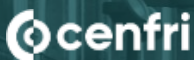




Advancing financial inclusion

Established by



# Is the financial sector meeting the needs of Mexicans? Implications for financial inclusion

February 2019



COMISIÓN NACIONAL  
BANCARIA Y DE VALORES

# FI in Mexico

Great strides, but is it delivering impact?



ENIF 2012–2018:



**68% (14.6 million more)** have at least one financial product




**47% (12.3 million more)** have an account



But cash continues to dominate payments

**Is FI delivering welfare impacts?**

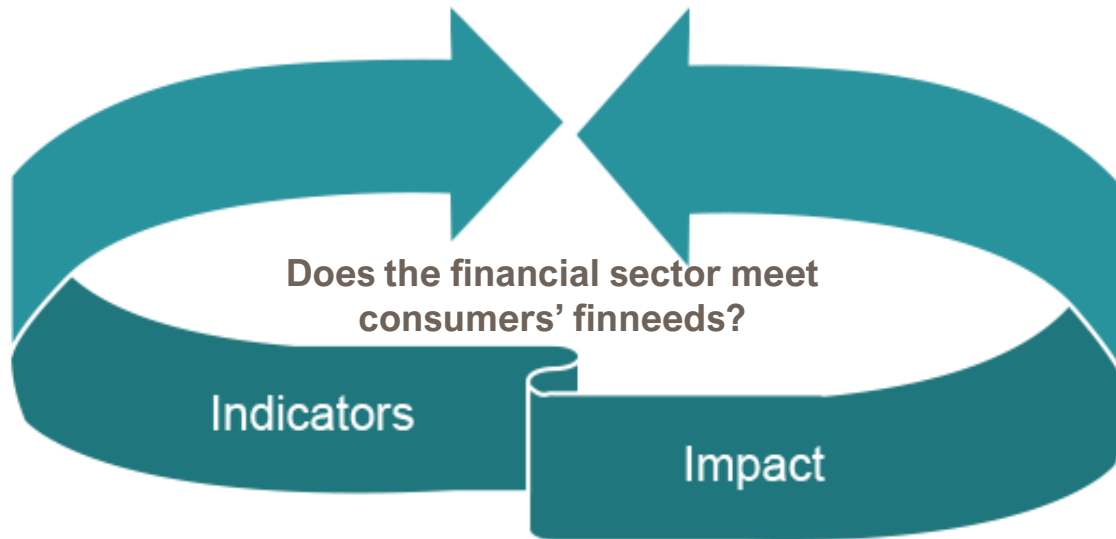
## This is part of a bigger FI question internationally



Success in achieving  
financial inclusion targets

Questions around the  
impact of financial inclusion

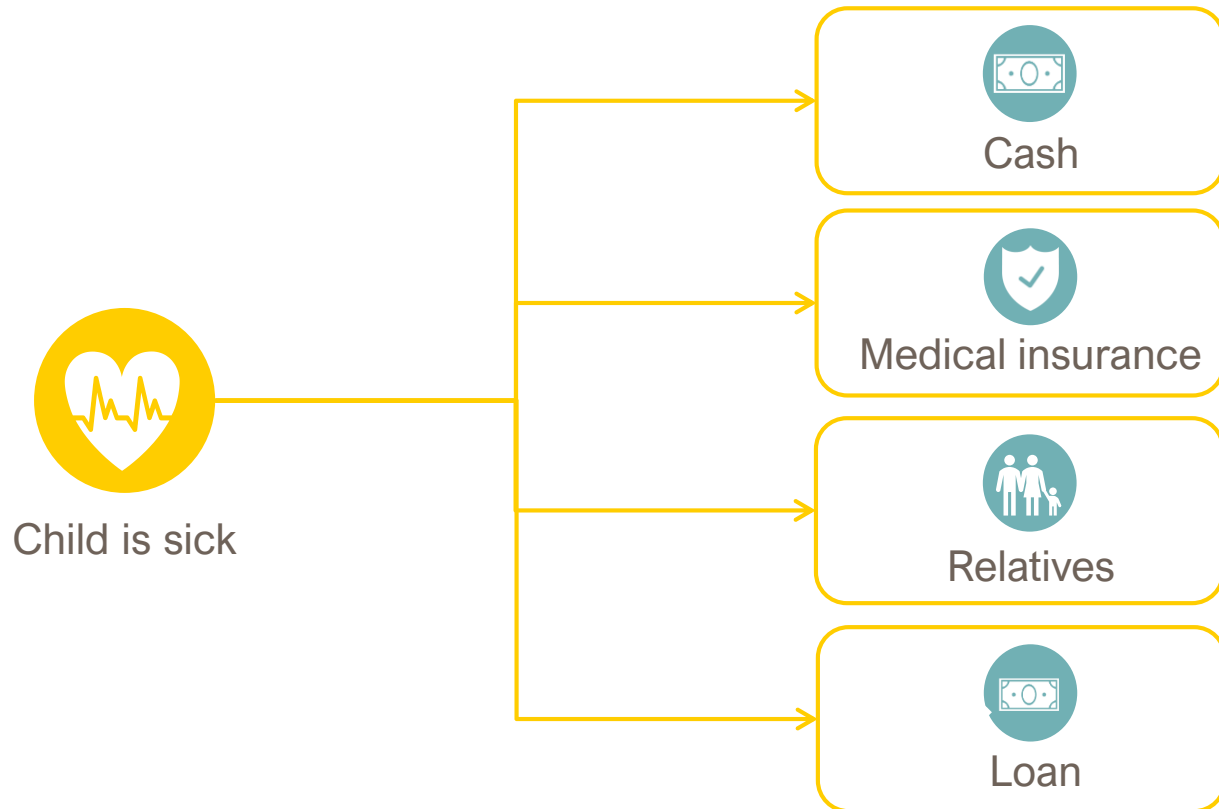
...that a consumer needs lens can help to inform



**i2i Finneeds framework:** A closer look at how people live their financial lives by considering what use cases they express, how they meet these use cases and how they *actually engage* with different financial services

# Financial needs framework

Everyone expresses financial **use cases**, pursued through **financial devices**

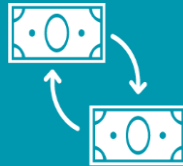


# Financial needs framework

Need: A collection of use cases that can be fulfilled by financial services

## Transfer of value

*Send money or digital value from one person to another*



## Meeting goals

*Achieve life objectives or obligations that require funding across income cycles*



## Liquidity

*The need to meet expenses in each income cycle*

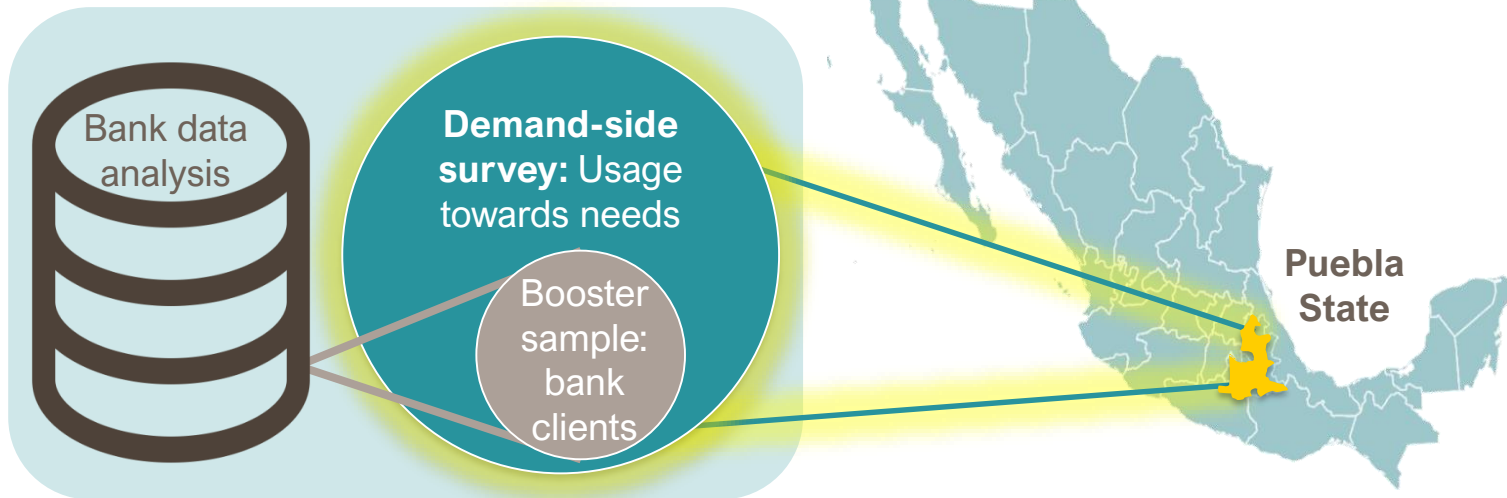


## Resilience

*The ability to deal with unexpected shocks that have a financial impact*



## About the Mexico study



<b>Sample</b>	1,154 adults representative of Puebla state Fieldwork completed in December 2017
<b>Booster sample</b>	400 individuals Fieldwork completed in July 2018

## Key findings

FI is not yet doing enough to build financial health and social equity



Unmet needs highlight large market opportunities...



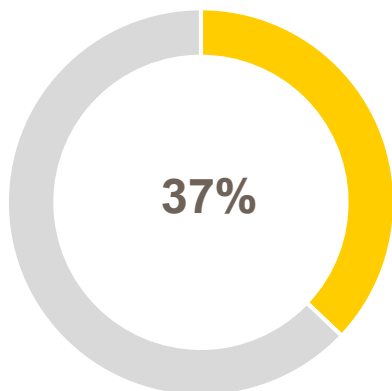
... and create distinct policy and market imperatives.



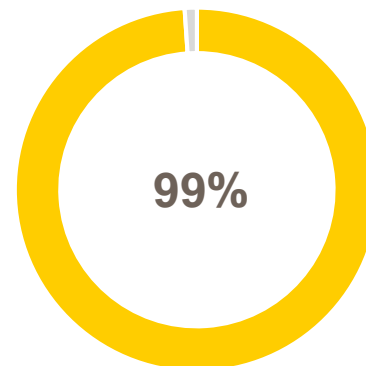
- 1. How do people meet their financial needs?**
2. A closer look at usage
3. Why do these findings matter?

