitute

*A few handbooks and toolkits on the subject:

1. Cole, Shawn A, Iqbal Dhaliwal, Anja Sautmann, and Lars Vilhuber. Handbook on Using Administrative Data for Research and Evidence-Based Policy, 2020.
2. Feeney, Laura, Jason Bauman, Julia Chabrier, Geeti Mehra, Michelle Woodford, and J-PAL North America. “Using Administrative Data for Randomized Evaluations,” 2018.
3. Burke, Laura, Jennifer Cowman, and Heidi Mcannally-linz. “Using Administrative Data for Monitoring and Evaluation,” no. February (2016).
4. Brown, Julia, Lucia Goin, Nora Gregory, Katherine Hoffmann, and Kim Smith. “Evaluating Financial Products and Services in the US: A Toolkit for Running Randomized Controlled Trials,” 2015.

Digital Credit Outcomes in the Toolkit

Definitions and interpretations in seven areas:

1. Market size
2. Pricing and fees
3. Loan repayment
4. Competition and concentration
5. Multiple borrowing and switching
6. Over-indebtedness
7. Credit applications

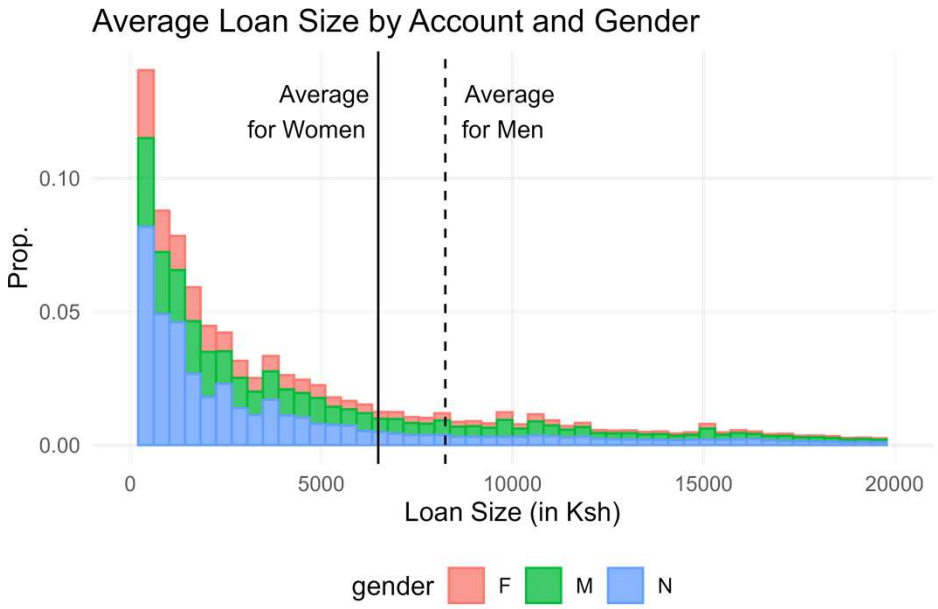
Level of Aggregation: Digital Credit Data

