

Complaints Data as a Tool for Consumer Protection: Lessons from Uganda

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25 November 2020
IPA Consumer Protection Practitioner's Forum

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Outline

1. Potential of complaints data analysis for consumer protection
2. Digital Financial Services and the Uganda Communications Commission
3. Process and Methods
4. Emerging Insights: Market Scope, Segmentation, Challenges
5. Next Steps



Complaints data are a rich source of consumer protection insights

- Complaints data are **accessible** sources of consumer insights that can be leveraged by Mobile Network Operators (MNOs) and Regulators
- Complaints collected by **MNOs** offer critical **operational data** to understand consumer issues with products and customer care
- When consolidated and monitored by **regulators**, complaints offer market-level **observational data** serving several key use cases:
 1. Monitor real-time issues/events to detect hot spots
 2. Track the development of issues in the Digital Financial Services (DFS) ecosystem
 3. Test and evaluate policy interventions



Uganda, Digital Financial Services, and the UCC

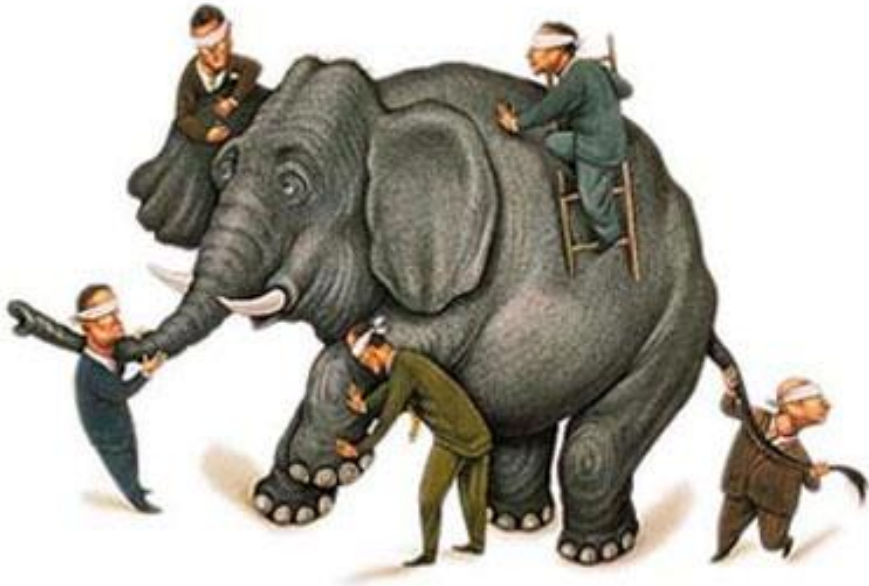
- Uganda Communications Commission (UCC) receives MNO complaints databases to **monitor the market and identify areas for improvement** in customer products and services
- Uganda has a concentrated **DFS market** – two firms account for 95% of mobile and mobile money subscriptions
- But difficult to **scope and diagnose** the DFS market: **Who** makes complaints? **What** do they complain about? **When** and **how** do they complain?
- Diagnostic lays **groundwork** for (a) immediate actions (b) evidence-based policy experiments



How to use MNO consumer complaints data?

Data Triangulation Strategy

Parable of blind men and the elephant



- Consumer **complaints data** reveal part of the elephant
 - Analysis of anonymized complaints data sets submitted by MNOs to UCC
 - Variation in types of data MNOs share, as well as way MNOs organize these data
- Conducted a **random digit dial (RDD) phone survey** with 830 DFS subscribers to seek market-level view
 - Triangulated with admin (SIM and Mobile Money subscriptions) and Finscope data
- *Related IPA Study on alternative redress mechanism:* Consumer protection monitoring via social media content of Ugandan financial service providers, including MNOs, from July 2019 – June 2020 (<https://www.poverty-action.org/event/ipas-consumer-protection-research-initiative-holds-first-practitioner%E2%80%99s-forum-meeting>)



Complaints Data: January 2019 – August 2020

Provider	Months submitted (1/2019–8/2020)	Total # of Customer care logs	Average # of complaints per month	Complaint channels identified	# Complaint categories	
					2019	2020
MNO-1	20	688,976	34,449	4	26	143
MNO-2	16	2,279,691	142,481	36	18,576	71
MNO-3	17	734,124	43,184	9	34	25
MNO-4	3	4,107	1,369	5	20	Not received



Consumer Complaints Data - Analytic Approach

5 Methods, Multi-phase, Iterative process

Data Collection and Processing:

Collect 2019-20 MNO complaints data, pre-process and seek standardization

Structured - Exploratory Data Analysis (EDA):

First Contact Resolution (FCR) rates, Service Level Agreements (SLAs), top categories/subcategories, statistics by channels, categories, months and day of week.

Unstructured - Exploratory Data Analysis (EDA):

Most frequent words overall and by categories, subcategories, and channels.

Topic Modeling:

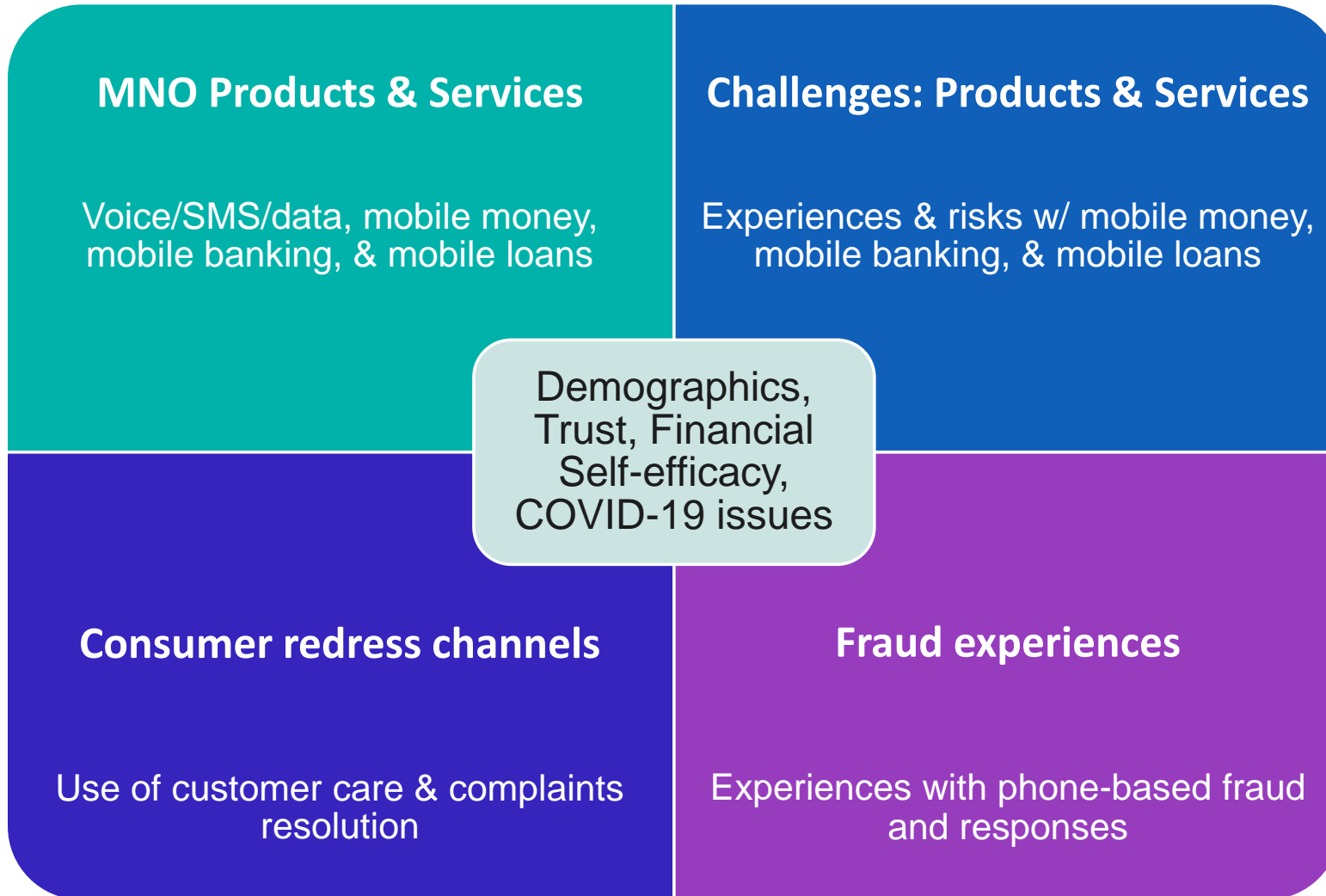
Reduce dozens and even thousands of categories to optimal groups

Predictive Modeling:

Leverage demographic data to understand complaints behavior, based on 2020 data



Market Survey Design and Implementation



- Conducted in August-September 2020, as COVID-19 restrictions eased
- Sought representative sample of active adult DFS users (18+, use in last 90 days, region and education quotas)
- Divided into two rounds within one week, n = 830 (R1), 771 (R2)



