

A group of people are gathered around a table in a meeting room. The table is covered with several large photographs. A man in a white t-shirt is speaking and gesturing with his hands. The room has blue and green walls. The text "BEHAVIORAL MODEL FOR FINANCIAL HEALTH" is overlaid on the image.

# BEHAVIORAL MODEL FOR FINANCIAL HEALTH

Dalberg Design Impact Group  
Model Overview  
January, 2017

BILL & MELINDA  
GATES foundation

**CFSI** Center for  
Financial Services Innovation

CENTER for  
FINANCIAL  
INCLUSION

ACCION

Dalberg

DIG

# *Contents*

1. Overall Aim & Approach
2. The Global Context
3. Financial Identities
4. Financial Behaviors
5. Model Overview
6. Model Applications



# *Overall Aim & Approach*

## Overview | Objectives & Framing Questions

Working together with CFSI & CFI, we sought to understand whether a global version of their financial health framework could advance our collective understanding of consumer behavior and deepen our appreciation of the impact of finance on personal well-being among the poor.

We did not focus this inquiry on the ways in which people use payment, savings, credit, and insurance services, but rather tried to build a holistic understanding of how financial aspirations shape the lives and behavior of the poor on a day-to-day basis.

### QUESTIONS:

- Are there common features that suggest that a common framework can apply across diverse communities and markets around the world?
- How can we get past usage and access as the core value proposition for FI, and what might we measure instead?
- How might we describe the variety of ways that people experience financial health without relying on our pre-conceived notions of balance sheets and product offerings?
- How might we factor in the both the practical and emotional impacts of financial health on people's lives?
- How can we account for both individual and social behavior related to financial health?

## Overview | User Perspectives on Financial Health

*"I spend more than what comes in—that's unhealthy"*

—Betty | Nairobi, Kenya

*"Financial stability is when you don't have to ask other people for help"*

—Abraham | Nyahruru, Kenya

*"Financial health is when I have what I need every day"*

—woman from small group | Sinnar, India

*"When you have no debt, that's when you're healthy."*

—woman from small group | Sinnar, India

*"Financial health is when you can pay your bills and have money left over."*

—Phoebe | Nairobi, Kenya

*"Financial health is a house and a good salary"*

—Rahul | Mumbai, India

*We will be financially healthy when all of us three brothers start earning and we start earning more"*

—Yogesh | Sinnar, India

## Overview | About Us

DIG pioneers an integrated approach to problem-solving and strategic planning that combines the best skills in **human-centered design, systems thinking** and **agile methodologies**. DIG leverages the global footprint and deep content expertise of Dalberg Global Development Advisors.

- Offices in 15 countries with majority of staff in global south
- DIG Design teams in New York, London, Nairobi and Mumbai
- Core financial inclusion practice with design work in nine countries spanning early stage user research to product & service design for the public and private sectors



... in **19** COUNTRIES on **5** CONTINENTS

GUATEMALA • MEXICO • USA • CHILE • DENMARK • ITALY • NETHERLANDS  
UK • KENYA • NIGERIA • RWANDA • SENEGAL • SOUTH AFRICA • UGANDA  
ZAMBIA • INDIA • INDONESIA • UAE • VIETNAM

... at **12** DALBERG OFFICES

NEW YORK • SAN FRANCISCO • WASHINGTON DC • COPENHAGEN • GENEVA  
LONDON • DAKAR • JOHANNESBURG • LAGOS • NAIROBI • MUMBAI  
NEW DELHI

# 89 qualitative interviews across 18 communities in 4 weeks

Including:

17 in-depth household interviews

31 intercept Interviews

6 small group sessions

4 key informant interviews

## Approach | Methodology

Using human-centered design, we explored the financial behaviors of a diverse sample of people in Kenya and India in order to better understand how they pursued financial health



# 1000+

respondents across  
Kenya and India to a  
55 question survey  
built through in-  
depth HCD

Sampling Criteria:

**Gender** (even)

**Age** (18+)

**Location** (Urban, rural, periurban)

**Income** (1-20 USD/day)

**Livelihood** (formal salaried,  
informal wage laborers, business  
owners, farmers)

**Financial Service Usage** (No  
formal usage, some formal usage,  
moderate formal usage, frequent  
formal usage)

## Approach | Methodology

We tested and built upon our qualitative insights with quantitative surveys in Kenya and India that sampled over 1000 people from the locations where we conducted HCD research

F2. For what purpose have you borrowed money in the last 12 months? (Select all applicable)