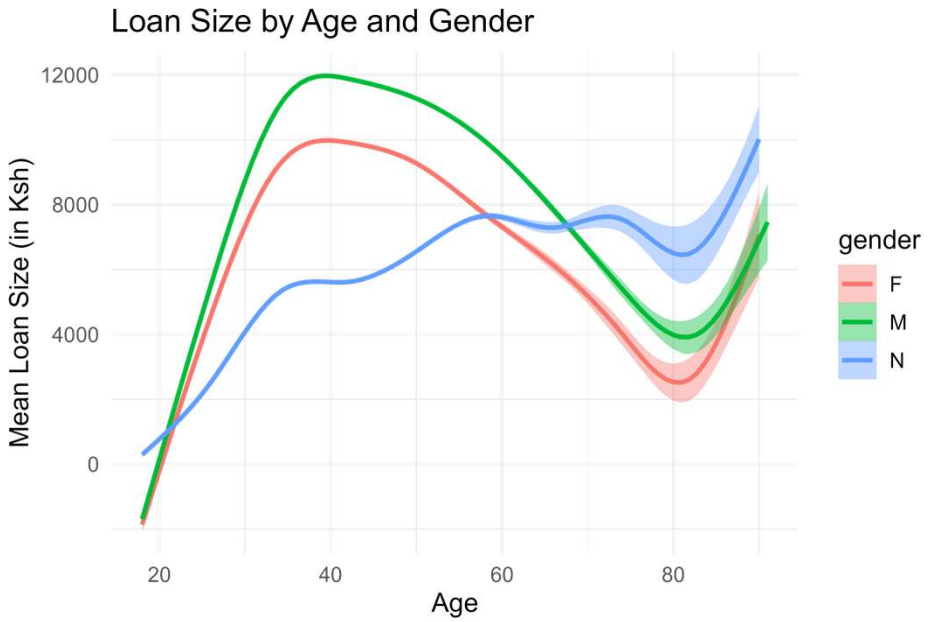
Topic	Provider/Product	Account	Loan	Transaction
Loan contracts	Average loan size, contracted tenure (when fixed)	(Consumer weighted) average loan size, Distribution of number of loans and loan size	Distribution of loan sizes, tenure, contracted APR	Effective tenure
Pricing and fees	Total cost and per loan cost		APR, Distribution of APR	Effective APR
Repayment behavior	Total value defaulted and outstanding loans		Late repayment, default, rollovers	Detailed repayment behavior: early repayment
Multiple borrowing		Multiple account holding	Multiple borrowing	Loan repayment as a function of taking second loan
Statistics:	Means and totals	Means, SDs, Distributions, Regressions	Means, SDs, Distributions, Regressions	

Consumer Segmentation

Goal	Relevant characteristics	Example method
Explore differences in consumer outcomes by **consumer** and **provider characteristics**	• Gender • Age • Delivery channel (e.g., USSD/SIM Toolkit v. App)	Plot distributions of outcomes Plot means over continuous variables (e.g., average loan size over age)
Explore **seasonality** and **market evolution**	• Date and time • Years, Quarters or Months	Visualize trends over time (e.g., number of disbursements by month by provider)
To segment borrowers into different **behavioral groups** with different policy needs	• Consumer protection outcomes, e.g., APR, late repayment, multiple borrowing	Use cluster analysis on borrower outcomes to identify similar groups of consumers

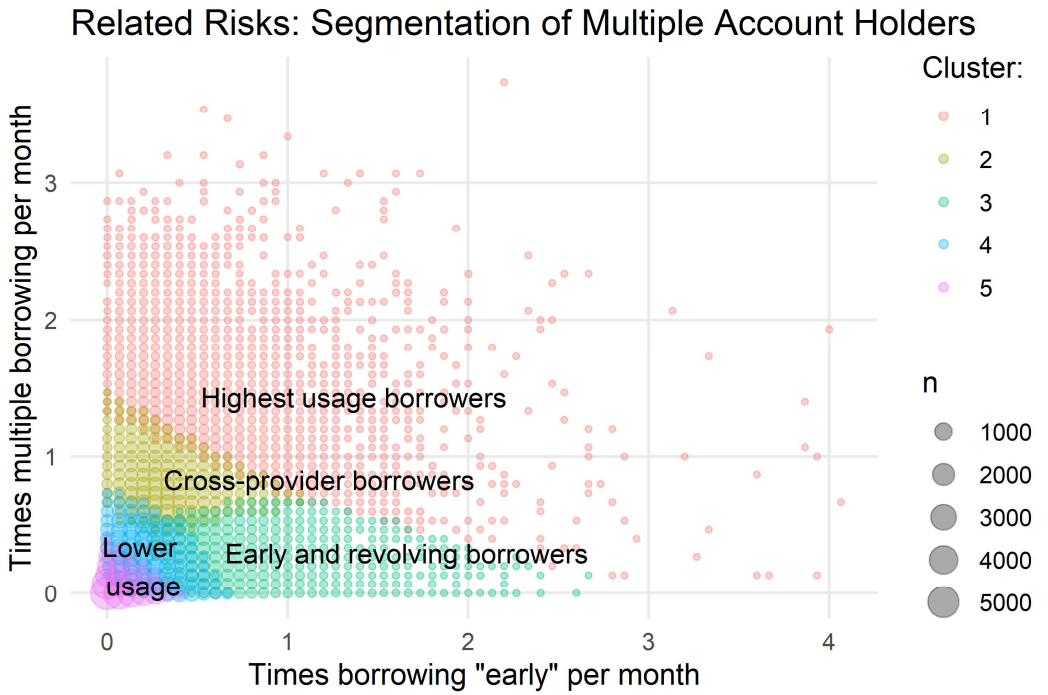
Digital Credit Market Inquiry:
Average Loan Size by Age and Gender