Regional Distribution of DFS Users

Geography

Northern

Census: 25.4%

Finscope (MM): 12.3%

Survey: 11.4%

Eastern

Census: 19.8%

Finscope (MM): 20.7%

Survey: 17.3%

Western

Census: 19.8%

Finscope (MM): 27.0%

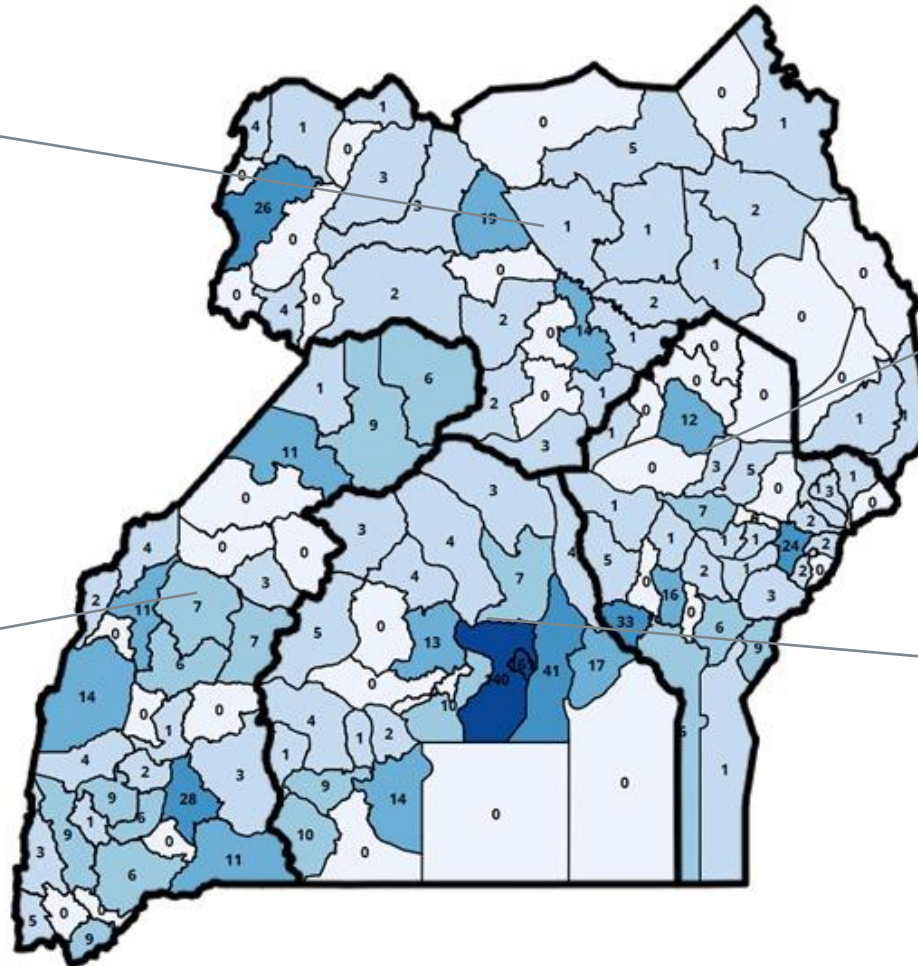
Survey: 20.8%

Central

Census: 30.2%

Finscope (MM): 40.0%

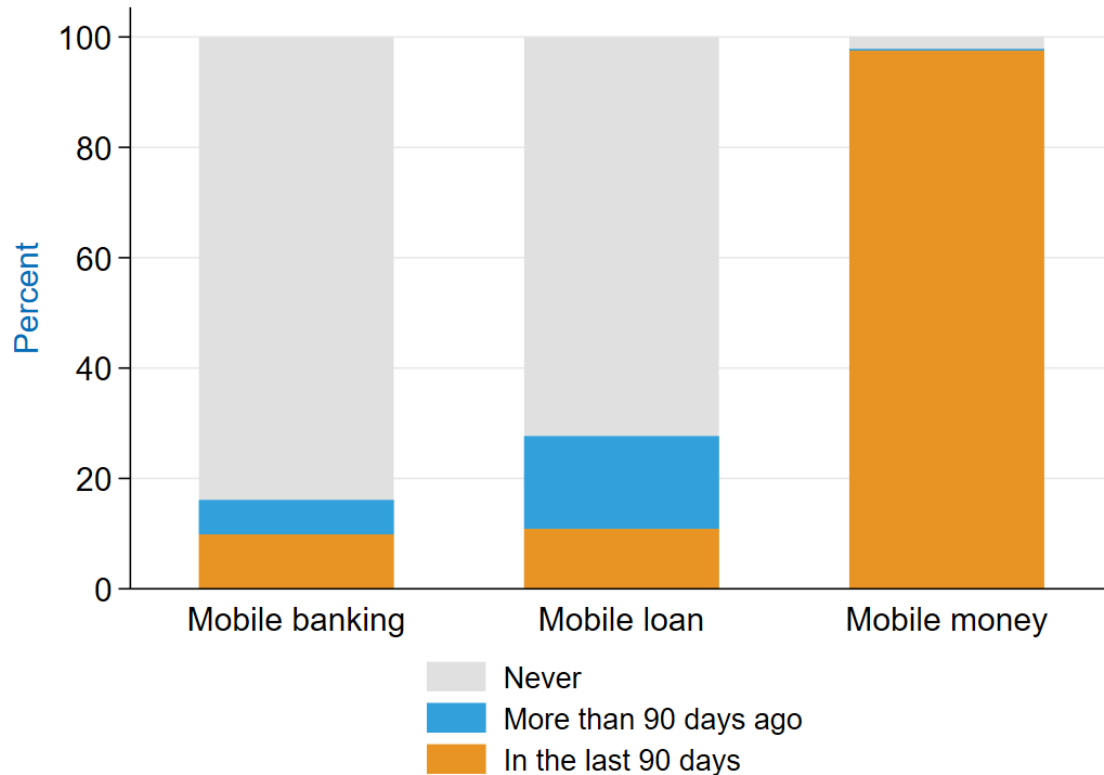
Survey: 50.5%



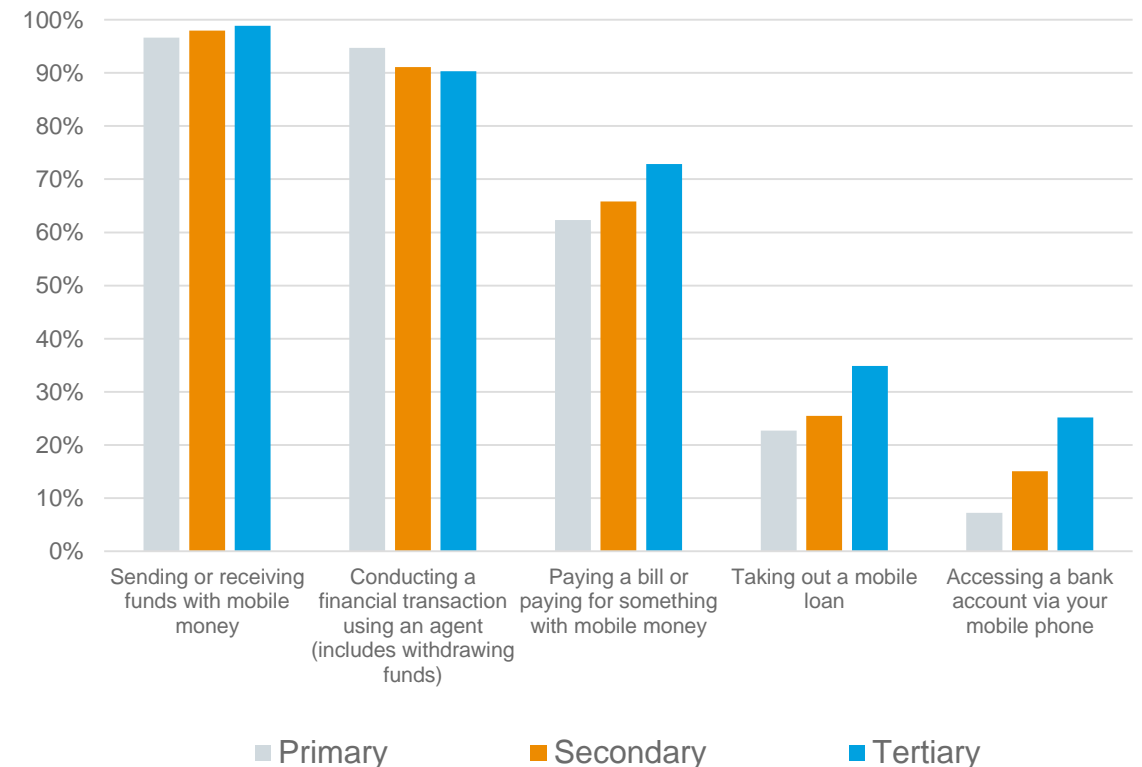
High levels of access, varied penetration of DFS products

Reported by Survey Respondents

DFS Use by Product Type

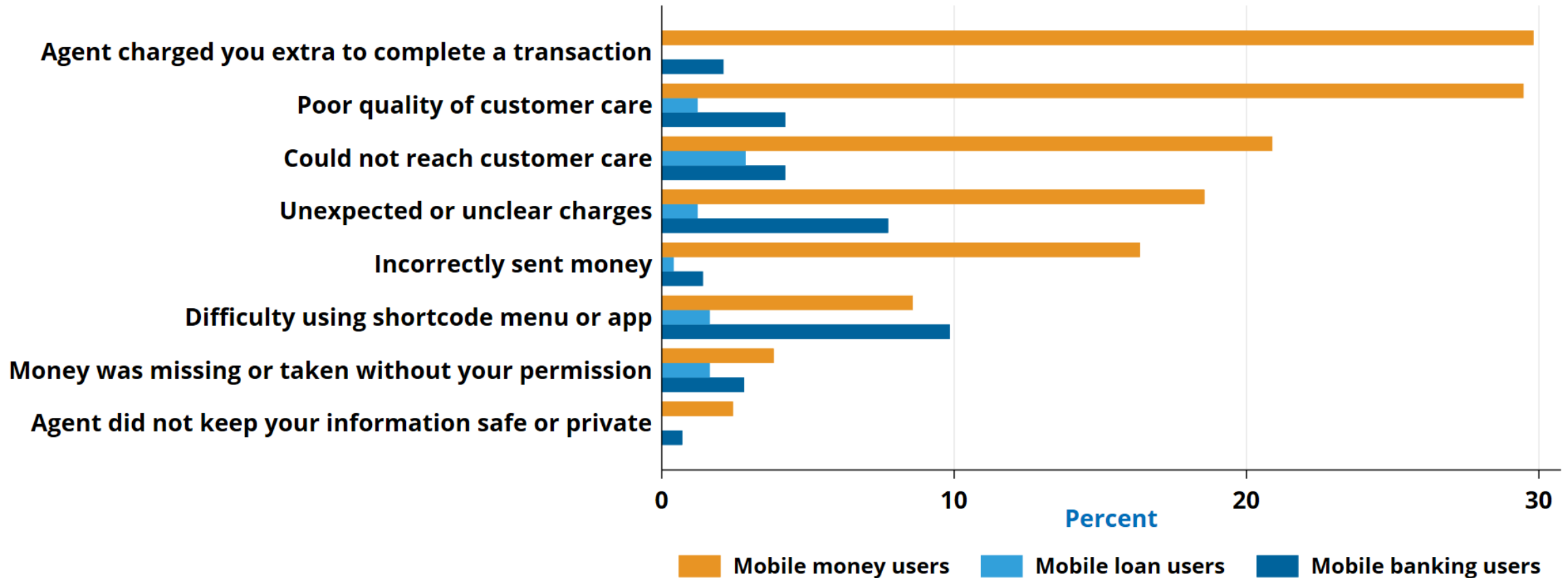


DFS Usage by Education



Fees and customer care are biggest challenges

DFS Challenges reported by Survey Respondents



No challenges reported 21%

21% of consumers report no challenges

Biggest Issue - Consumers fall out of the redress chain

89% previous 12 months / 96% previous 24 months

56% of issues resulted in monetary loss (mean 47,640 UGX / median 7,000 UGX)