# Which financial devices do people use?

## Formal financial devices



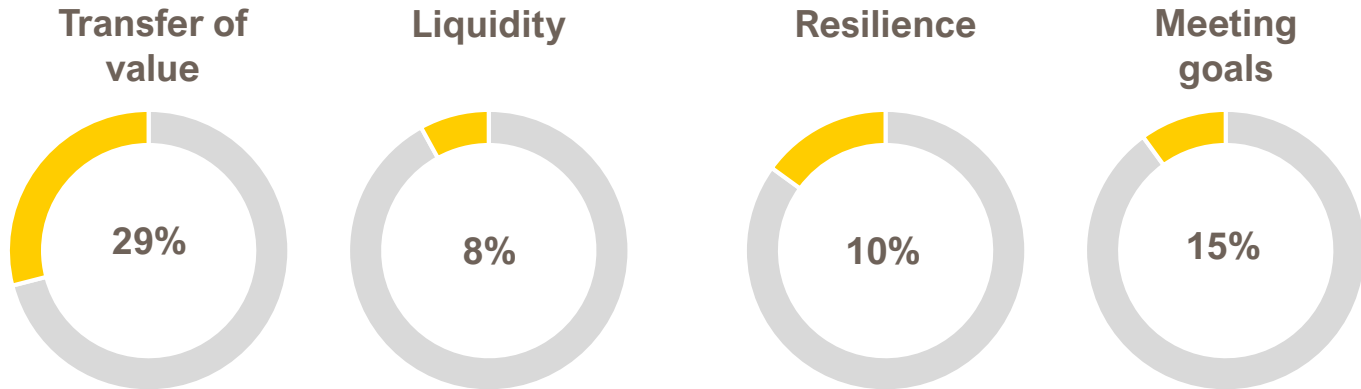
## Informal financial devices





Top three devices used	%
Money transfer from account	18%
Money in account	12%
Money transfer service	10%

Top three devices used	%
Cash	99%
Money set aside at home	41%
Assistance from friends and family	32%

# Formal financial sector not meeting needs



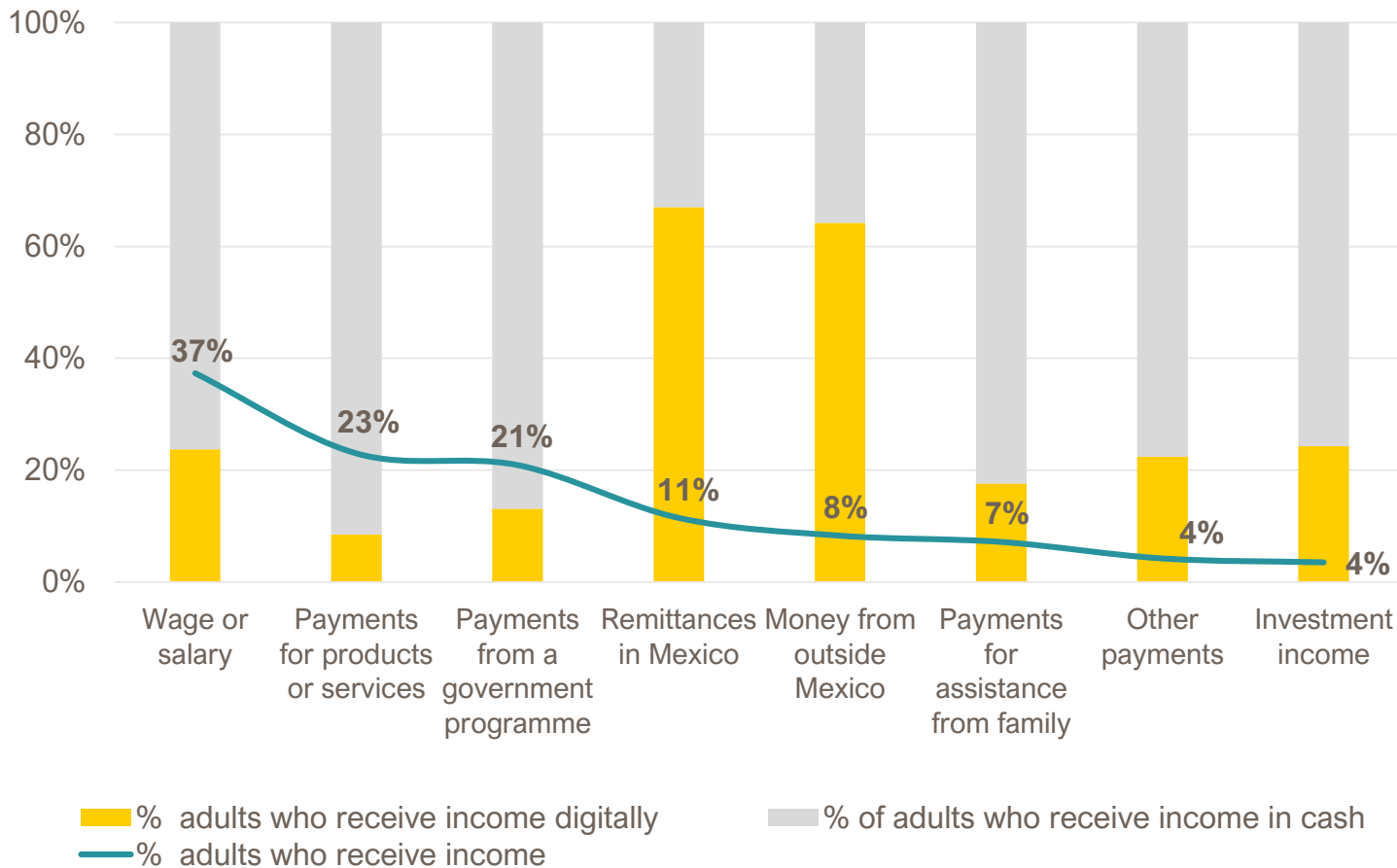
-  % of adults who use **at least one formal** fin service to meet their needs
-  % of adults who use **only informal** fin devices to meet their needs

# How do people receive and make payments?



# Income receipts:

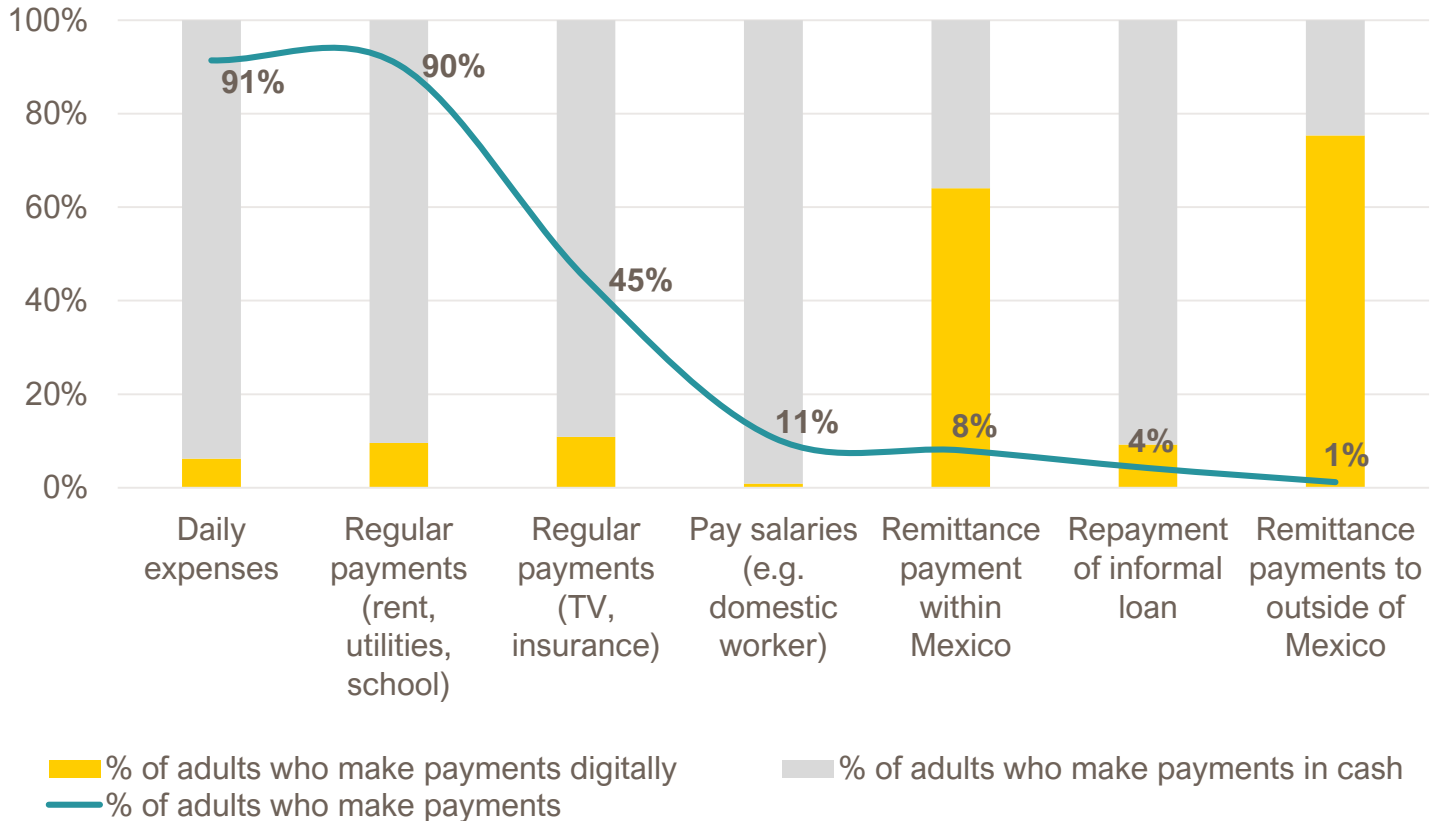
Some inroads being made in wages and remittances



Source: Puebla field survey

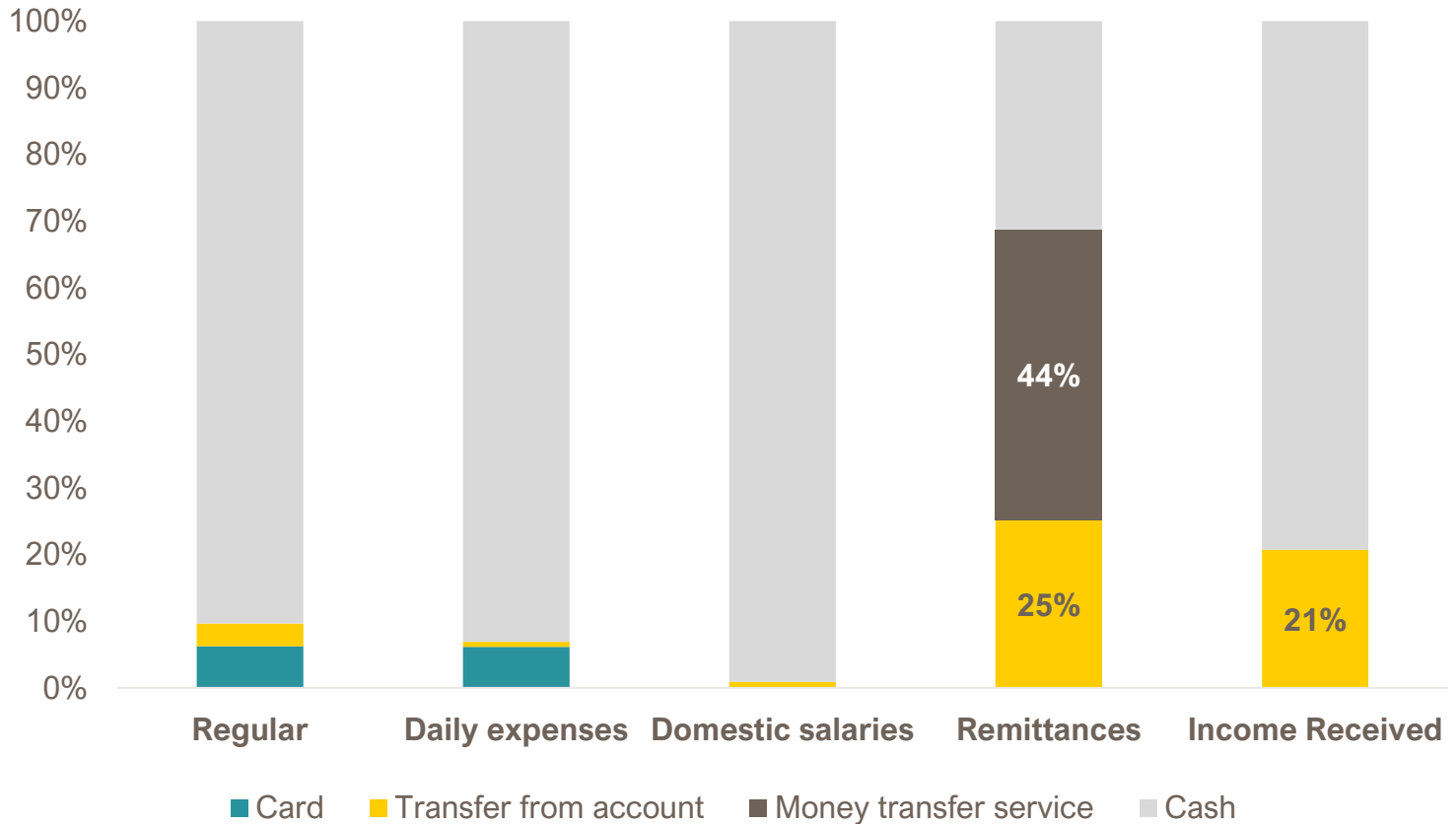
# Payments:

## Cash dominating, with the exception of remittances

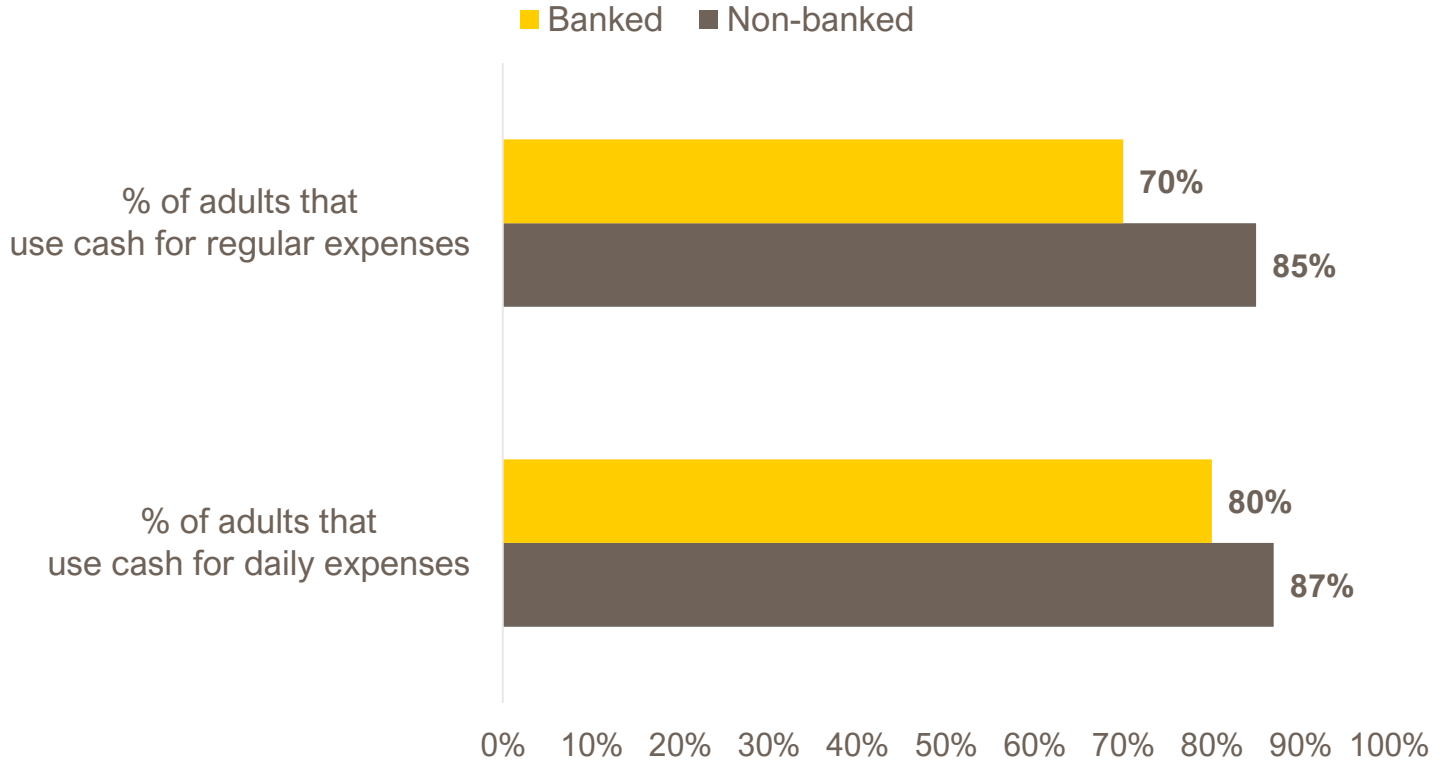


Source: Puebla field survey

## Most remittances still have a cash link



# Cash remains the primary mechanism to transfer value, even for those with a bank account

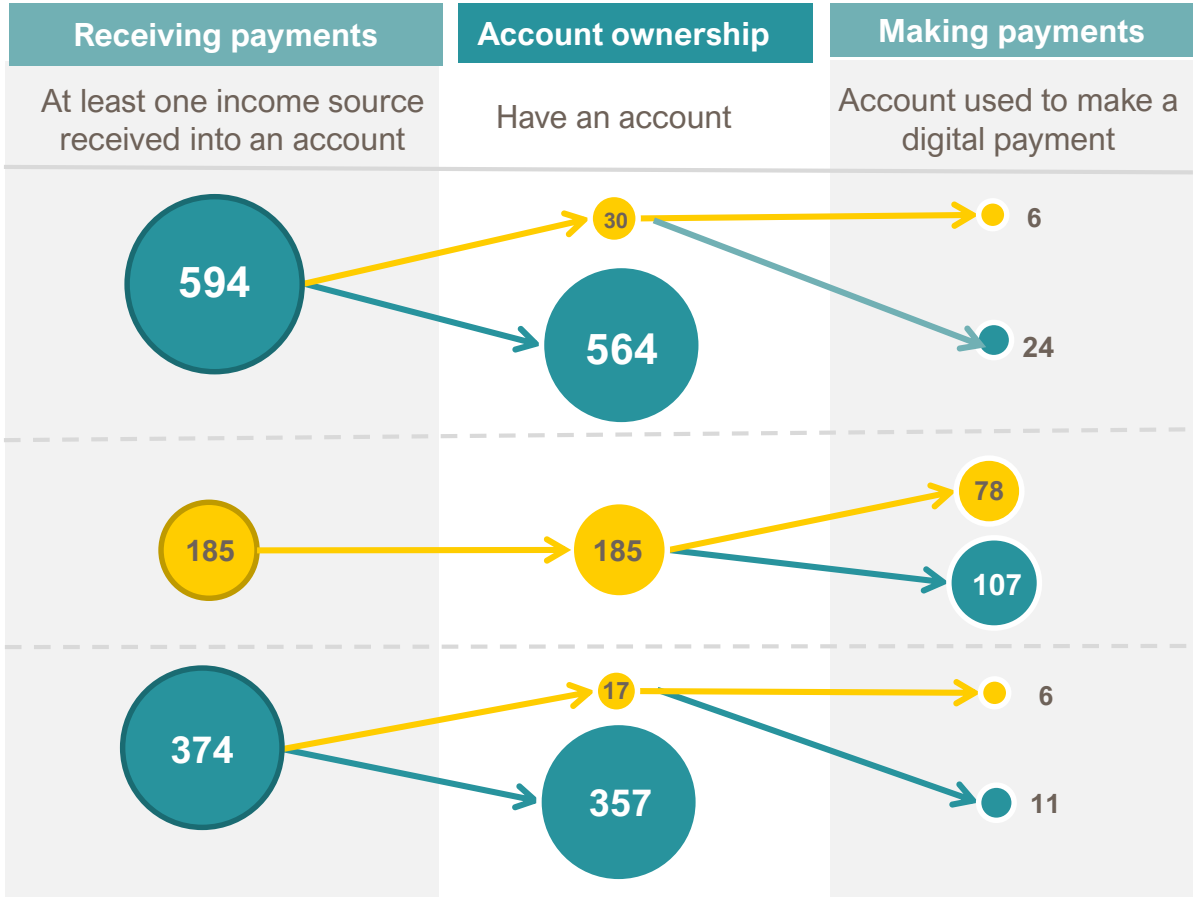


Source: Puebla field survey



# Digital receipts as a predictor of digital payments?

● Yes  
● No



Source: Puebla field survey

# Transfer of value

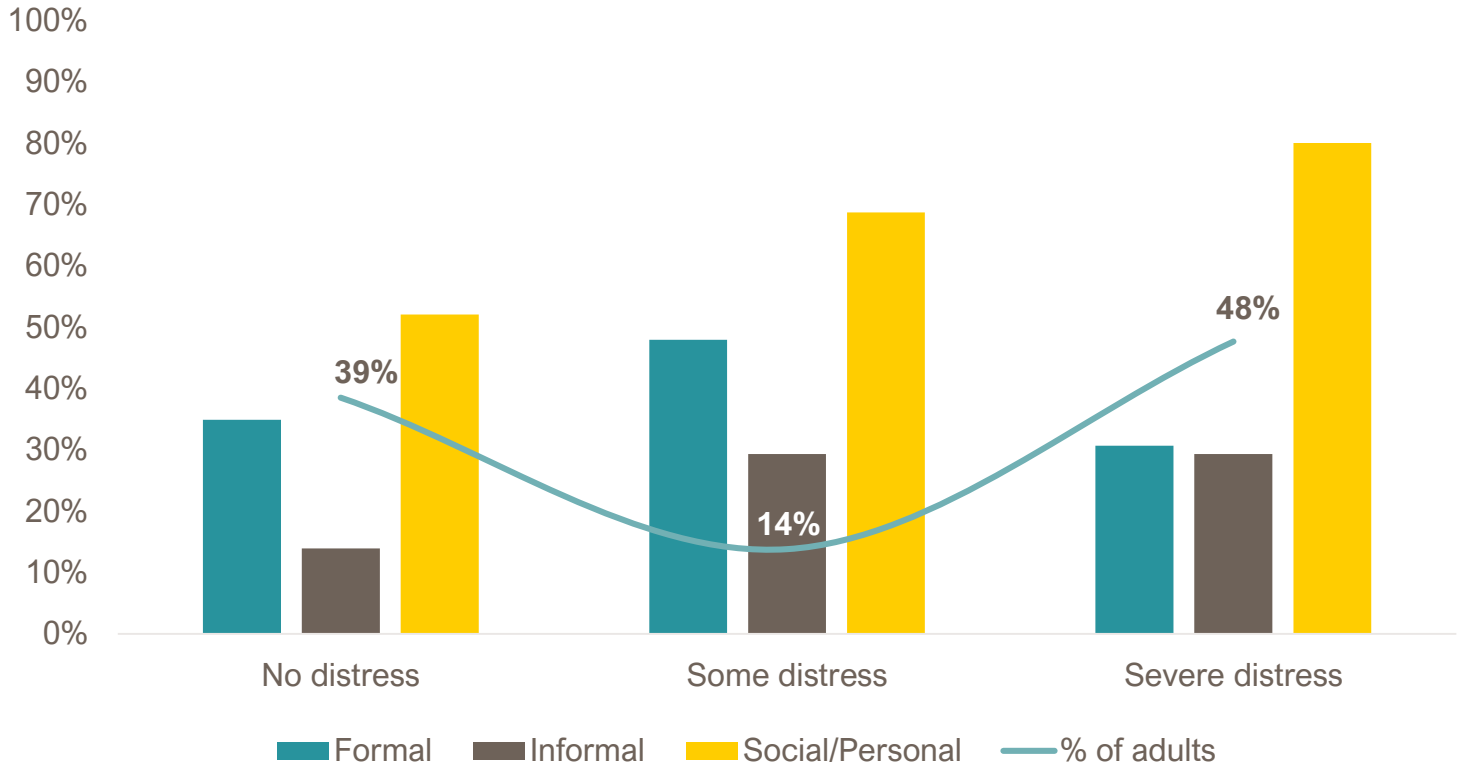
What does this tell us?