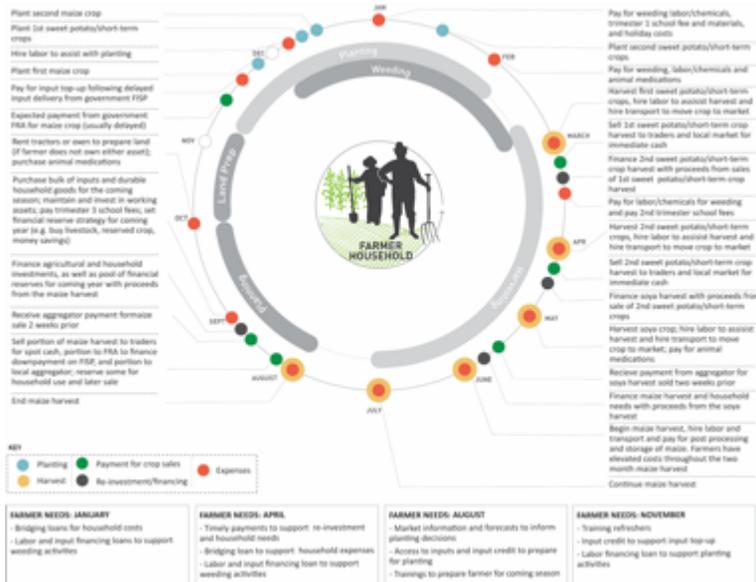


1. Basic needs such as groceries, transportation, and bills (utility bills, mobile phone and airtime, rent, taxes, etc.)
2. Unexpected expenses
3. Social obligations such as festivals, funerals/weddings
4. Educational expenses, school fees
5. Buying livestock
6. Medical payments (for hospital charges)
7. Make a large purchase, such as TV, car or bicycle, etc.
8. Buy a house / land / property
9. Expand your own business, including making investments in my farm (e.g. tractors, implements, seeds, etc.)
10. Starting a new business
11. Working capital for existing business (e.g. buying inventory, etc.)
12. For children's wedding (the ceremony, dowry, and/ or assistance in setting up household)
13. To repay another loan
14. Other (Specify)

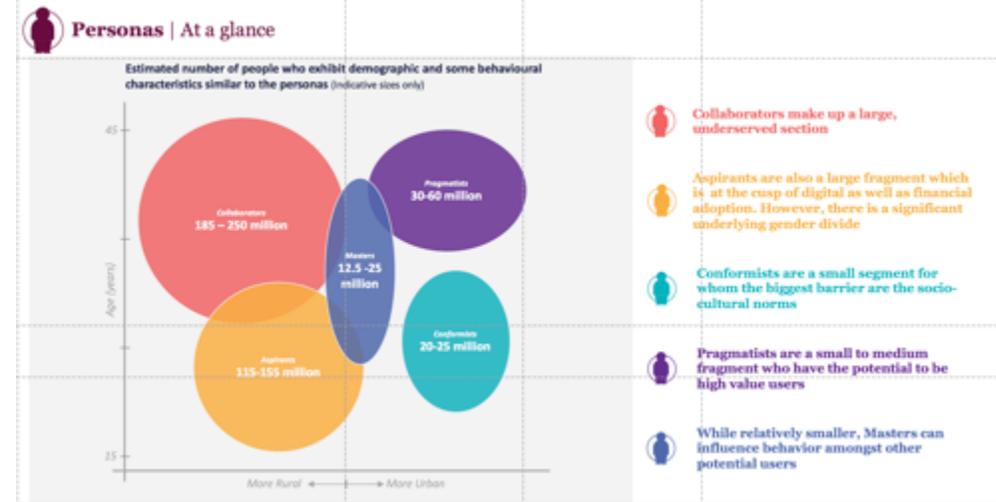
## Approach | Applying the Framework

Over the past 6 months, we have put our thinking into practice, applying the behavioral framework presented here in recent DFS work in Zambia and India

### Zambia: Small-holder farmer DFS platform



### India: DFS behavioral segmentation



# *Global Context*



# 1. Low and Unreliable Incomes

Many low-income people work in the **informal sector** or in small-scale agriculture. Their incomes are not only low, but also **unpredictable and insecure**, causing them significant and persistent challenges managing cash flow and covering expenses. More than any other single factor, these income dynamics shape people's financial lives.

Moreover, there is an **income threshold** below which financial management alone cannot secure people's well-being. Below this threshold people lack the resources necessary to meet basic daily needs. The **scarcity and financial stress** they suffer constrains their capacity for financial management.