Agent overcharging 16%

Unexpected/unclear fees 11%

Denied loan 9%

Poor customer care 13%

Incorrectly sent money 15%

Couldn't reach customer care 8%

Other challenge 5%

Missing money 3%

61% who reported challenges took no action

55% who took action failed to resolve problem

68% who failed to resolve problem did not modify their usage

Took no action

Other response

In-person

Failed to resolve problem

Did not affect usage

Contacted agent

Other channel

Resolved problem

Reduced usage

Contacted provider

Phone

Other outcome

Stopped using service

Contacted recipient

Switched agents

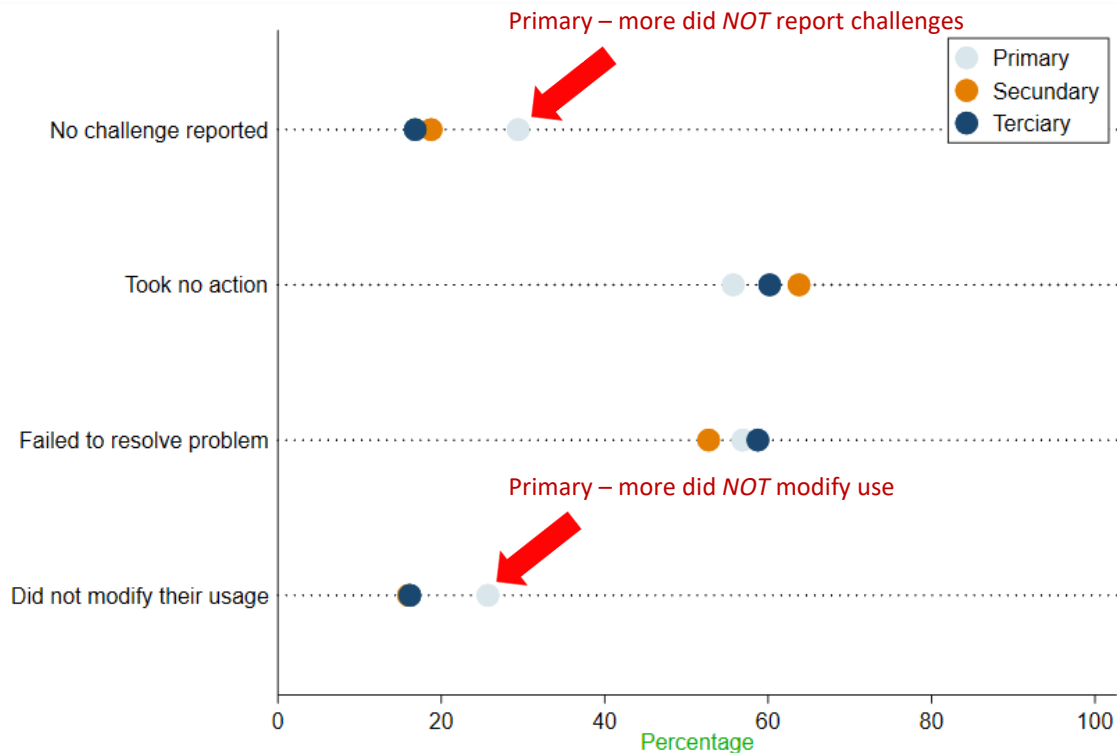
Changed providers

Other effect

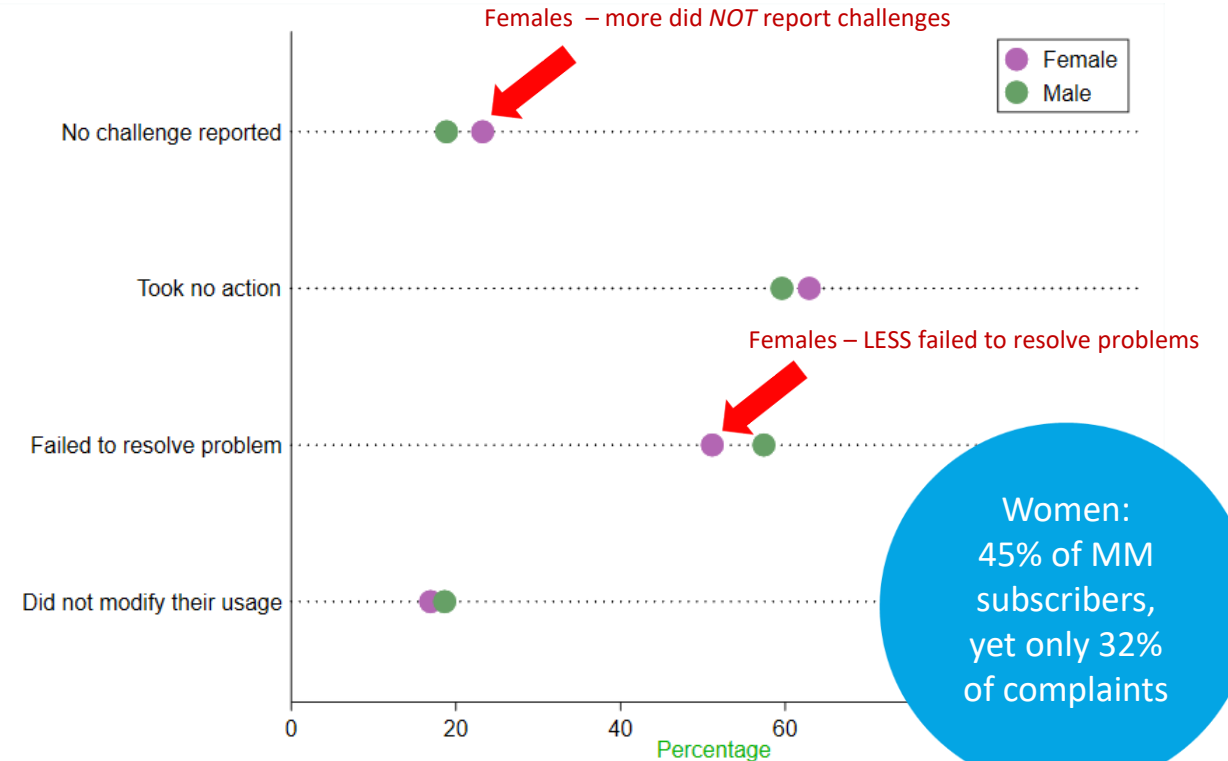
Primary educated and women *appear* to have less redress issues

Differences in usage-based risk or less aware?

Biggest challenges (education)



Biggest challenges (gender)



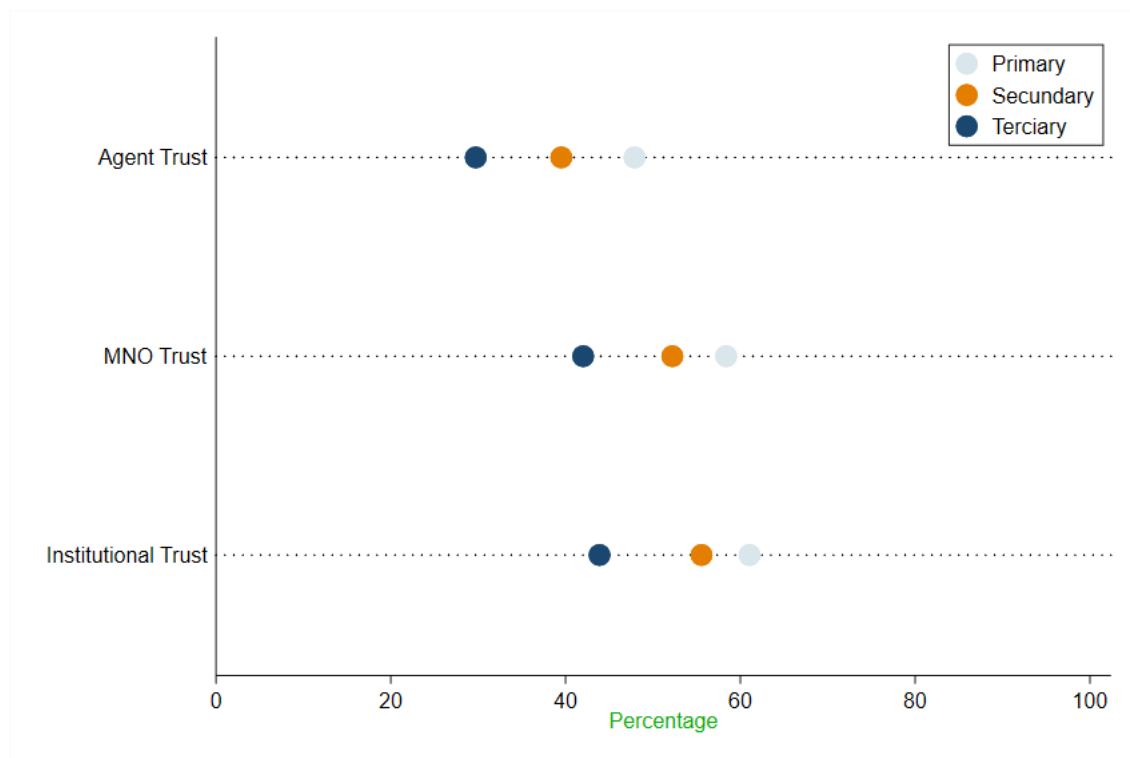
Women:
45% of MM
subscribers,
yet only 32%
of complaints



Less education, more trust - while women trust less agents

Differences in usage-based risk or less aware?