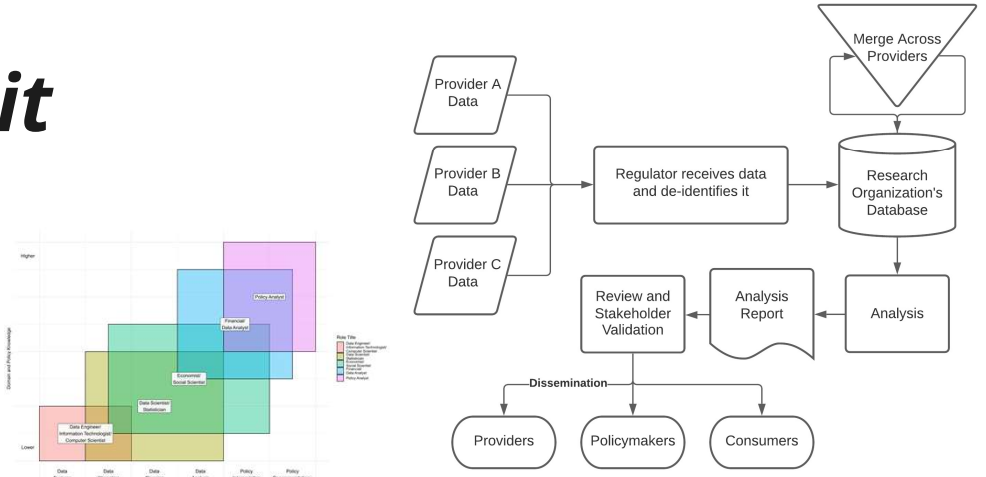
Digital Credit Market Inquiry:
Outcome Segmentation

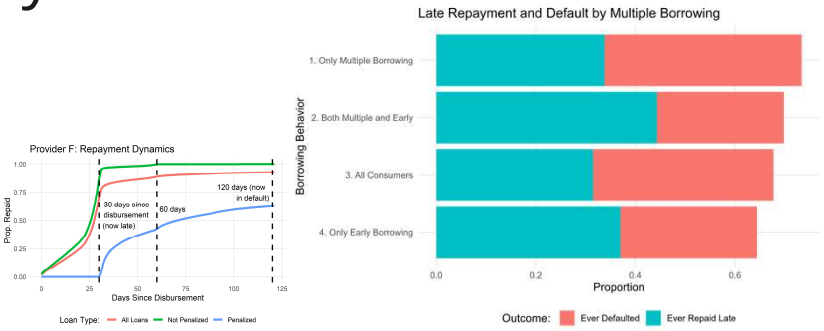
- Used borrowing outcomes: number of loans, number of times multiple borrowing across providers, returning early to the same provider, average loan size, etc.
- K-means clustering gives an alternative segmentation approach



Other Elements of the Toolkit

1. Resources for more in-depth analysis of transaction data
2. Resources for data security and processing
3. Request and planning documents