---

**George and Scholar** have two children and rent a tarp-lined single room in a densely populated low-income neighborhood called Korogocho in Nairobi. They struggle to make rent and to provide for their children because they have no reliable source of income. George works odd handyman jobs and drives a motorcycle taxi when he can get his hands on a bike. Occasionally, Scholar is able to purchase and resell used clothing, but usually lacks the capital to do so.



*“Money is unpredictable. you don't know when you are going to get it...here you have to starve to save.”*

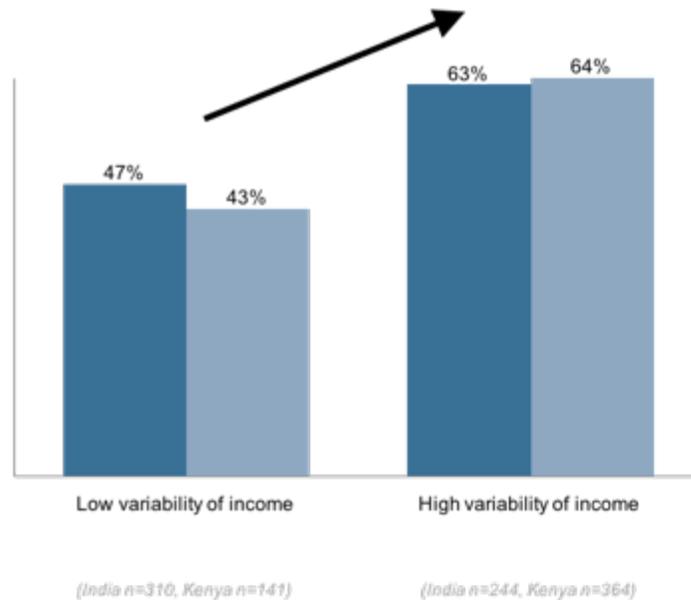
- Zablon, Korogocho, Nairobi, Kenya

## Global Context | Income

**Income Threshold:** Survey respondents who reported more unreliable incomes reported greater difficulty meeting basic needs.

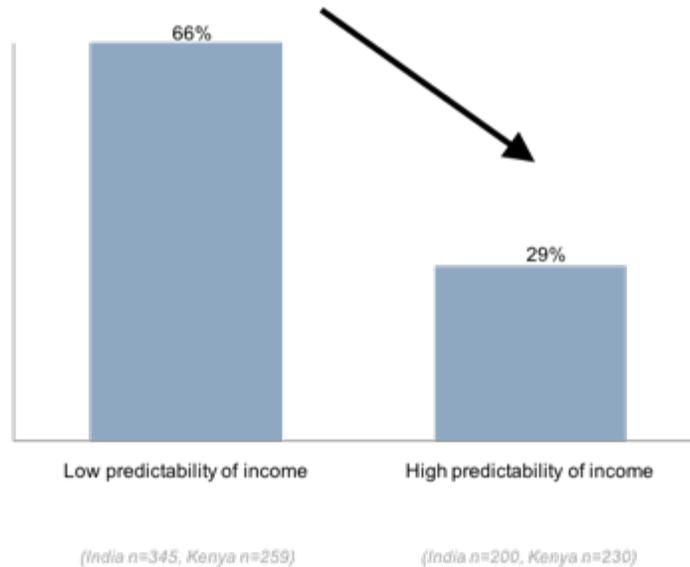
Those with high variability of income found it more difficult to meet at least one basic need...

Percentage of households who struggled to meet at least one basic need<sup>1</sup>  
Q. C1 by Q. B4



... and those with low predictability of income also found it more difficult to meet at least one basic need.

Percentage of households who struggled to meet at least one basic need<sup>1</sup>  
Q. C1 by Q. B5



Furthermore, those earning once in two weeks or monthly found it easier to meet basic needs than others.

Percentage of households who struggled to meet at least one basic need<sup>1</sup>  
Q. C1 by Q. B3



Kenya India

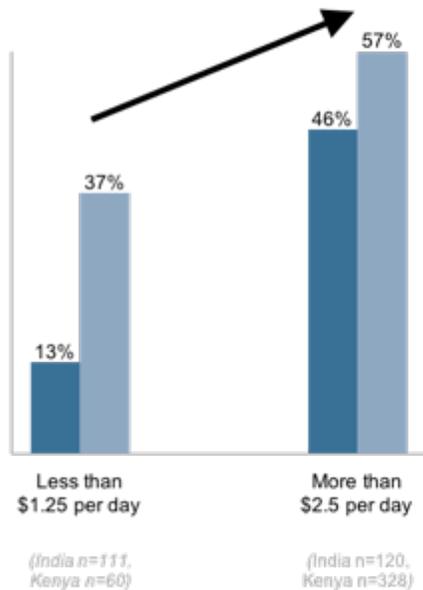
Note: (1) Basic needs include: Afford food/ water, afford shelter, afford medical expenses, pay bills, afford debt re-payments, access sanitation facilities, afford school fees, afford transportation, and afford fuel and/or electricity; (2) Reflects the frequency of main source of income

## Global Context | Income

**Income Threshold:** Conversely, survey respondents who reported higher incomes also reported greater ease of savings, debt management, and satisfaction with their current finances, and fewer emergencies.