DFS Trust (education) - % high trust



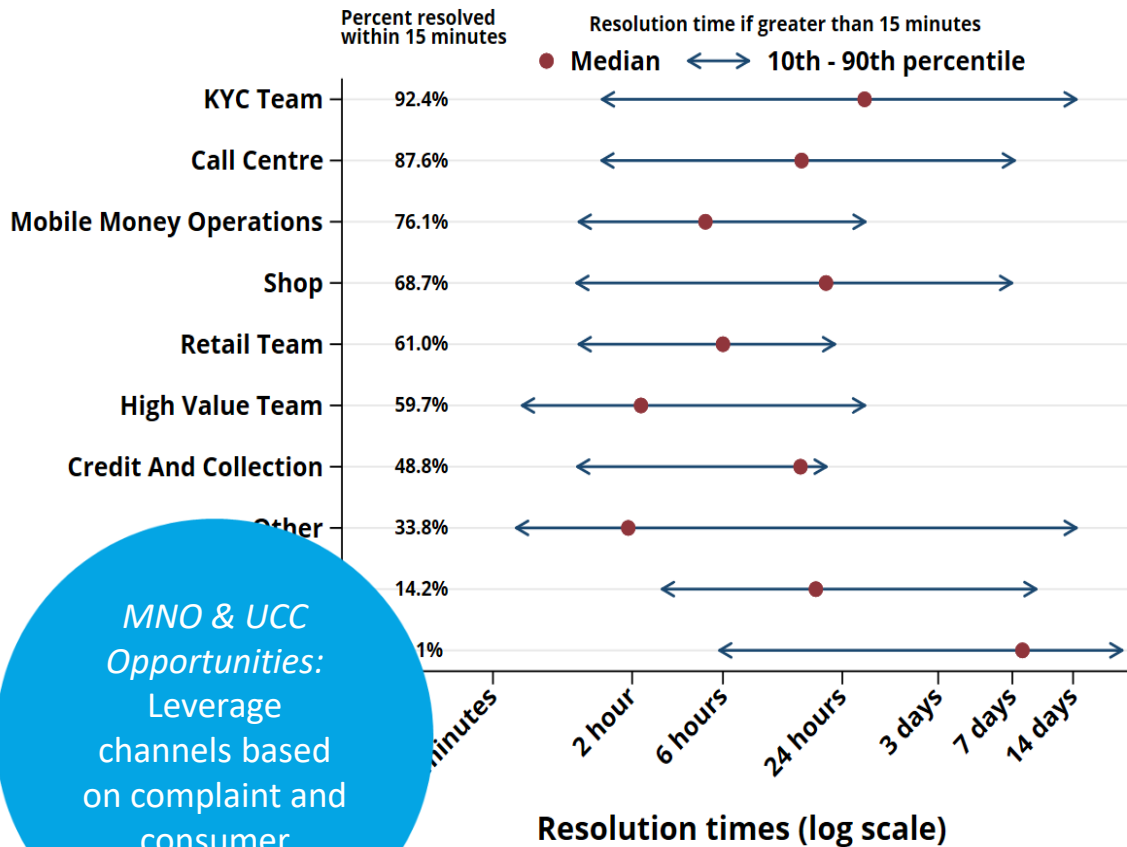
DFS Trust (sex) - % high trust



Variation in resolution times by complaint channel and MNO

Structured EDA of Complaints Data

Complaint Channels

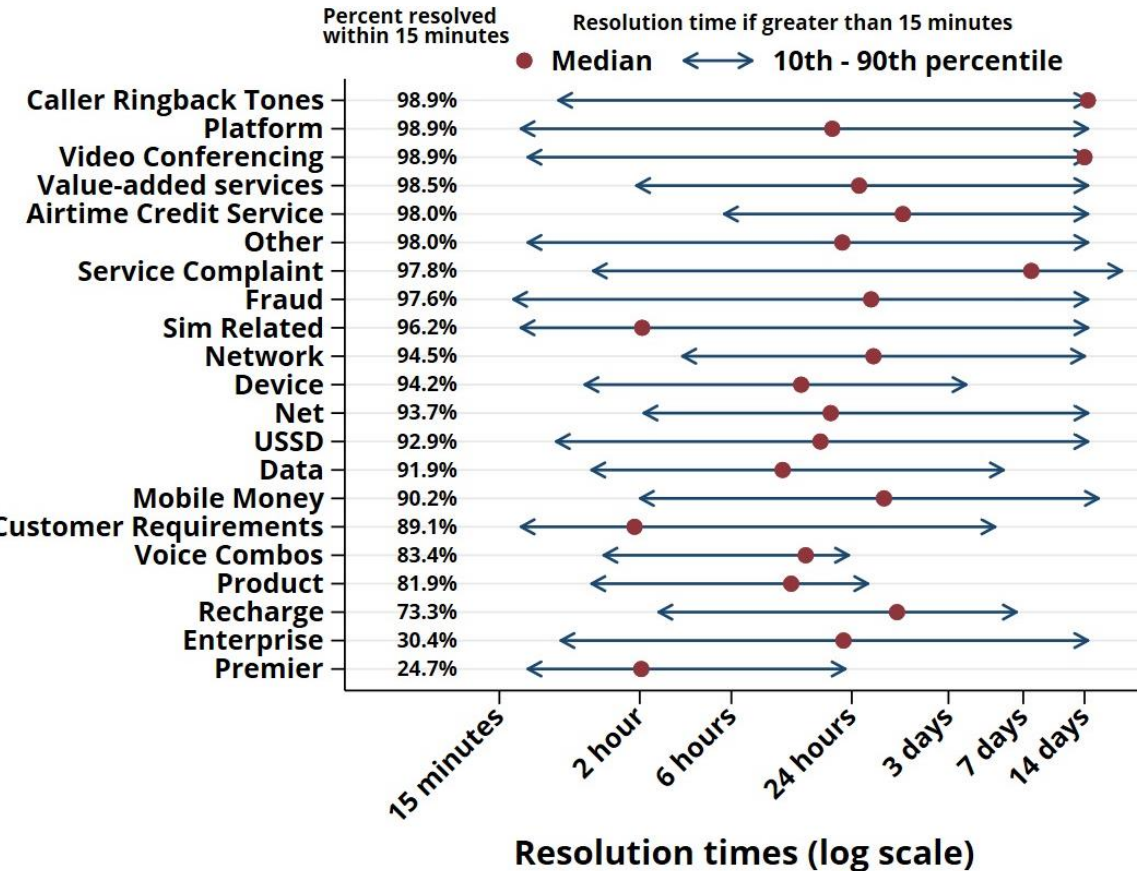


Know Your Customer

Requirements

MNO & UCC Opportunities:
Leverage channels based on complaint and consumer segments