	A	B	C	D	E	F	G	H	I	J
1	gender	dob	id	loan_id	transaction_type	transaction_date	debit	credit	fees	msisdn_prefix
2			efa908ba3f2834e7157ead16f9891fd814a7cb87592c30d7efa409fe24cc59ff	4a4042cbf3c7	disbursement	4/1/2018	974.78		236.27	915
3	Female	1949	17d3c81c925667a61d03ffe36bbb780cf2fc07f17ab2a38cd049898f9f3c75d4	e6068a08031	repayment	4/1/2018		1681.87	333.99	382
4	Female		e8b42b808dfa424eedc789deb510eed042d6a2cf13b4309f206df5c0ab3d1a0e	5f2e7678278	repayment	4/1/2018		1831.92	588.60	699
5	Female		86f977c7141ec570969beb9a4e012abbc02a68509b22904ee48a7a1ecf1034c3	66e9bfdd530	disbursement	4/1/2018	1196.18		452.56	634
6	Female		d7023372525bb770e9f62a76582f366cba563cb3f9bb76c2169ce2873ddc0b7d	b3f6bad9a6b	disbursement	4/1/2018	1295.60		538.65	205
7	Female	1970	dd52eaf80ecca98acbe5a8aea075dc8d4fd245f8304cdeec5b7f279887d33067	cf45a0a2290e	disbursement	4/1/2018	1081.09		408.61	794
8	Female	1962	affb3e5b2ce3c7b4b0809c922f852bb4d60bfc51e5842733d5af94077e00b461	178db1ab31cd	disbursement	4/1/2018	900.98		343.13	443
9	Female	1964	c96b520fdbe7a19d5ac987cf38ea0205e7735bf02e5fd933ab36486038684ce8	ad5a038050e	repayment	4/1/2018		1549.33	310.11	974
10	Female	1948	cca01ab4c551c817bb586c83cff5b13414d8fe3d44e28d745f9f89b495912222	2607b1f7eca0	disbursement	4/1/2018	1221.80		476.36	714
11	Male		45b5d766dc3c621fab0f8bdd28a5a9670376893299ec31824e98697cd1952397	119ca16c12a	disbursement	4/1/2018	1155.18		282.57	590
12	Male	1992	27c23438d6a6f8e4bc2b55cd02acf3b9758b128c4a49b81bd98113cde3c91063	6c8cf7bdd141	repayment	4/1/2018		1233.04	346.42	682
13		1945	18f2a5605c12fdcdfd5e689c3c42b0888ea8ba4c1cf11969026eb84a605b19a1	6827aa5ac39	disbursement	4/1/2018	1218.73		432.60	858

[DATE]
[PROVIDER CONTACT
PROVIDER NAME
PROVIDER ADDRESS]

[AGENCY] is undertaking an analysis of [COUNTRIES] digital lending market. Digital credit is an important service for millions of consumers, but also raise consumer protection risks which must be mitigated through industry and policy measures. [AGENCY] is developing new approaches to data analysis and reporting to help the industry better understand and develop consumer protection solutions for this growing sector.

This analysis is being undertaken in collaboration with [PARNTER]. [description of PARTNER]. The analysis includes measuring the advancement of the market and recent trends in its evolution. To this end we are requesting the provision of transaction-level data on borrowing and

When to consult the toolkit:

1. When determining if administrative transaction data is the right tool for your work
2. When planning to obtain and use transaction data for market monitoring

IPA's Consumer Protection Research Initiative

Innovations for Poverty Action (IPA) is a research and policy nonprofit that creates and shares evidence, while equipping decision-makers to use evidence to reduce poverty.

Two research methods:

- Data collection, analysis and market monitoring
- Impact evaluation testing of new consumer protection solutions

Four key risks:

- Fraud in digital channels
- Consumer redress and complaints handling
- Product information and consumer choice
- Over-indebtedness

Bangladesh

Kenya

Nigeria

Uganda

Is administrative data the right tool for me?

1. Does my organization have the staffing and technical capacity to support obtaining and analyzing the data?
   - Data validation, cleaning, wrangling, analysis, computing, etc. - talk to your technical staff
2. Can I measure the relevant outcome with administrative data?
   - Transaction data is useful for risks like high prices, defaults, debt, multiple borrowing
   - The evolution of these outcomes in addition to segmentation
   - Not the tool for every risk (e.g., explicit misconduct)