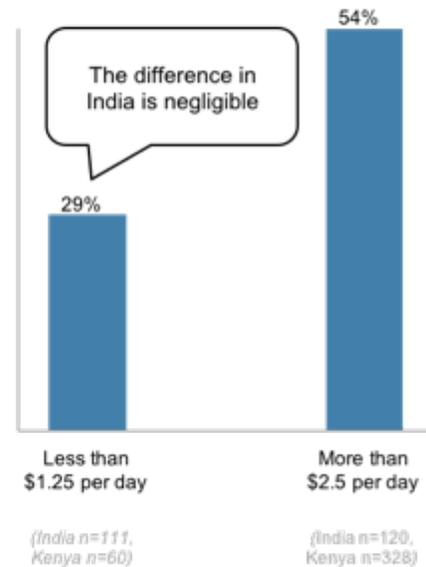
**HHs with higher income levels are more likely to put money away for longer...**

Percentage of households who have put away money for six months or more  
Q. E4



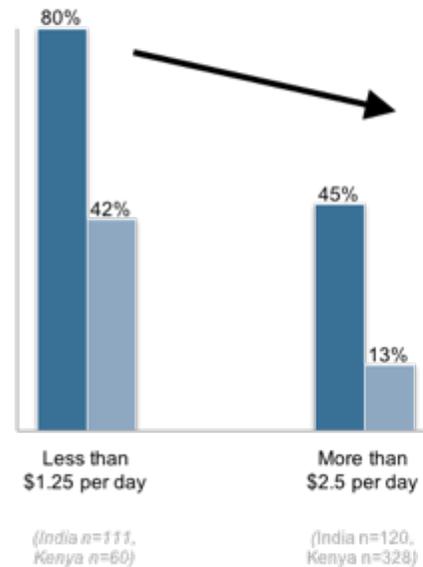
**... and find their debt levels to be much more manageable.**

Percentage of households who feel their debt is manageable or easily manageable  
Q. F5



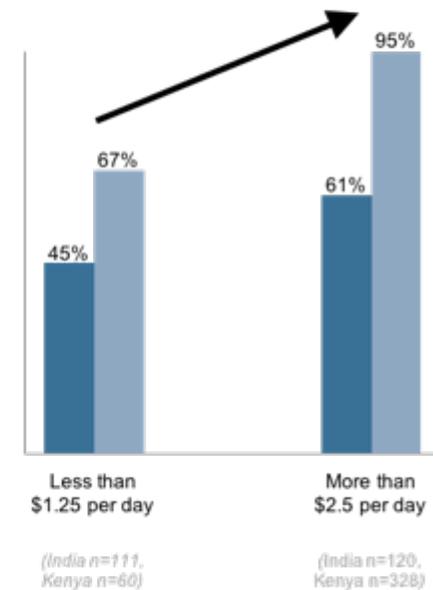
**Also, HHs with higher income levels tend to face fewer emergencies...**

Percentage of households who have faced at least one emergency<sup>1</sup> in the last 1 year  
Q. G10



**... and are more satisfied with their current financial situation.**

Percentage of households who are satisfied with their HH's financial condition  
Q. J3



■ Kenya ■ India

Note: (1) Emergencies include: Going hungry frequently (more than twice a month), Child sent home from school because of unpaid school fees/ pulling children out of school, Defaulted on repaying debt (instalments) when they became due, and Unable to pay for medical emergencies

### 2. Poor Access to Public Services and Safety Net

Many people we spoke with have **poor access to public services** and the public safety net like education, healthcare, and poverty assistance.

As a result, **people work to build a localized safety net** through personal relationships and their social network. They rely on one another to provide support and insurance through commonly experienced acute hardships.

---

**Phyllis** lives alone in Korogocho, a low-income neighborhood in Nairobi. She has two children and struggles to keep food on the table. Her eldest child is constantly sick and she cannot afford medical treatment. Phyllis said she sells second hand clothes like many other of the women in Korogocho, but business is tough and she can't go to friends or family for support both because she fears their judgement and is afraid she won't be able to repay. She uses very few financial services because she can't afford to and in many cases isn't aware they exist. Phyllis feels trapped, she doesn't know how to change her situation.