Complaint Categories

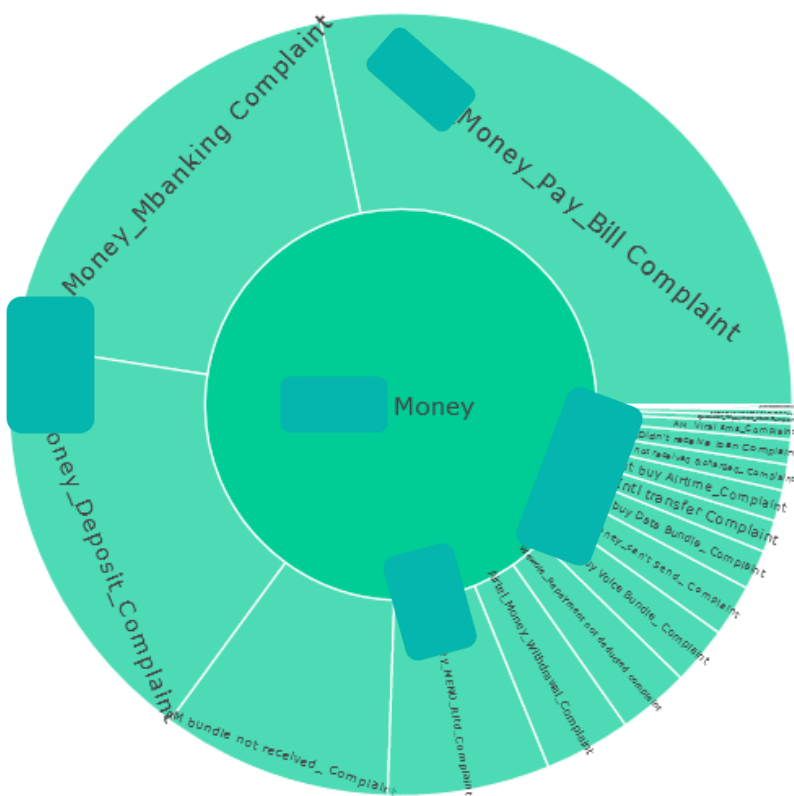


Mobile Money Example: Variation in Key Issues across MNOs

Most common customer issues in 2019

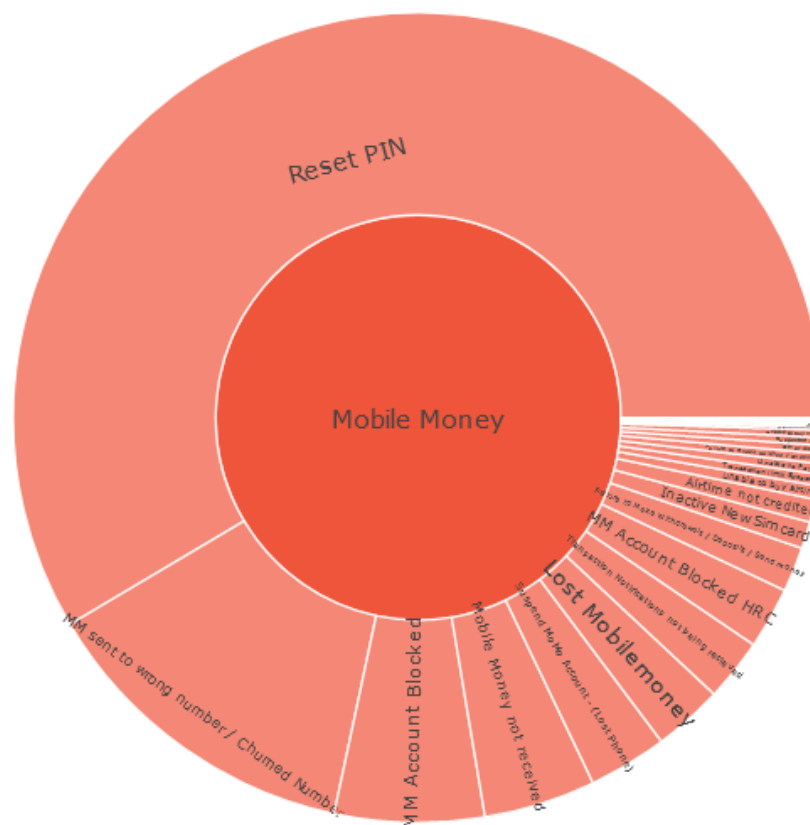
	MNO 1	MNO 2
1.	Mobile money	Mobile money
2.	Data	Prepaid queries/problems
3.	Network issues	Lost airtime

MNO-2:



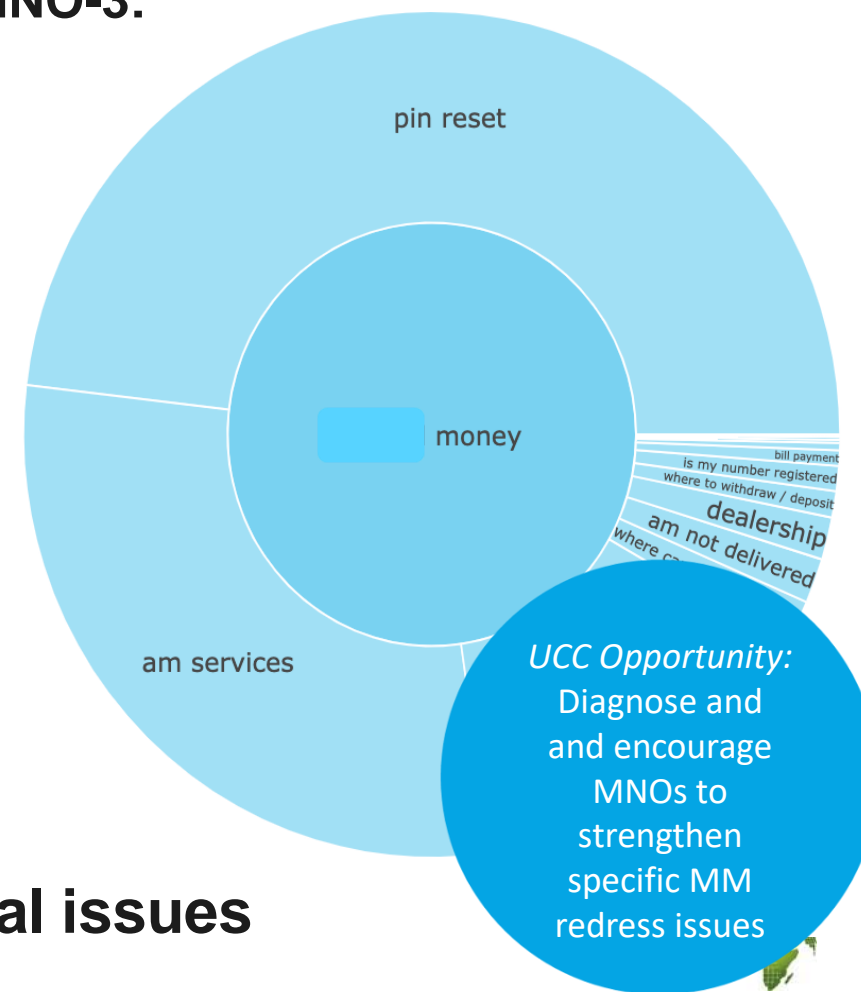
Product-related issues

MNO-1:



Technical issues

MNO-3:

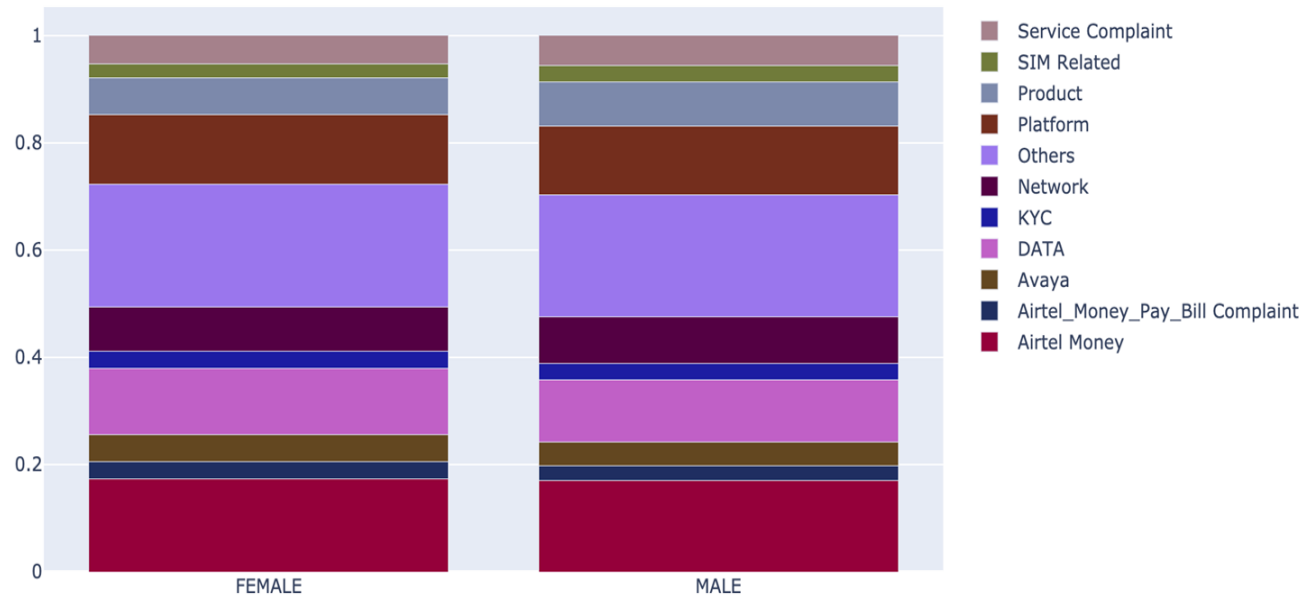


UCC Opportunity:
Diagnose and encourage MNOs to strengthen specific MM redress issues

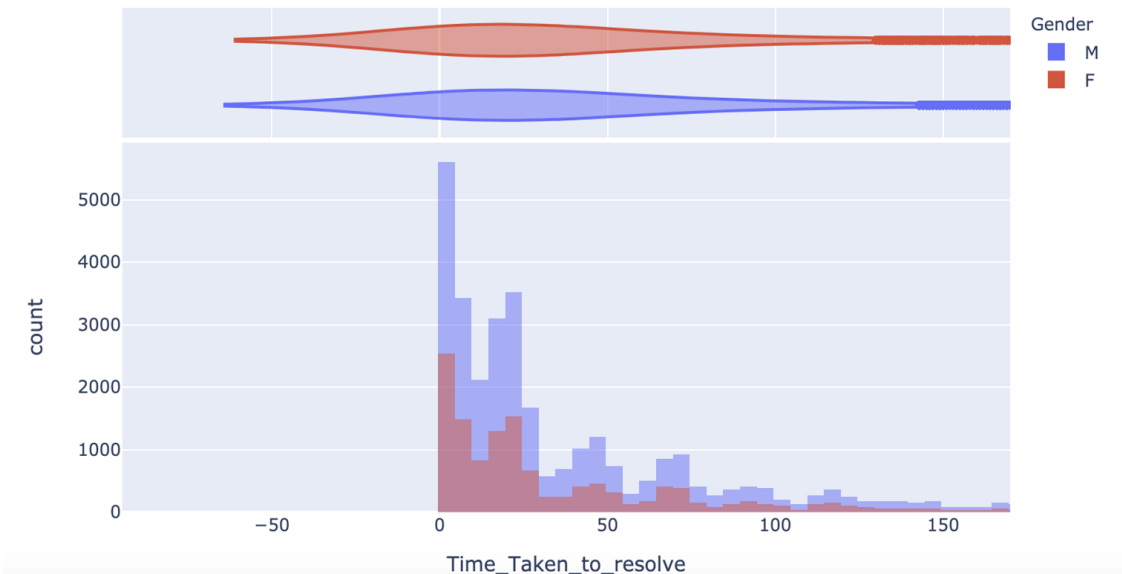
Women complain about same things but complain less

Examples from Structured EDA of Complaints Data

Complaints by category and gender



Time taken to resolve complaints (hours)