- A notable proportion of population have digital accounts.
- *Digital growth points:*
  - Income receipts
  - Remittances
- However, most use cases are still met largely via cash.
- Even for digital, there remains a cash link.
- *Future growth points?*
  - Instant payments that mimic cash

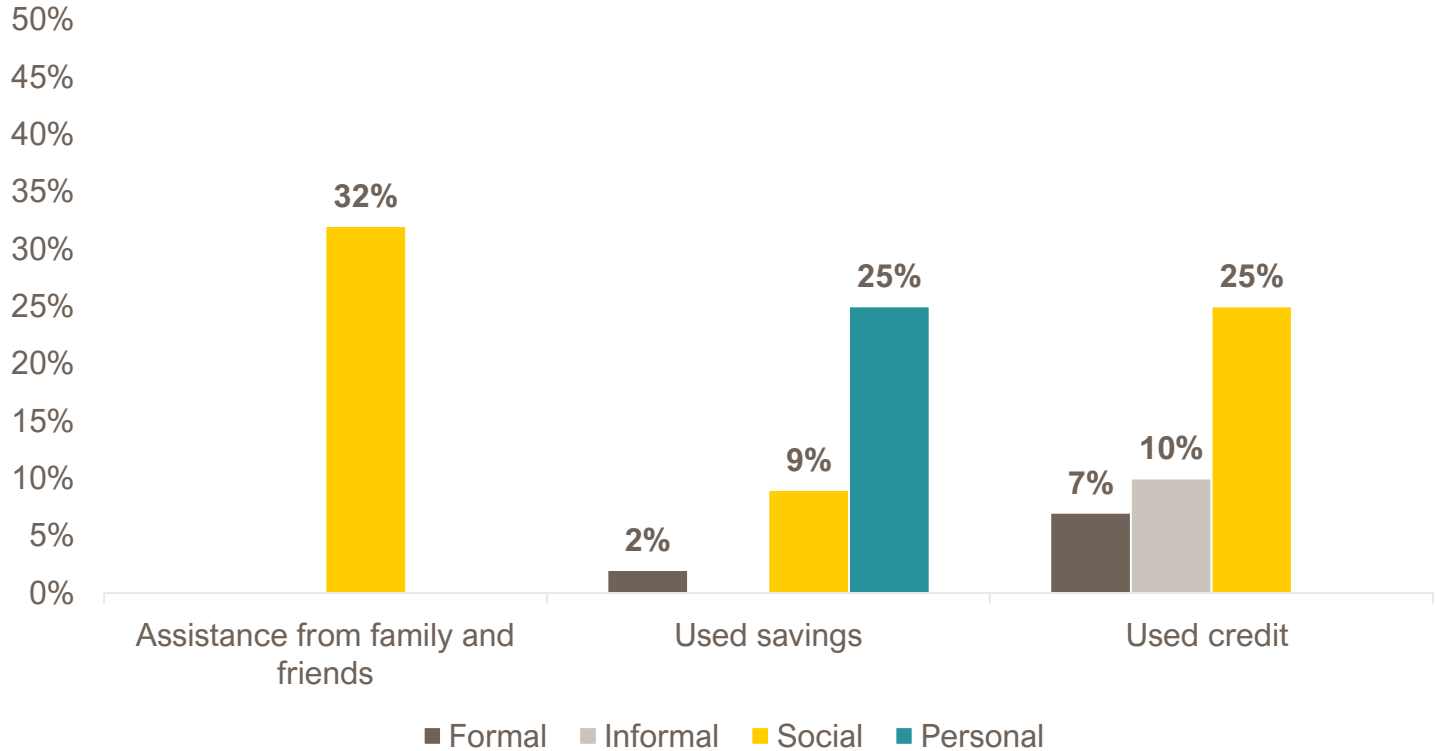
# How do people manage liquidity?



# Most respond to liquidity stress by turning to their community or family



## Very little reliance on formal savings or credit



Source: Puebla field survey

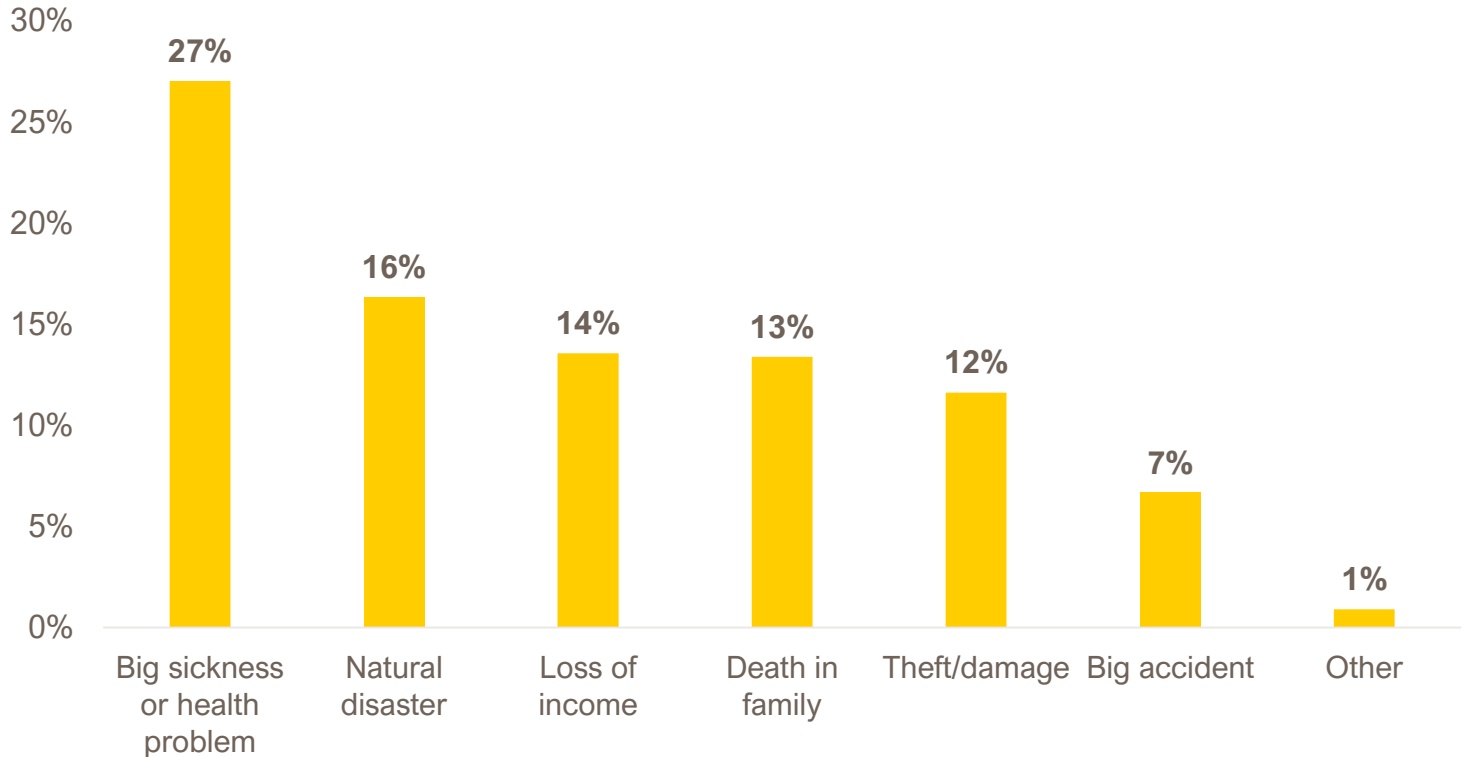
## Liquidity: What does this tell us?

- Distress makes people turn to social circle and cash at home:
  - Ease of access
  - Flexibility
- This is a call to action for the financial sector
  - How can formal features mimic assistance/cash at home to change consumer incentives towards formal?

# How do people cope with risks?



## Many experienced a risk event in the past 12 months

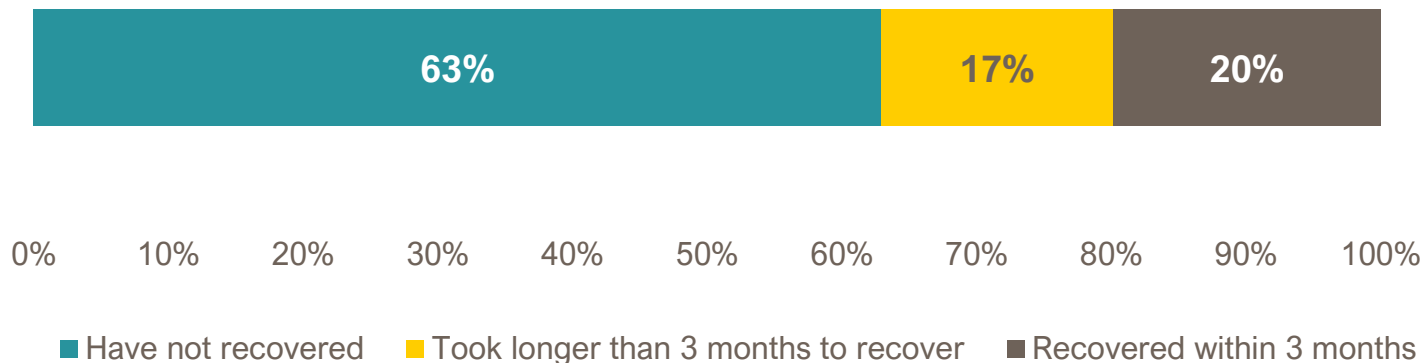


Source: Puebla field survey

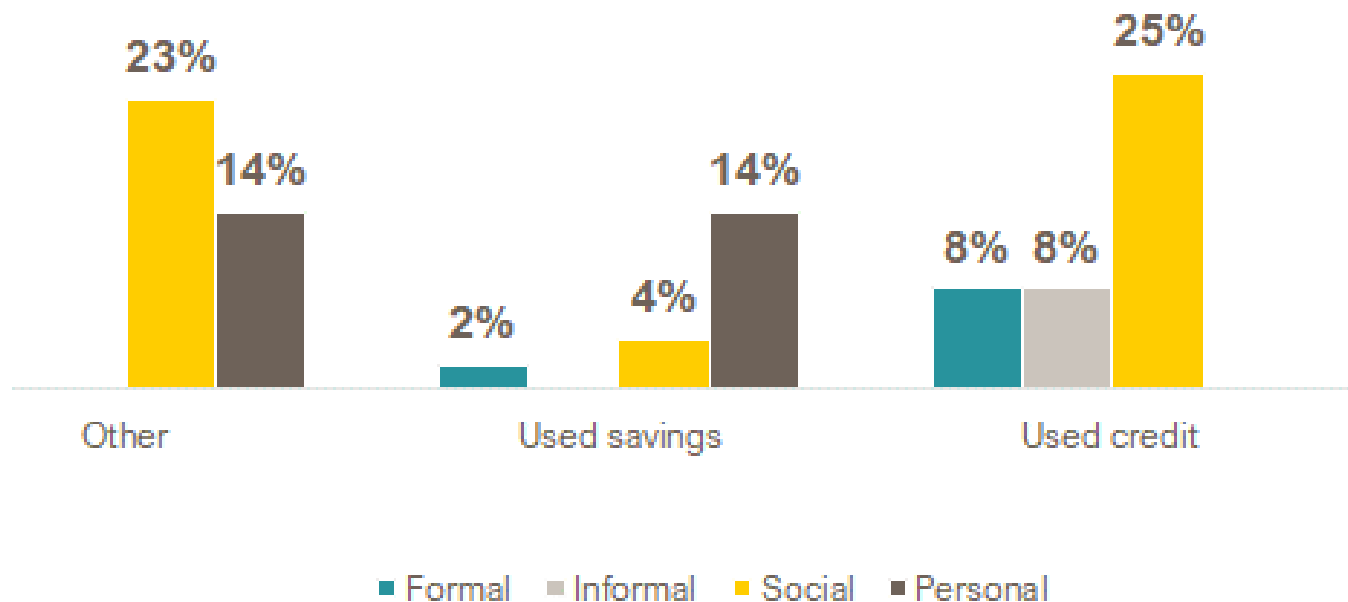


## ...but take a long time to recover (if ever)

% of those who experienced a risk more than three months ago:



## ... despite reliance on informal devices



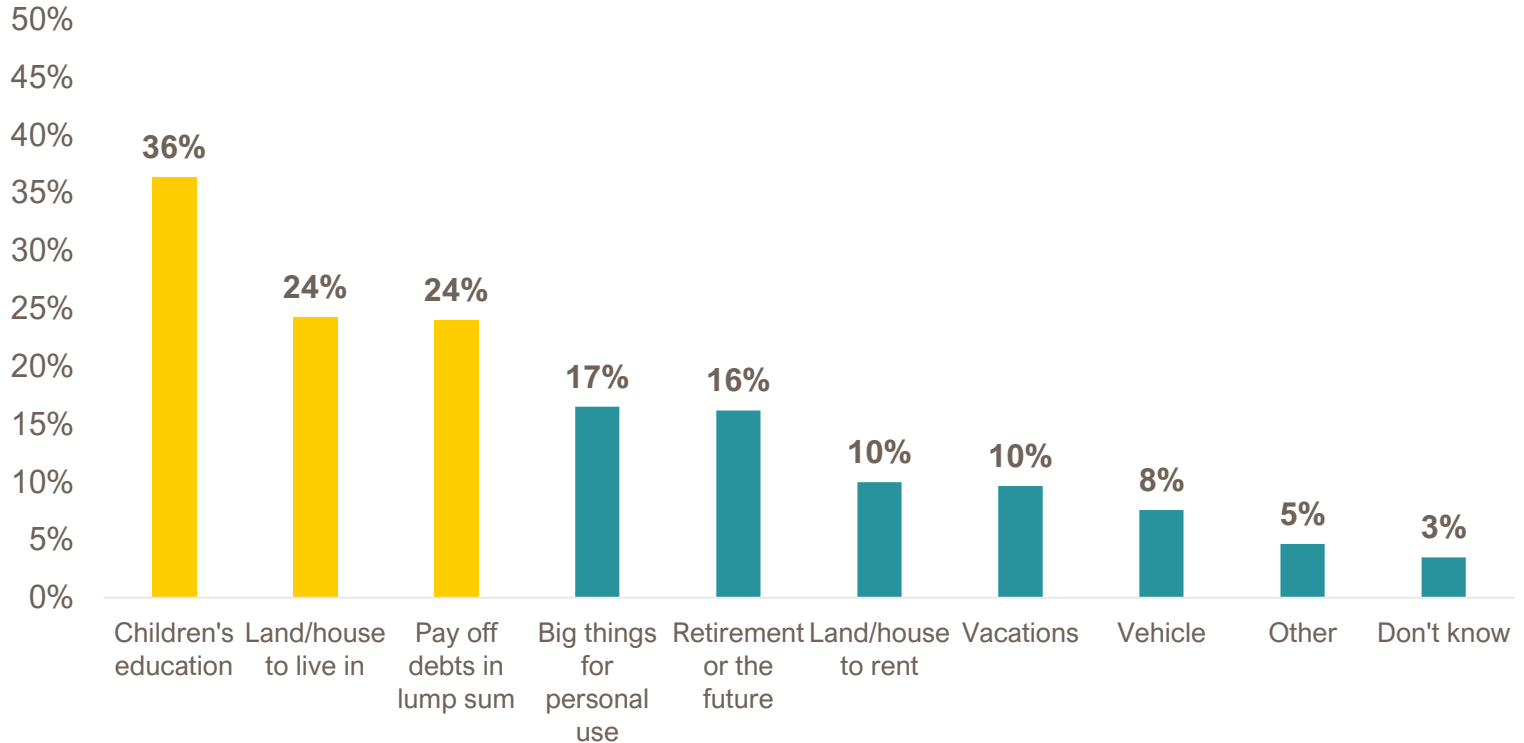
## Resilience: What does this tell us?

- Informal coping strategies not able to secure resilience
- Welfare imperative for larger formal financial sector role

# How do people meet goals?

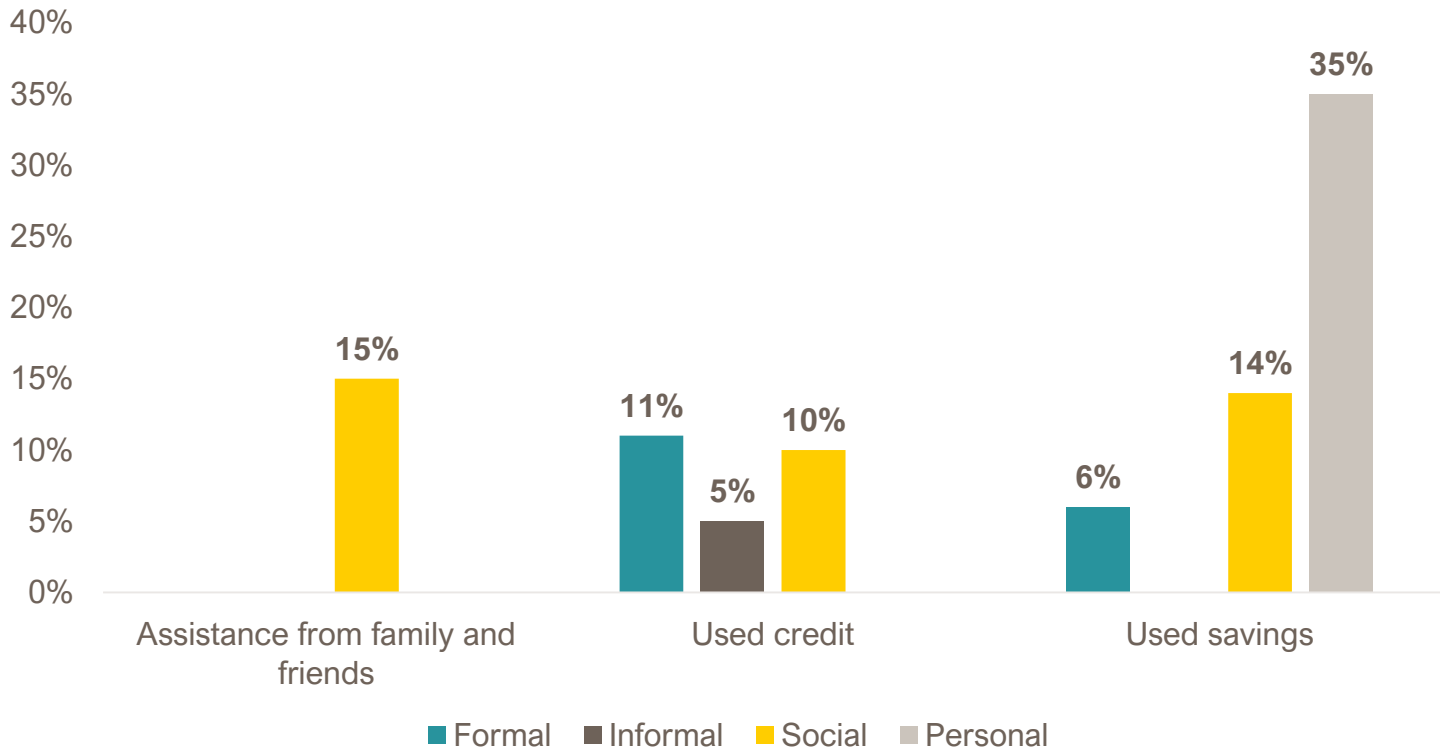


# Education, paying off debts and buying house/land are the most expressed personal goals



Source: Puebla field survey

## Again: Reliance mostly on community or family and friends to meet this need



Source: Puebla field survey

# Meeting goals

## What does this tell us?

- Formal sector already playing large role in some use cases
  - ENIF 2018 shows pensions emerging as anchor alongside other devices for retirement use case
- What will it take to extend the use cases for which the formal financial sector is the anchor?
  - Education
  - Home/land ownership

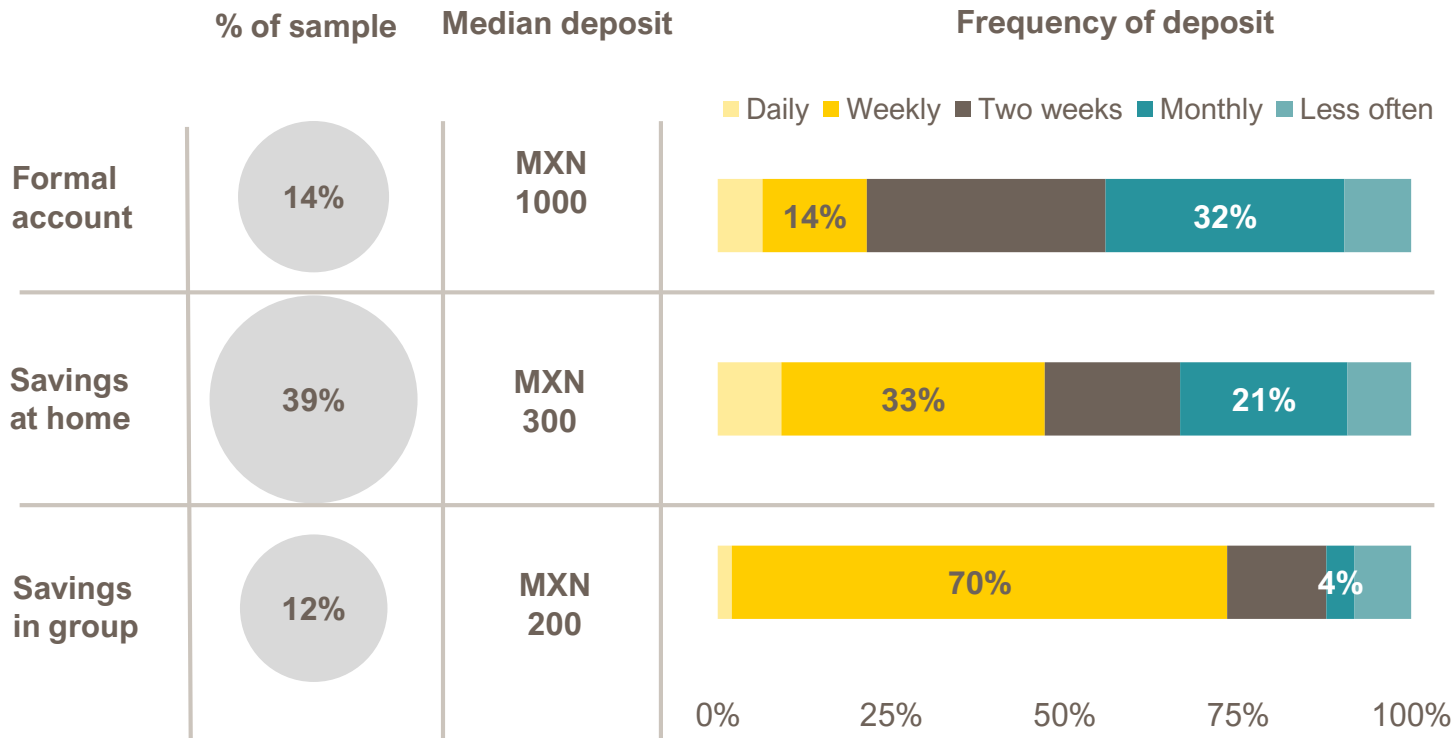
1. How do people meet their financial needs?
- 2. A closer look at usage**
3. Why do these findings matter?