---

*“She’s always sick...There’s a clinic across the road, but I can’t afford to take her there.”*

- Phyllis, Korogocho, Nairobi, Kenya

---

### 3. Centrality of Social Networks for Financial Management

Across our sample, **social networks are at the core of most people's financial lives**. Most people we met built, maintained, and relied on social financial networks to manage their money. These networks are grounded in **personal relationships** and underpinned by **strong norms and expectations**.

The size and quality of these networks, as well as the degree to which they are **activated for financial interactions** largely determines the scope of a person's capacity for financial intermediation.

---

**Nachindra** lives in a sprawling low income neighborhood in Mumbai. He runs one of his father's two general stores. He's lived in the same neighborhood all his life, and their family knows most of the residents. Due to their extensive social network – they offer many people goods on credit and know hundreds of families – they are confident in their ability to draw on the community for loans and support in times of need.



*“We’re all in the same set-up, we know each other’s struggles. That’s why we work together and help each other.”*

– James, Korogocho, Nairobi, Kenya

## 4. Limits of Social Networks for Financial Management

Social financial networks are built on personal relationships and a sense of shared identity. As such, they are local and **limited in size and scalability**.

Social financial networks limited scale **constrains their ability to provide credit and insurance**, two of the primary reasons people maintain them.

Moreover, **exogenous factors** that acutely shock and chronically affect a community can quickly exhaust the networks credit and insurance capacity.

---

**Dagu and Ahilyabai** live in Khambale, a small village outside of Sinnar, India. They subsistence farm a small plot of land, rear goats on behalf of the community, and work day labor on nearby farms. Sinnar has experienced years of drought, and most farmers are struggling. Daggu and Ahilyabai, like many in their community, have no money to participate in *bishis* (ROSCAs) or *self-help groups*, and no access to credit. They are getting old, and hope their son can care for them in retirement, but they have little hope as he is also struggling with the drought.

---

*“Raising money here is difficult, even on interest. There are very few sources available.”*

– Daggu, 60, Farmer, Khambale

---



### 5. Marginal Use of Formal Financial Services

Formal services play a limited role in most people's financial lives, especially those who work in the **informal sector and small-scale agriculture**. Most use few, if any, and only do so intermittently.

However, people who work in the **formal sector**, earn **higher and more reliable incomes**, and have **attained higher levels of formal education** tend to use and rely more heavily on formal financial services.

---

**Richard** lives in Nyahururu, Kenya, where he farms, raises livestock, and provides agricultural consulting services to several *saccos* (cooperatives). Richard thinks bank fees are too high and terms for loans too restrictive. He considers money in the bank “dead.” Rather, he prefers *saccos* and *chamas* (ROSCA). He says money in *saccos* and *chamas* “works” for you because it builds credibility with fellow members and partners, getting you access to loans as well as financial support in times of need. Richard told us, “of course I can find guarantors for a loan, I’ve guaranteed so many.”

---

*“Bank’s terms and conditions do not favor the common man. Saccos and chamas do.”*

---

- Richard, Nyahururu, Kenya



## 6. Hybrid Behaviors and Multi-functional tools

Low-income people's **financial management strategies are holistic** and their **behaviors are deeply interlinked**. They value the multi-functional financial tools commonly provided through social networks, which **cut across traditional financial product categories**.

To get the most value out of limited financial resources, **people need their money to work for them in as many ways as possible**. If one can use a *chama* or a *bishi* (ROSCA) to put away money, often as an investment, while also cultivating credit and gaining access to valuable social insurance, then for many this is a much better value proposition than that offered by a no frills bank account or mobile wallet.