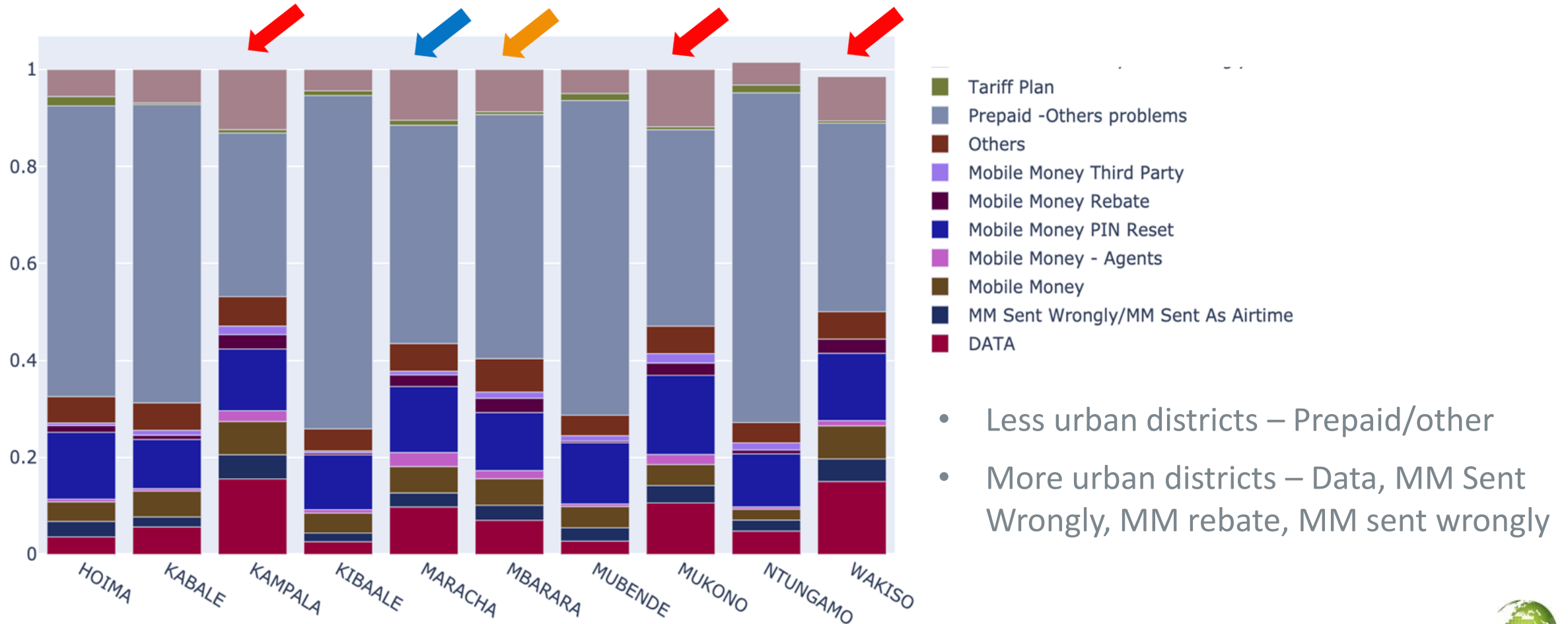
- No *visible* differences in main categories of complaints
- Women are 45% of subscribers yet account for only 32% of complaints
- Women have **faster first contact resolution times (FCR)** across MNOs – Why?



Differences in distribution of complaint types across geographies

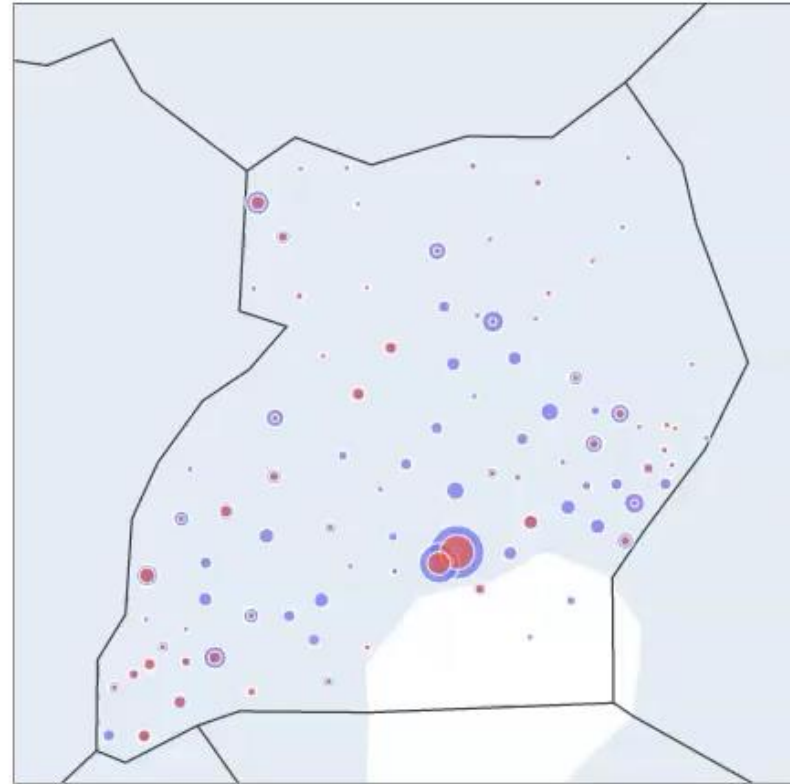
Example from Structured EDA of Complaints Data

Complaints by category and location



Complaints across Time and Geography

Video Demonstration



Gender

M

F

*UCC and MNO
Opportunity:*
Develop an MNO or
market-wide hot-
spot and alert
system, which
automates responses

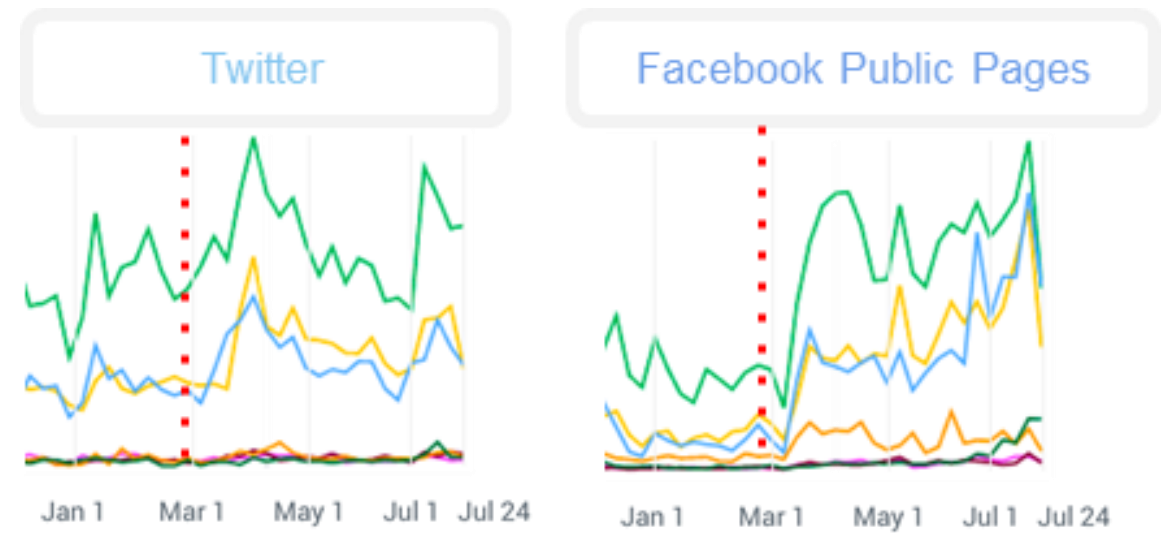
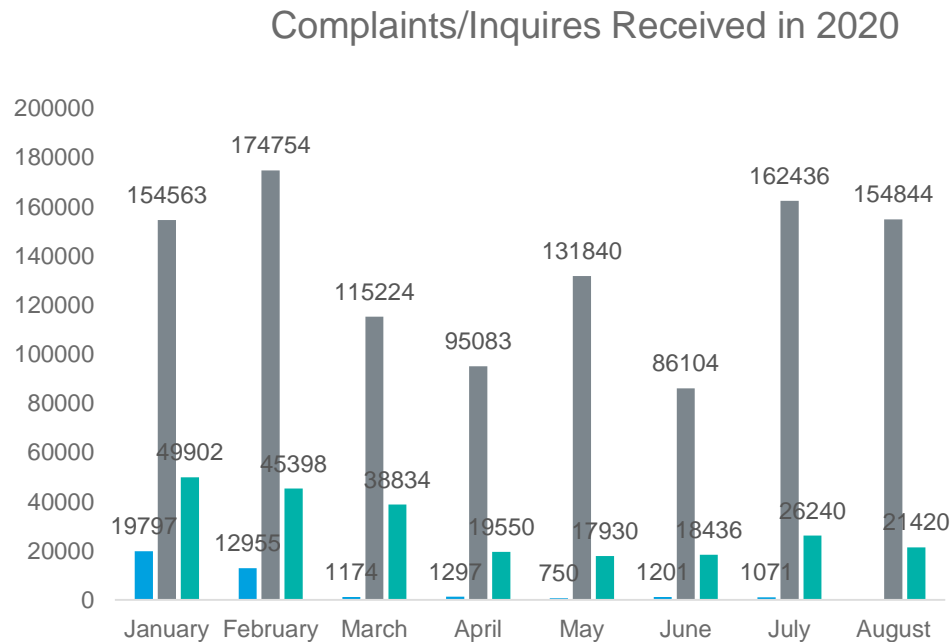
Date=2020-01-01



Changes in complaints could be capacity and channel issue

Structured EDA of Complaints Data

Fewer complaints March-June 2020 (coinciding with most restrictive COVID-19 lockdown period)