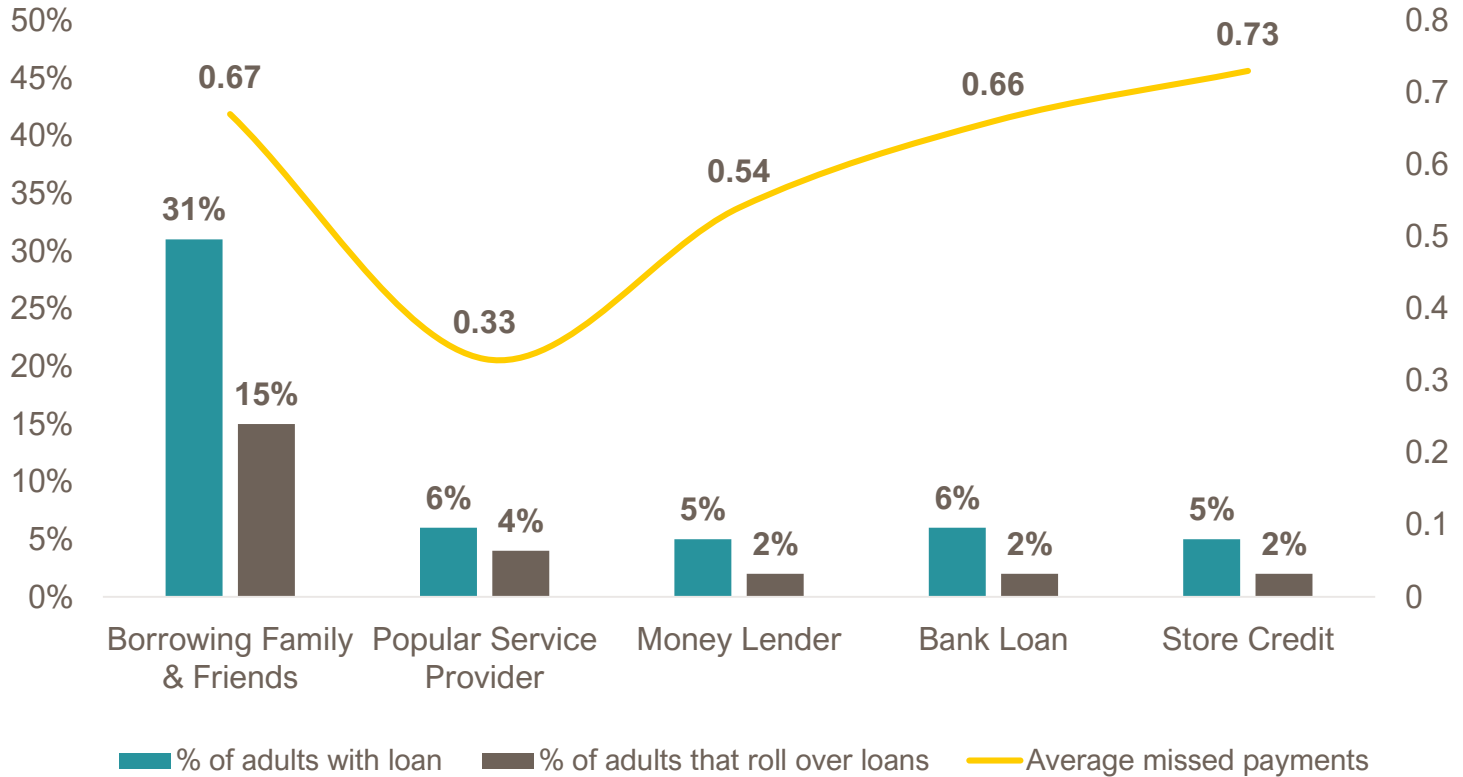
**What are consumers  
telling us about their  
usage behaviour?**



# Savings usage behaviour



# Credit usage behaviour



Source: Puebla field survey

# What does transaction data tell us about usage?



# Overview: Retail bank data

616,867 IDs

## Credit card

77,697 IDs  
5,7m Trxn

- Account age
- Product type
- Amount transacted
- Transaction channel
- Date of transaction
- Monthly balance
- Merchant code
- Credit limit
- Months in arrears
- Required instalment

## Debit card

357,572 IDs  
27.8m Trxn

- Account age
- Product type
- Amount transacted
- Transaction channel
- Date of transaction
- Monthly balance
- Merchant code

## Deposit transfers

201,298 IDs  
7.98m Trxn

- Account age
- Product type
- Amount transacted
- Transaction channel
- Date of transaction
- Monthly balance

## Insurance

97,880 IDs  
1.27m Trxn

- Account age
- Insurance type
- Insured amount
- Premium
- Term (start and end)

## Loans

62,937 IDs  
706k Trxn

- Account age
- Loan type
- Loan amount
- Advance payment
- Status (arrears)
- Date last paid
- Amount last paid
- Term (start and end)

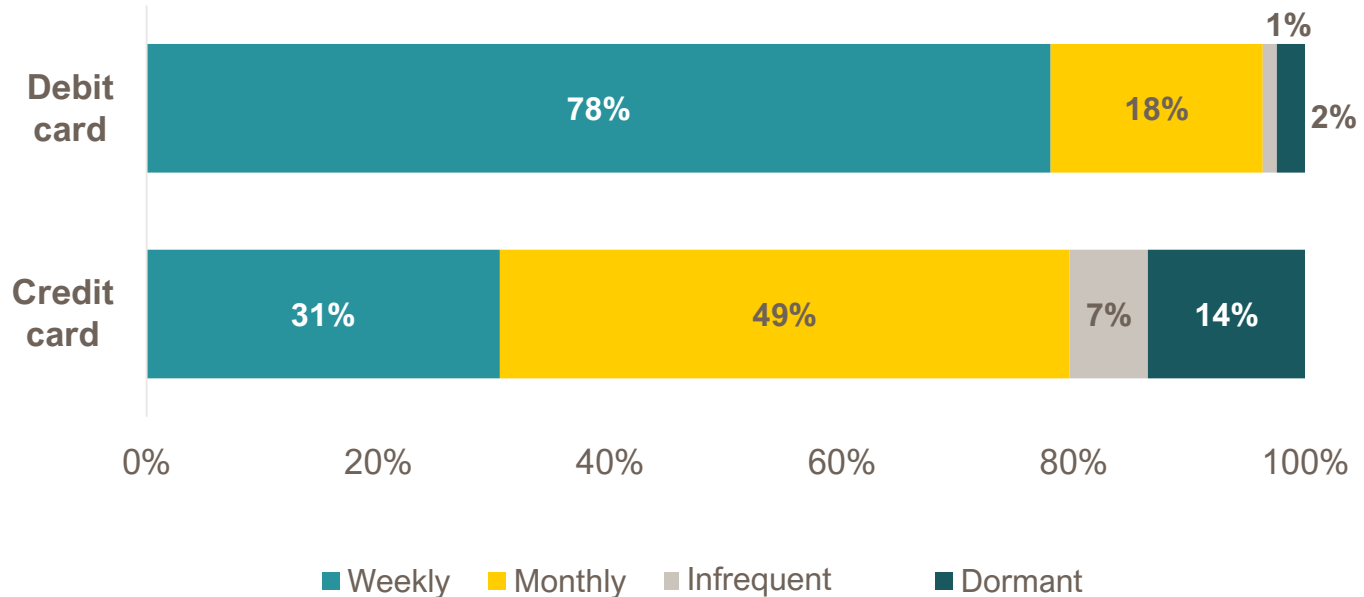
Key variables

## Demographic Information

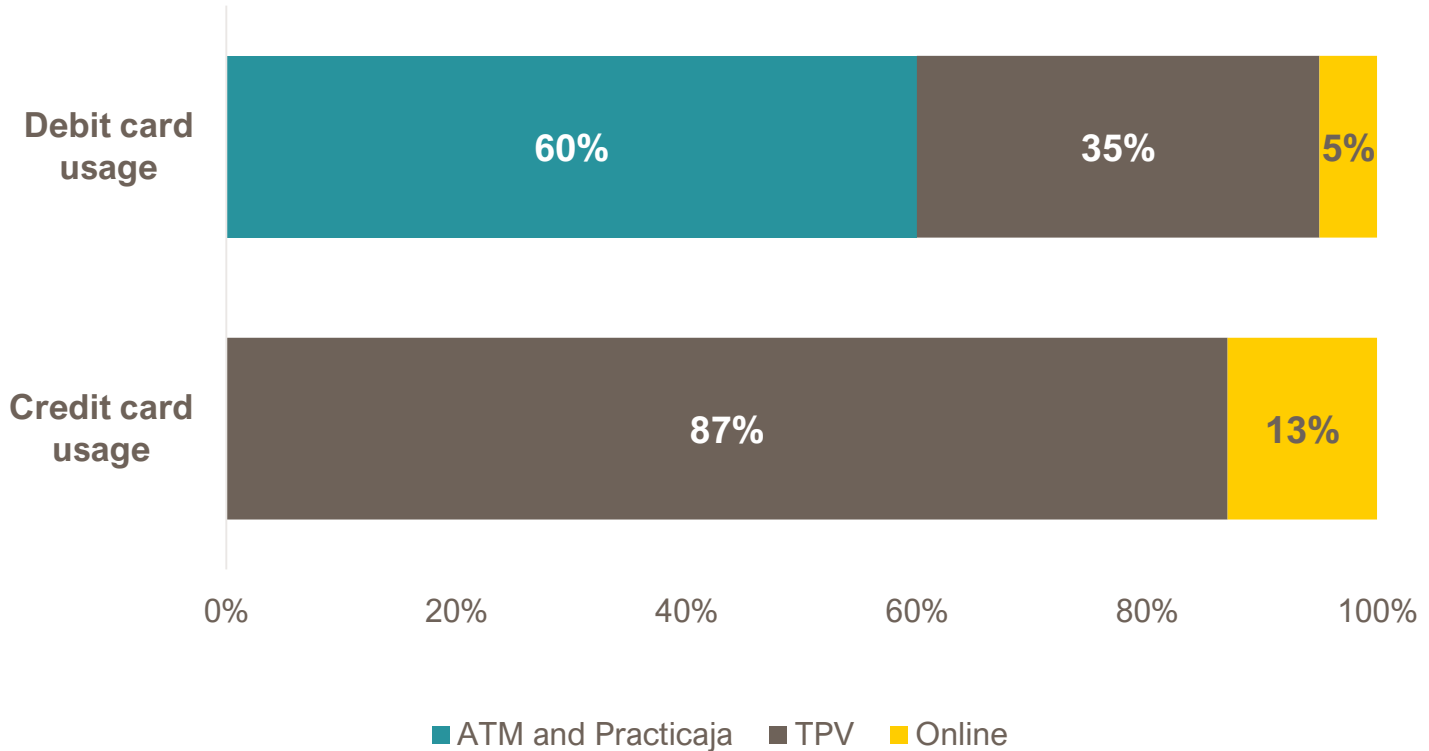
Age Gender Marital status Income Education Years associated