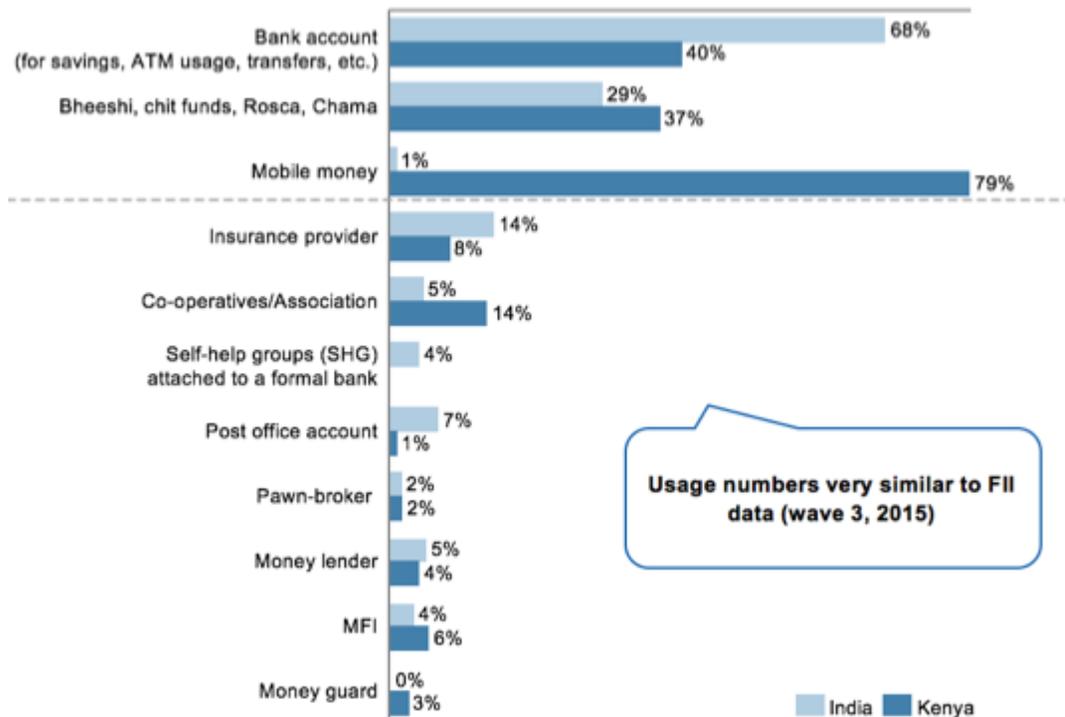
*“I’ve started a chama (ROSCA) that works like a sacco (cooperative). We all make regular deposits, and with a portion of it invest in a chicken rearing business.”*

- Abraham, Korogocho, Nairobi, Kenya

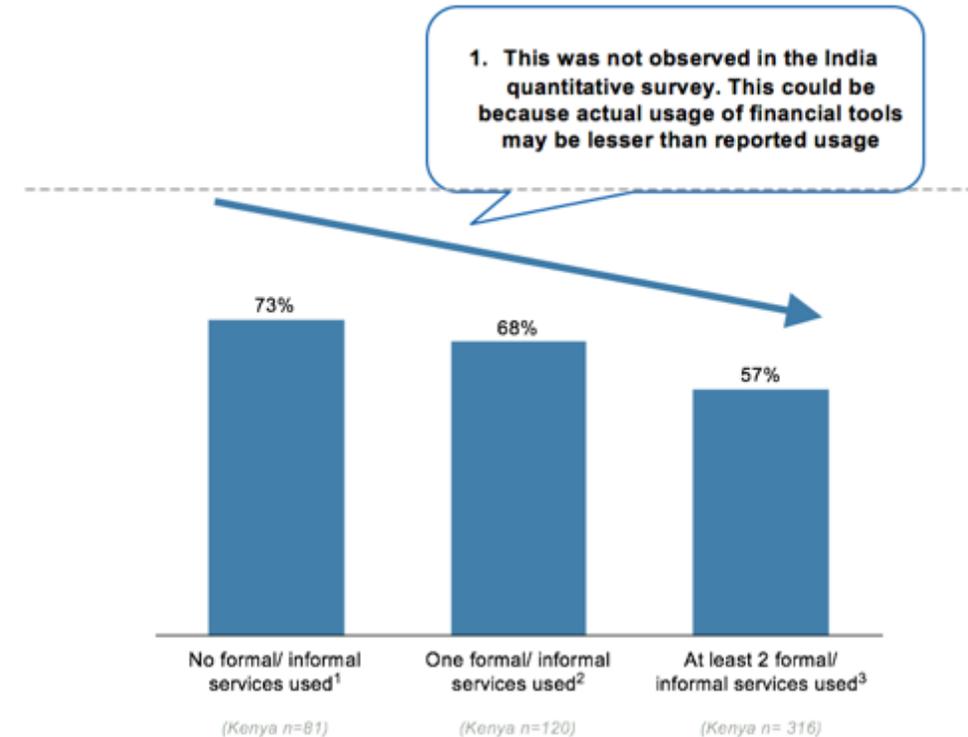
## Global Context | Hybrid Behaviors

**Diverse use of financial tools :** In Kenya and India, most households report using numerous financial tools. In Kenya, households that reported using more financial services also reported greater ease of raising emergency funds.