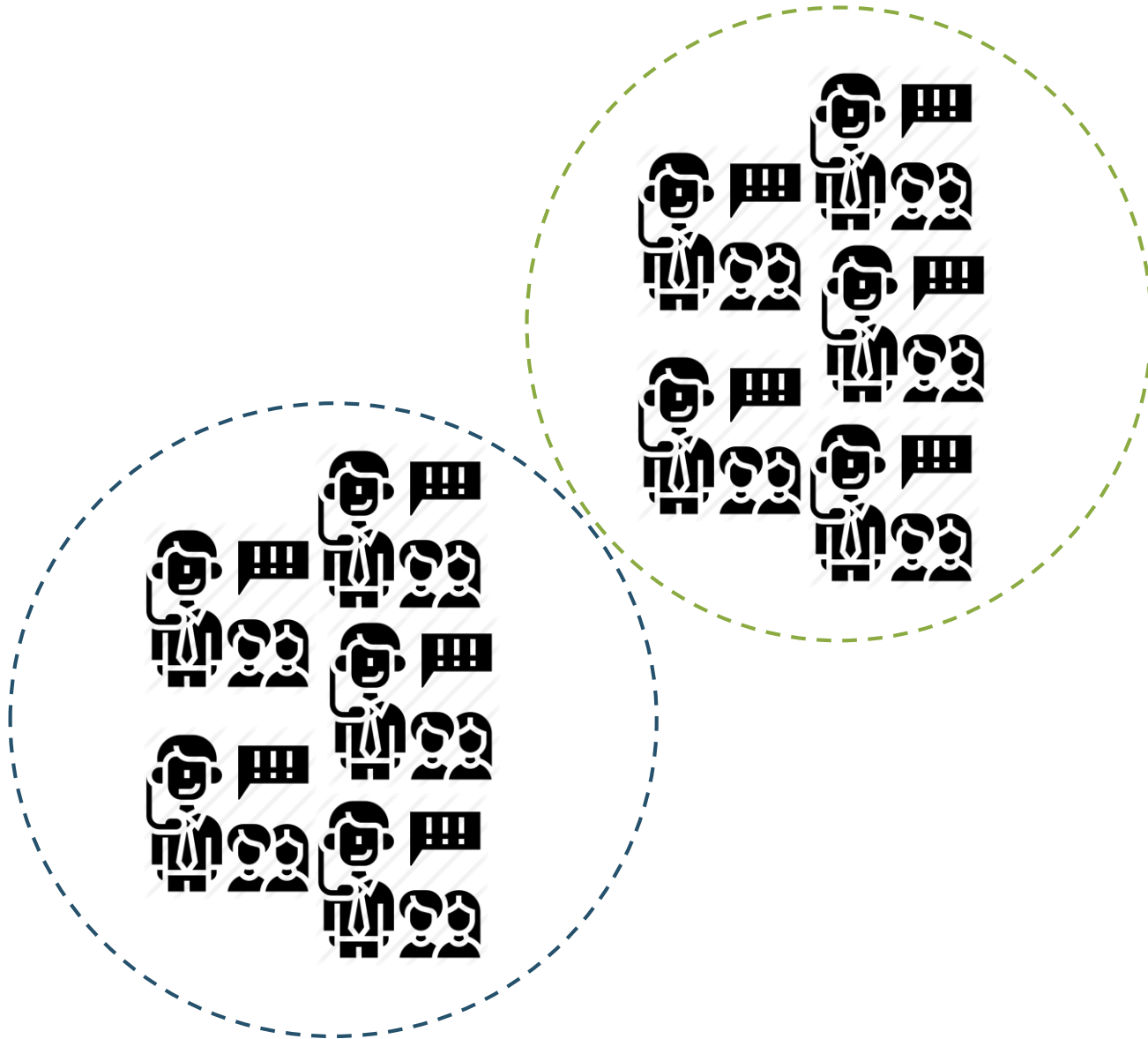
<https://www.poverty-action.org/event/ipas-consumer-protection-research-initiative-holds-first-practitioner%E2%80%99s-forum-meeting>

However, the reduced volumes may be misleading ...

- Social media data shows rise in complaints to MNOs—especially for customer care matters
- Likely drop off is due to reduced call center staff not fewer consumer issues



Topic Modeling Can Help Improve Comparative Analysis



- Objective is to group similar complaints under the same topic, given their description
- Train topic modeling algorithm to find the topics given complaints description.
- Find the best number of topics
- Understand what the topics represent
- Basis for standardization for MNOs and UCC

MNOs	Category Reduction
MNO-1	35 -> 7
MNO-2	3,797 -> 13
MNO-3	35 -> 7
MNO-4	20 - 4



Topic Modeling: 3 Examples from an MNO

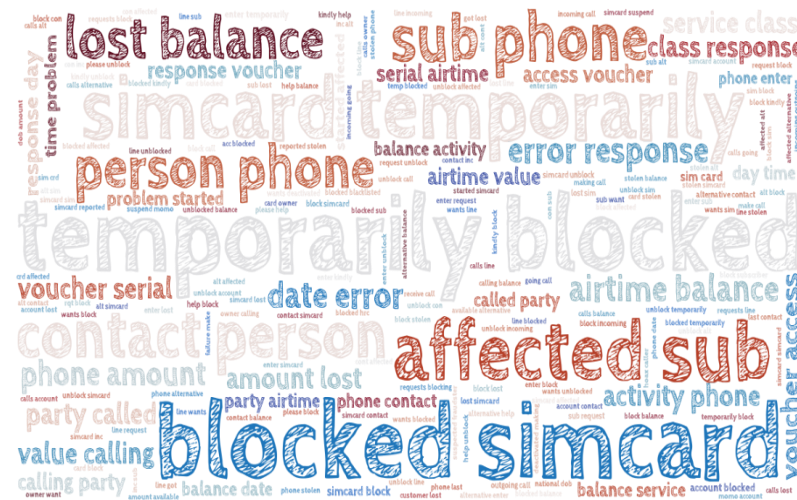
Errors in sending MM



	index	CATEGORIZATION_TIER_1
0	customerservicequeries	0.473322
1		0.330612
2		0.105554
		0.055734
		0.031017

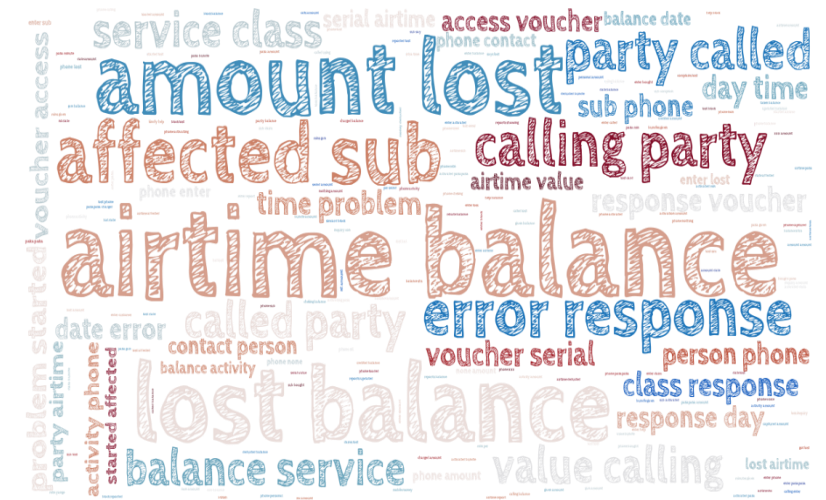
MNO
Opportunity:
Create most
appropriate
categories for
CRM, voice
transcription opp

Blocked sim card



	index	CATEGORIZATION_TIER_1
0	customerservicequeries	0.372885
1	prepaidqueries	0.328923
2	mobilemoney	0.182030
3	voicecalls/sms	0.093154
4	internet	0.017241

Lost airtime balance



	index	CATEGORIZATION_TIER_1
0	customerservicequeries	0.750462
1	mobilemoney	0.43971
2	valueadded	0.093
3	airtime/e	0.09
4		0.01

UCC
Opportunity:
Standardize
complaint
categories for
monitoring



What if we wanted to predict a fraud complaint?