# Comparing debit and credit card users by frequency of use

Frequency: Number of transactions conducted per active month  
*(Unique customers from data sample)*



# Comparing debit and credit card users by payment channel used



Source: Retail bank transactional data

# What determines higher usage?

## Usage Modelling Framework

Usage =	<b>Recency</b>	<i>Measure by</i>	<b>Days since last transaction</b>
	+		
	<b>Frequency</b>	<i>Measure by</i>	<b>Average number of transactions</b>
	+		
	<b>Monetary Value</b>	<i>Measure by</i>	<b>Average amount transacted</b>
	+		
	<b>Duration</b>	<i>Measure by</i>	<b>Age of account</b>

### Process

1. *Cap and floor variables\**
2. *Standardise variables*
3. *Assign quintiles to IDs based on standardised variables*
4. *Create composite score by adding quintiles*
5. *Create quintiles for aggregate score*

*\*drop observations below first percentile and above 99<sup>th</sup> percentile*



# Modelling usage

## Basic analysis process

Basic  
regression

$$\mathit{outcome} = \alpha_1 + \beta_{1-n} [\mathit{demo}_1 + \dots + \mathit{demo}_n] + \rho_{1-m} [\mathit{account}_1 + \dots + \mathit{account}_m] + \epsilon$$

Logistic  
Regression

$$\mathit{outcome} = \begin{cases} 1 & \alpha_1 + \beta_{1-n} [\mathit{demo}_1 + \dots + \mathit{demo}_n] + \rho_{1-m} [\mathit{account}_1 + \dots + \mathit{account}_m] + \epsilon > 0 \\ 0 & \text{else} \end{cases}$$

Ordered logit

$$y = \begin{cases} 0 & y^* < \gamma_1 \\ 1 & \gamma_1 < y^* < \gamma_2 \\ 2 & \gamma_2 < y^* < \gamma_3 \\ \vdots & \\ N & \gamma_N < y^* \end{cases}$$

Nested  
Models

Model 1:  $\mathit{outcome} = \alpha_1 + \beta_1 \mathit{demo}_1 + \epsilon$

Model 2:  $\mathit{outcome} = \alpha_1 + \beta_1 \mathit{demo}_1 + \beta_2 \mathit{demo}_2 + \epsilon$

Model 3:  $\mathit{outcome} = \alpha_1 + \beta_{1-n} [\mathit{demo}_1 + \dots + \mathit{demo}_n] + \epsilon$

Model 4:  $\mathit{outcome} = \alpha_1 + \beta_{1-n} [\mathit{demo}_1 + \dots + \mathit{demo}_n] + \rho_1 \mathit{account}_1 + \epsilon$

Model 5:  $\mathit{outcome} = \alpha_1 + \beta_{1-n} [\mathit{demo}_1 + \dots + \mathit{demo}_n] + \rho_1 \mathit{account}_1 + \rho_2 \mathit{account}_2 + \epsilon$

Model 6:  $\mathit{outcome} = \alpha_1 + \beta_{1-n} [\mathit{demo}_1 + \dots + \mathit{demo}_n] + \rho_{1-m} [\mathit{account}_1 + \dots + \mathit{account}_m] + \epsilon$

# Modelling usage

## Results

### Ordered Logistic Regression

<i>Explanatory variable</i>	<b>Debit Usage</b>	<b>P&gt; z </b>	<b>Credit Usage</b>	<b>P&gt; z </b>	<i>Statistics</i>
<i>gender (male)</i>	1.05	0.000	0.98	0.121	<b><i>Number of Observations</i></b> 354,692 ; 77,278 <b><i>LR chi<sup>2</sup> (16)</i></b> 168,683 ; 175,513 <b><i>Probability &gt; chi<sup>2</sup></i></b> 0.000 ; 0.000 <b><i>Pseudo R-squared</i></b> 0.1490 ; 0.0714
<i>age</i>	0.97	0.000	0.99	0.000	
<i>In a relationship</i>	1.4	0.000	0.93	0.000	
<b><i>Income (base = Low)</i></b>					
<i>Medium Low</i>	4.8	0.000	0.6	0.000	
<i>Medium High</i>	9.4	0.000	1.4	0.000	
<i>High</i>	12	0.000	2.9	0.000	
<i>Very High</i>	13.1	0.000	8.4	0.000	
<b><i>Education (base = None)</i></b>					
<i>Junior High School</i>	1.36	0.001	0.55	0.004	
<i>High School</i>	1.86	0.000	0.74	0.137	
<i>Tertiary</i>	2.34	0.000	1.3	0.199	

# Modelling usage

## What determines usage?

### Ordered Logistic Regression

Explanatory variable	Debit Usage	P> z	Credit Usage	P> z	Statistics
gender (male)	1.05	0.000	0.98	0.121	
age	0.97	0.000	0.99	0.000	
<b>Income (base = None)</b>					<b>Number of Observations</b>
None	1.0	0.000	1.0	0.000	168,683 ; 175,513
Low	1.2	0.000	1.2	0.000	0.000 ; 0.000
Medium	9.4	0.000	1.4	0.000	0.000 ; 0.000
High	12.2	0.000	2.2	0.000	0.000 ; 0.000
Very High	13.1	0.000	8.4	0.000	0.000 ; 0.000
<b>Education (base = None)</b>					<b>Pseudo R-squared</b>
Junior High School	1.36	0.001	0.55	0.004	0.1490 ; 0.0714
High School	1.86	0.000	0.74	0.137	
Tertiary	2.34	0.000	1.3	0.199	

- **Income** is the most important driver of usage.
- **Education** is strongly associated with higher usage.
- Being in a **relationship** is strongly associated with higher usage scores.
- Gender and age have small, statistically significant effects.

## But it is about more than just income and demographics

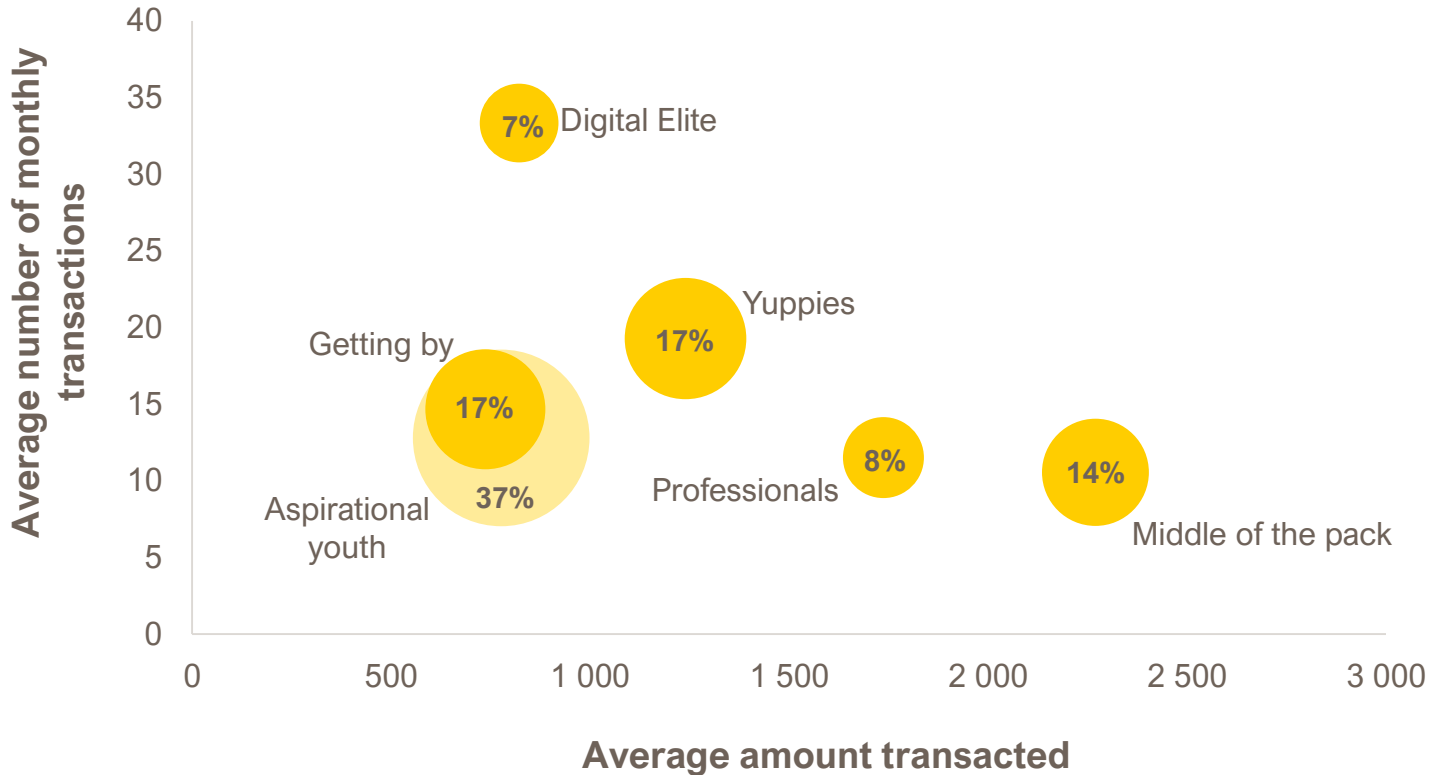
When asked why they choose their particular device mix, the following picture emerges from the Puebla survey:

- People tend to use **formal services** more for the **functional benefit** (value and cost)
- Tend to use **informal/social** for **relational benefits** (trust and sense of belonging).
- All socioeconomic classes skew towards relational, except for AB who emphasise functional benefits.