In Kenya and India, most households report using numerous financial tools  
(India n=562 , Kenya n=517)

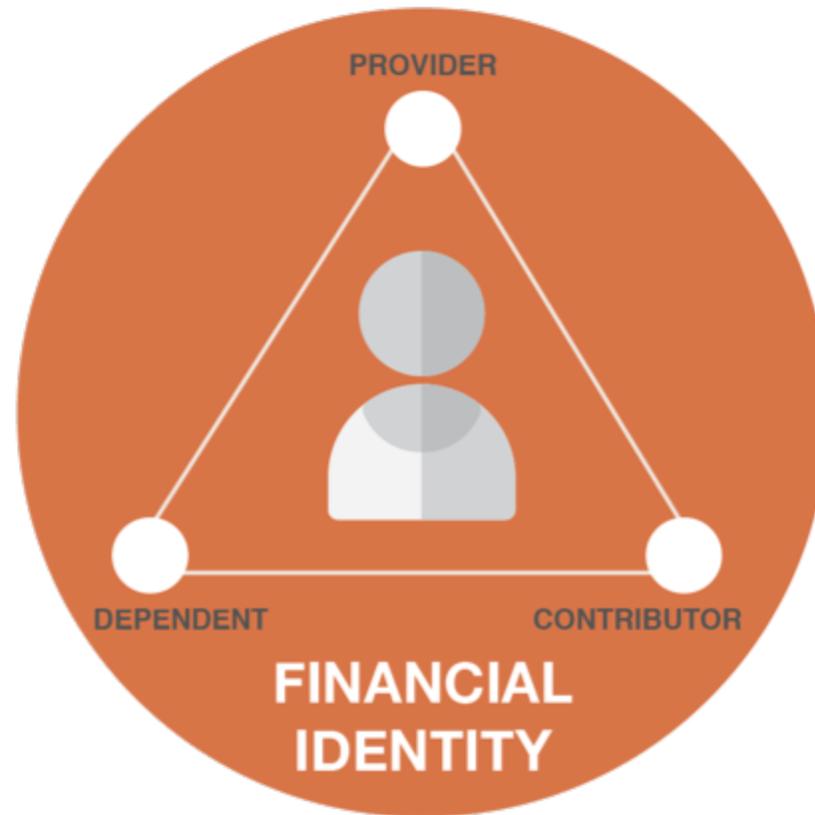


In Kenya, households that reported using more financial services also reported greater ease of raising emergency funds



# *Financial Identities*

# Behavioral Model | Financial Identities



## Behavioral Model | Financial Identities

### Financial Identities

While contextual indicators help us understand the constraints and opportunities that bound people's financial decisions, examining their financial identities can uncover their **motivations and aspirations**.

People often hold multiple financial identities – such as 'provider', 'contributor,' and 'dependent' – that cut across their values and attitudes. These identities are grounded in the **obligations** and **expectations** they carry in relation to others, and can vary **from relationship to relationship**. A person's financial identities comprise two major variables: the degree to which they **earn and share income** and the degree to which they **control or share financial management decisions**.

Examining people's financial identities within the context of key financial relationships helps to illuminate the major **drivers of their financial decisions**.

---

*“We decide everything together... Before we started the (shoe) business, we agreed we first had to save money to support the family in case it failed.”*

– Ruth & Michael, Kariobungi, Nairobi Kenya

---



## Behavioral Model | Financial Identities

Through our research, we observed **three financial identities** that people tended to hold within the context of **three salient categories financial relationships** (to family, to community, and to workplace)

### PROVIDER

---

Financial providers are the economic providers and/or financial decision makers upon which other's rely.

Example Identities :

- (1) Family Breadwinner:** the main earner and financial decision maker in the household
- (2) Community Leader:** acts as a trusted source of financial advice and support
- (3) Reliable Employer:** business owner, employer, and often a source of capital in the community

### CONTRIBUTOR

---

Financial contributors provide financial support and/or take part in financial endeavors within household and communities.

Example Identities:

- (1) Dependable Confidant:** supporter to the family and helps make financial decisions
- (2) Helpful Friend:** steady source of support in times of need
- (3) Ready Partner:** a willing co-investor and colleague in income generating activities

### DEPENDENT

---

Financial dependents rely upon other people's for economic support and/or they play a very limited role in the financial decisions that shape their lives.

Example:

- (1) Reliant Supporter:** counts on the family to provide for needs and manage finances, but helps with household tasks
- (2) Disadvantaged Neighbor:** relies on good will of others in times of need, and rarely able to provide support in return
- (3) Vulnerable Worker:** relies on single employer to meet all financial needs

## Behavioral Model | Financial Identities

### Phoebe & David, Nairobi, Kenya



Phoebe owns and operates a hair salon. She employs her sisters and **provides** most of her family’s income. Her husband David founded a legal aid organization, and is an elected community leader and an aspiring local politician. He contributes to household earnings and helps with financial decision making. Though they struggle to make ends meet, Phoebe and David’s community view them as **providers**, successful business people and local leaders to turn to in times of need. Consequently, David and Phoebe cannot easily rely on the community for loans.