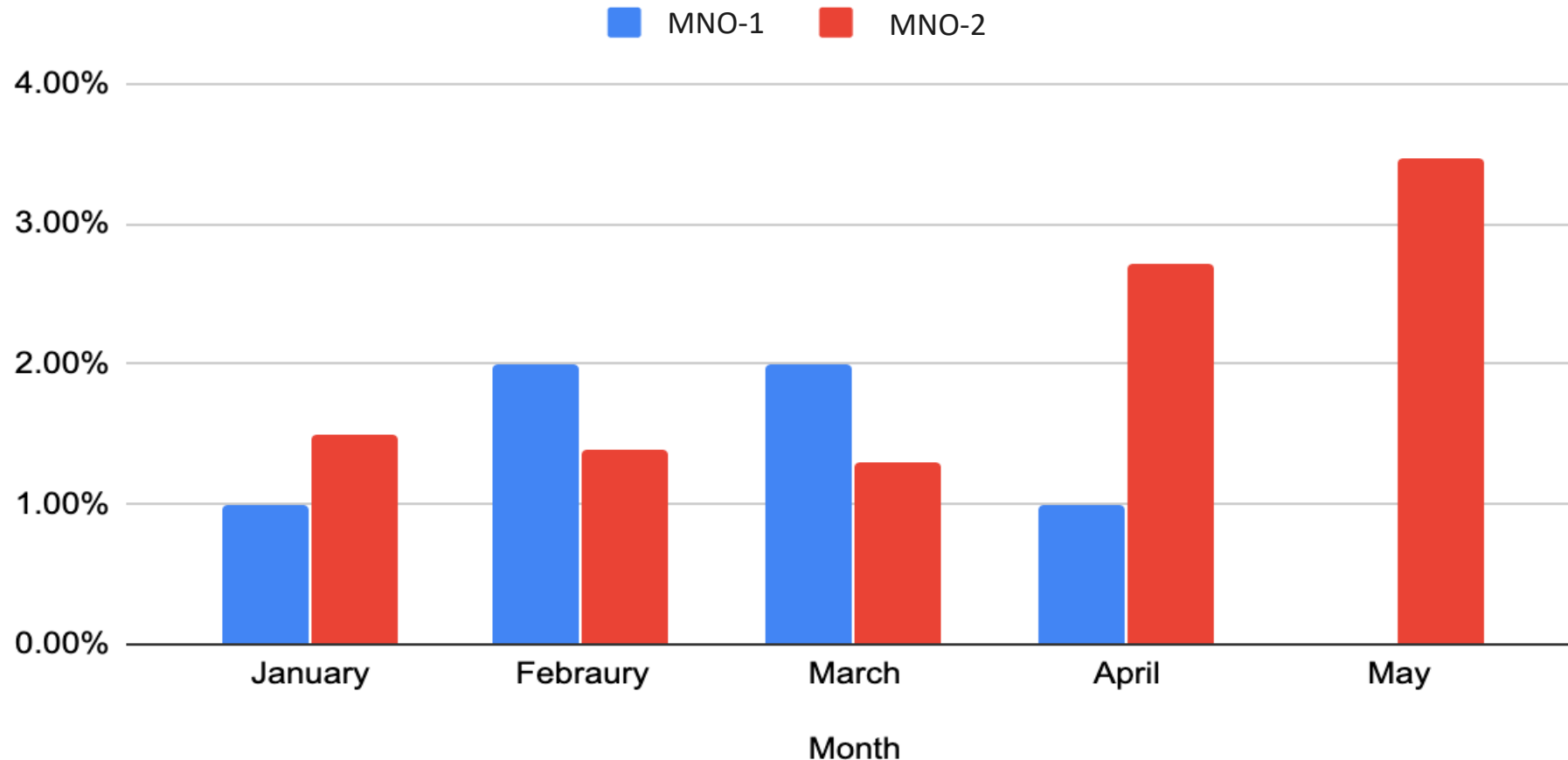
Predictive Model Example

- *Survey:* Nearly 90% had experienced a scam/fraud attempt in last 12 months
- *Survey:* Consumers susceptible during the pandemic, 75% report making less income during the pandemic, 30% reported loan repayment issues
- *Survey:* 46% reported receiving a COVID-19 related fraud/scam call
- *Survey:* 49% of scammers claimed to be the MNO, 24% didn't id themselves
- *Complaints data:* Better prediction would enable:
 - Preventive efforts to mitigate or eliminate the fraud threat
 - Customized response to the complaint



Complaints data tell different stories about fraud-related issues during COVID-19

% of total complaints as fraud-related complaints in 2020



Is this a difference in providers - or a difference in reporting and classification?

*Remember:
Evidence complaints went up in social media*



Predictive Modeling Machine-learning Algorithm with a Cross-validation Approach



Different variables predicted fraud-related issues for different MNOs

MNO-1 Fraud

96% precision

Most important variables to predict a fraud call, ranked:

1. *Hour*: Complaints **LATER in the day**, more likely to be fraud*
2. *Month*: Complaints in **EARLIER months** more likely fraud*
3. *Time-as-client*: **LESS time as MNO client**, more likely fraud
4. *Day*: Days **earlier in the month**, more likely fraud
5. *Gender*: **Women more likely** to file a fraud-related complaint
6. *Location*: More likely fraud **from Kampala and Wakiso**

If **female** who is a **new MNO-1 client** from **Kampala** calls **late in day** in **early January** ...
probably calling about fraud

MNO-2 Fraud

84% precision

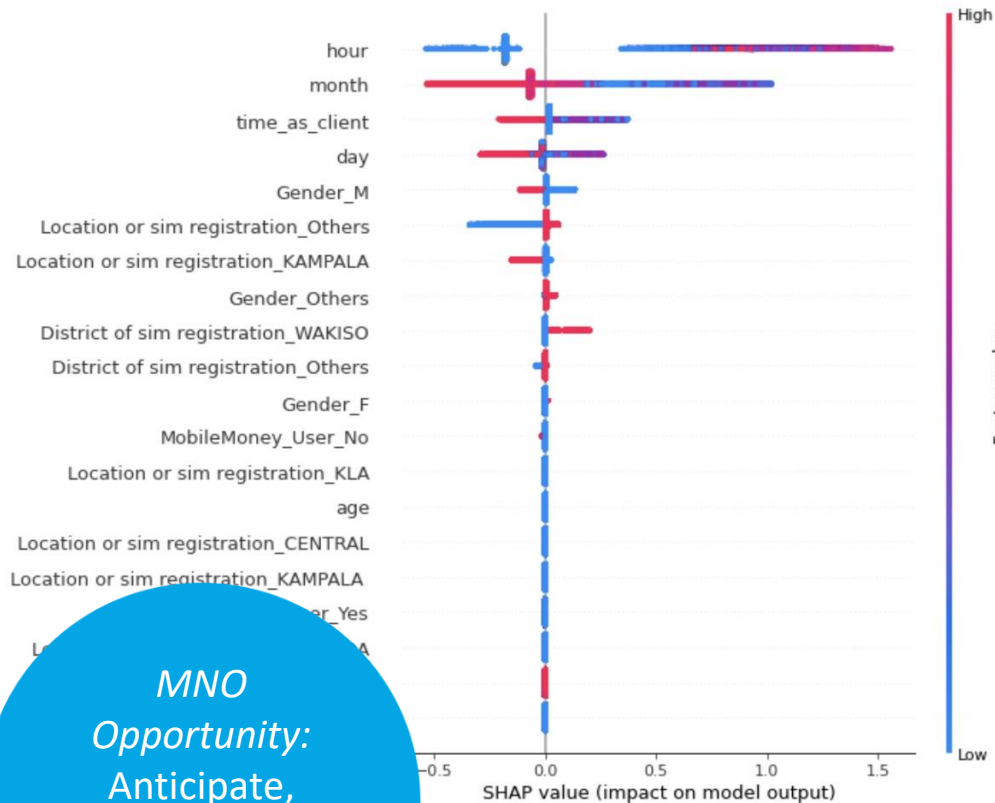
Most important variables to predict a fraud call are, ranked:

1. *Hour*: Calls made **EARLIER in the day**, more likely to be fraud*
2. *Age*: **Older people** more likely to final fraud complaint*
3. *Day*: Days **earlier in the month**, evidence at the end*
4. *Month*: **MIDDLE months in timeframe** more likely fraud*
5. *Time-as-client*: **MORE time as MNO client**, more likely
6. *Location*: More likely fraud **from Kampala**

If **older, established MNO-2 client** from **Kampala** calls **earlier in day** in **early April** ...
probably calling about fraud

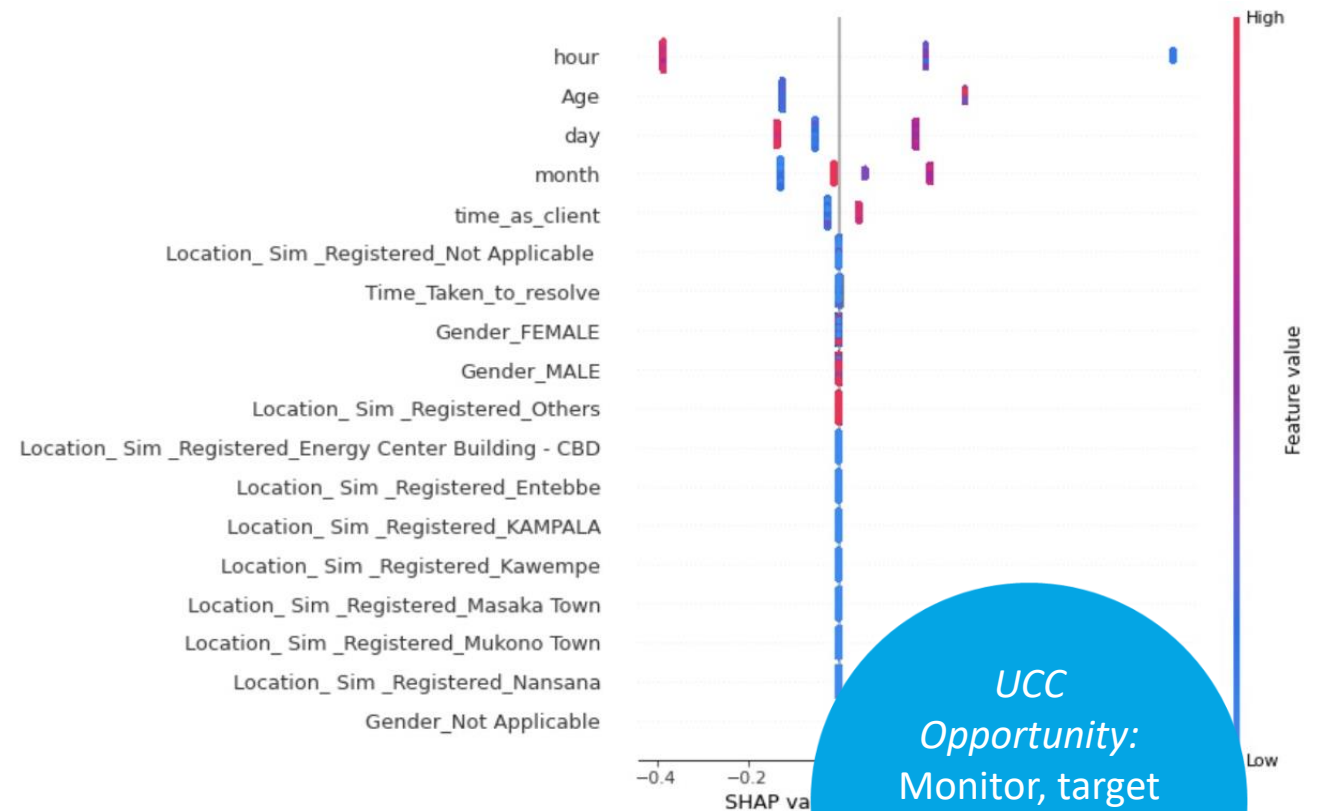


MNO-1 Fraud



MNO
Opportunity:
Anticipate,
customize,
prevent

MNO-2 Fraud



UCC
Opportunity:
Monitor, target
interventions,
prevention
efforts



Takeaways and Next Steps

- Complaints data are **accessible and rich source** of insights for MNOs and regulators
- Seek to **triangulate** the complaints data
- MNOs can use complaints to **(a) anticipate, (b) customize, and (c) prevent**
- Regulators can use complaints as a **market monitoring tool** and as basis for **evidence-based policy interventions**
- Next steps:
 - Develop a comprehensive and **standardized template** for use after January 2021
 - **Train** UCC staff on data analysis to generate monthly statistics
 - Consider **experimentation** to address consumer challenges



Thank you



Special thanks to William Blackmon, Kyla Longman, Rafe Mazer, Jackie Namubiru, Juandiego Morzán and our partners at the Uganda Communications Commission