## Segmenting customers by usage intensity

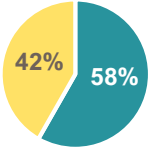
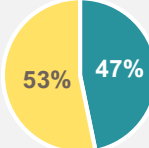
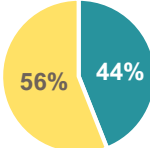
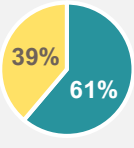
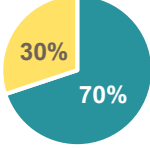
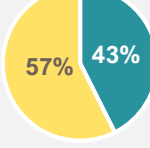
<b>Method</b>	K-means Clustering
<b>Data</b>	Debit card transactions
<b>Variables</b>	<ol style="list-style-type: none"><li>1. Average number of transactions</li><li>2. Average amount transacted</li><li>3. Gender</li><li>4. Age</li><li>5. Income</li><li>6. Education</li></ol>

## Six clusters of users



Source: Retail bank transactional data

# Overview of usage cluster profiles

	Getting by	Aspirational youth	Middle of the pack	Digital Elite	Professionals	Yuppies
% of sample	17%	37%	14%	7%	8%	17%
Gender						
Income	Low	Very Low	Medium	High	Very high	Very high
Married*	37%	35%	58%	47%	54%	55%
Education	Poor	Poor	Decent	Excellent	Good	Good
Median age	42	32	50	41	43	36

Source: Retail bank transactional data

\*or living together/in a relationship

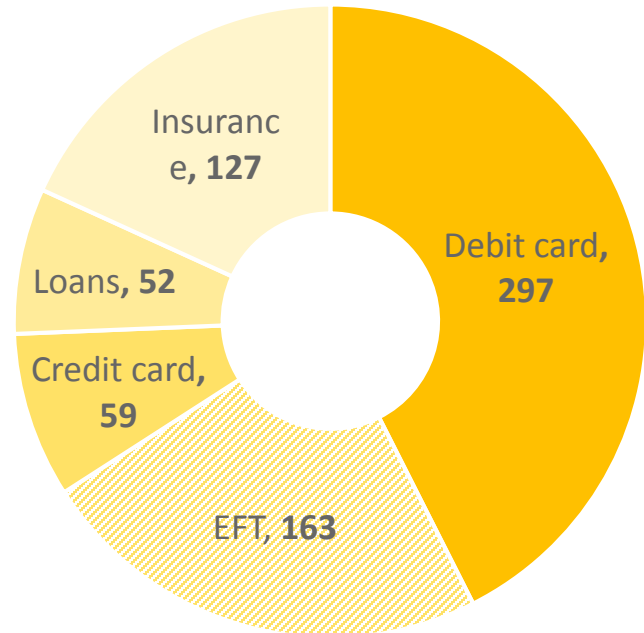
**What insights do we get from  
combining the transaction and  
demand-side picture?**





## Merged data set summary statistics

- Final sample size: 400
- Matches in bank dataset:
- **Cautionary notes:**
  - Smaller sample size limits granularity
  - Inherent sampling bias towards higher income and more “established” clients
  - Demand-side data underreports formal usage relative to the objective stats in the transaction data



# Understanding formal usage in context

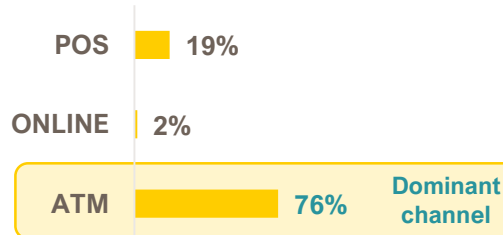
## Usage Cluster Profile 1: Getting by

### Getting by

**17%** of customers fall into this segment

Transactions per month	<b>15</b>
Average value per transaction	<b>MXN 736</b>
Median monthly spend	<b>MXN 8,466</b>

### Transaction types used



Consumer needs	Formal	Informal
Receive income	<b>69%</b> digital	45% cash
Make payments	60% digital	<b>98%</b> cash
Balance expenses (Liquidity)	11%	<b>92%</b>
Manage risks (Resilience)	10%	<b>54%</b>
Meet goals	27%	<b>76%</b>

# Understanding formal usage in context

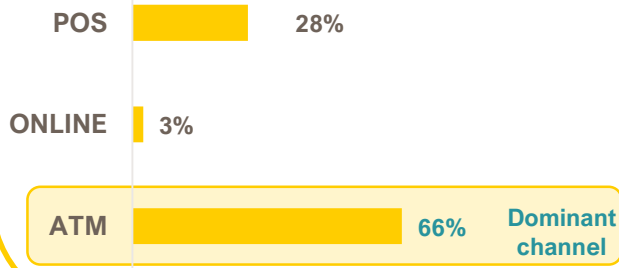
## Usage Cluster Profile 2: Aspirational youth

### Aspirational youth

**37%** of customers fall into this segment

Transactions per month	<b>13</b>
Average value per transaction	<b>MXN 766</b>
Median monthly spend	<b>MXN 8,596</b>

### Transaction types used



Consumer needs	Formal	Informal
Receive income	<b>60%</b> digital	45% cash
Make payments	57% digital	<b>96%</b> cash
Balance expenses (Liquidity)	15%	<b>97%</b>
Manage risks (Resilience)	13%	<b>47%</b>
Meet goals	34%	<b>72%</b>

# Understanding formal usage in context

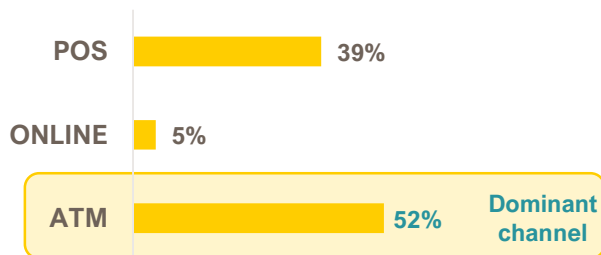
## Usage Cluster Profile 3: Middle of the Pack

### Middle of the pack

**14%** of customers fall into this segment

Transactions per month	<b>11</b>
Average value per transaction	<b>MXN 2,247</b>
Median monthly spend	<b>MXN 22,160</b>

### Transaction types used



Consumer needs	Formal	Informal
Receive income	<b>59%</b> digital	37% cash
Make payments	49% digital	<b>100%</b> cash
Balance expenses (Liquidity)	50%	<b>65%</b>
Manage risks (Resilience)	19%	<b>35%</b>
Meet goals	38%	<b>62%</b>

# Understanding formal usage in context

## Usage Cluster Profile 4: Digital Elite

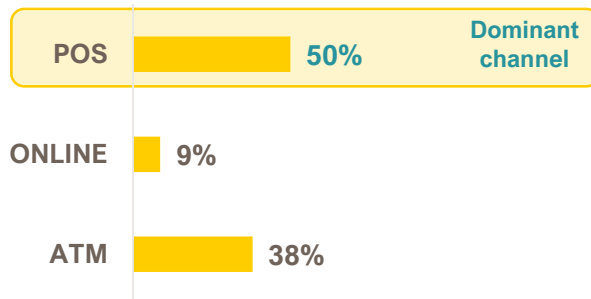


### Digital Elite

7% of customers fall into this segment

Transactions per month	33
Average value per transaction	MXN 821
Median monthly spend	MXN 23,427

### Transaction types used



Consumer needs	Formal	Informal
Receive income	88% digital	46% cash
Make payments	92% digital	92% cash
Balance expenses (Liquidity)	73%	53%
Manage risks (Resilience)	45%	45%
Meet goals	60%	50%

# Understanding formal usage in context

## Usage Cluster Profile 5: Professionals

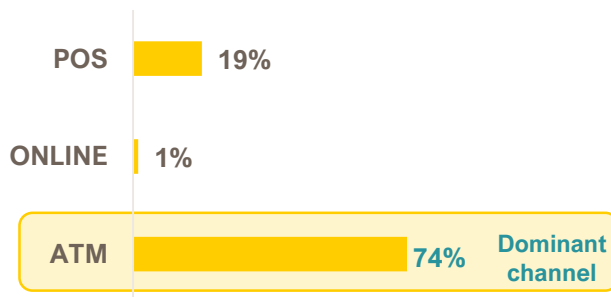


### Professionals

8% of customers fall into this segment

Transactions per month	12
Average value per transaction	MXN 1,712
Median monthly spend	MXN 17,508

### Transaction types used



Consumer needs	Formal	Informal
Receive income	58% digital	38% cash
Make payments	67% digital	100% cash
Balance expenses (Liquidity)	23%	77%
Manage risks (Resilience)	10%	40%
Meet goals	38%	46%

# Understanding formal usage in context

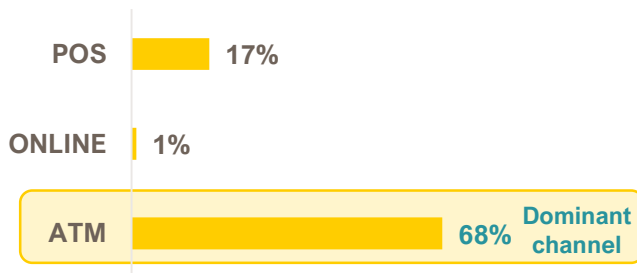
## Usage Cluster Profile 6: Yuppies

### Yuppies

**17%** of customers fall into this segment

Transactions per month	<b>19</b>
Average value per transaction	<b>MXN 1,162</b>
Median monthly spend	<b>MXN 19,250</b>

#### Transaction types used



Consumer needs	Formal	Informal
Receive income	<b>71% digital</b>	49% cash
Make payments	74% digital	<b>91% cash</b>
Balance expenses (Liquidity)	30%	<b>87%</b>
Manage risks (Resilience)	22%	<b>31%</b>
Meet goals	<b>54%</b>	46%

1. How do people meet their financial needs?
2. A closer look at usage
- 3. Why do these findings matter?**



## Key findings

FI is not yet doing enough to build financial health and social equity



Unmet needs highlight large market opportunities...



... and create distinct policy and market imperatives.

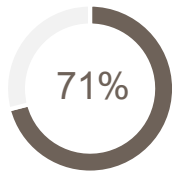
## Falling short of its policy purpose

- **Customer portfolio choice systematically biased against formal sector**
  - Across socio-economic classes and finneeds
  - Growth points: pensions, remittances, income receipts
- **Formal sector limited contribution to building welfare**
  - 37% ran out of money more than one month the past year.
  - 63% who experienced a shock more than three months ago had not yet recovered.
  - *A more formal portfolio does not really make a difference.*
  - *But neither do informal/social devices ensure resilience.*
- **A mismatch between needs and market offering**
  - The social/informal preference is not due to low literacy or awareness.
  - Informal is preferred for relational aspects and cash for convenience.

# Substantial market opportunities

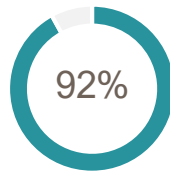
% of each “need market” still to be tapped:

Transfer of Value



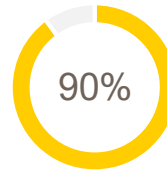
- Digital must compete with cash on ubiquity, convenience, cost
- *Existing growth points:* income receipts, remittances, card
- *Future:* instant payments

Liquidity



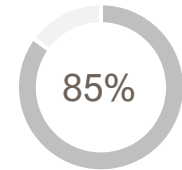
- Large opportunity if consumer incentives can change towards formal

Resilience



- *Informal cannot fully protect, so opportunity for formal:*
  - Use case-earmarked savings and loans
  - Tangible, bundled insurance benefits

Meeting goals



- ENIF shows pensions as anchor for retirement use case
- Opportunity for the same to happen for other key use cases
- E.g. use case-earmarked savings and loans

**Focus financial inclusion on outcomes, rather than reach**

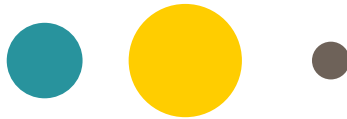
by fixing failures and leveraging successes of financial sector from a finneeds perspective

**Importance for:**

-  Welfare
-  Business opportunity
-  Digitisation

# Policy and market imperatives

## 1. Change incentives for dealing with liquidity distress



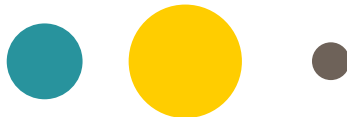
Formal services must provide the ease of access and flexibility of informal and social alternatives

## 2. Build resilience via formal financial sector



Holistic policy perspective on how to help people recover from financial shocks and build resilience: via insurance, but also credit, savings and social security

## 3. Extend the goal use cases for which financial sector is the anchor



Explore scope for savings vehicles earmarked for education savings and land/property ownership

## 4. Make digital payments cash-competitive



Frame digitisation path taking cash use cases as starting point  
Instant payments for *ubiquity, convenience, cost (CoDi)*

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