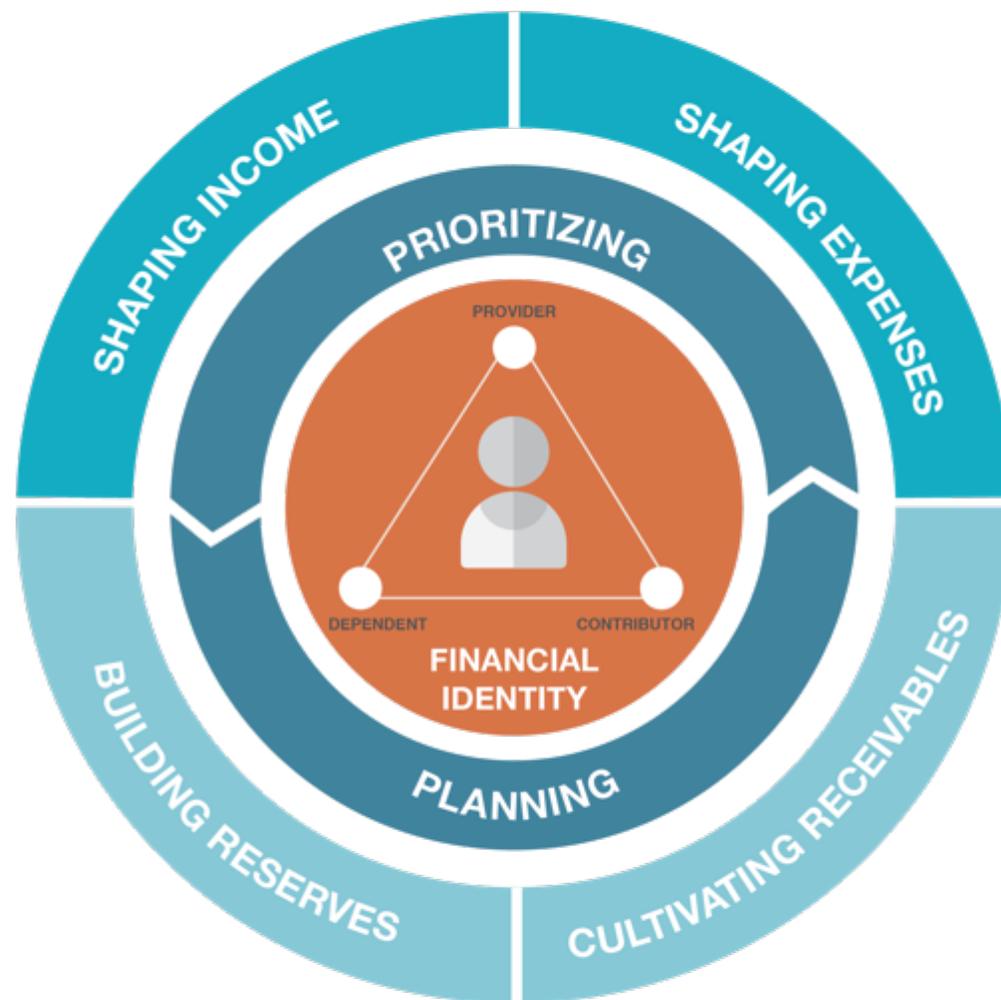
### Yogesh, Sinnar, India



Yogesh holds a masters degree in social work and is a field coordinator with a local agricultural NGO. He lives with his father, mother, and 3 brothers. Soft spoken and serious, he defers financial decisions to his father, **depending** on him to manage household finances. However, Yogesh **contributes** his earnings to the household, helping his family build a new home after a dispute with his uncle led to a traumatic family split.

# *Financial Behaviors*

# Model | Financial Behaviors



# 1. Prioritization

People have virtually unlimited **needs** and **aspirations**, yet finite financial resources. Whether deliberately or not, people prioritize the use of their financial resources to strike a balance between the two.

### **Financial priorities are constantly evolving.**

People's priorities shift as their social, economic, and financial realities change.

**Financial stress** often overwhelms people's ability to set clear and pursue clear priorities, and forces them to pare back to only their basic needs.

---

*“What would I insure?  
Everything is precious, nothing is permanent.”*

- Virginia, Nyahururu, Kenya

---

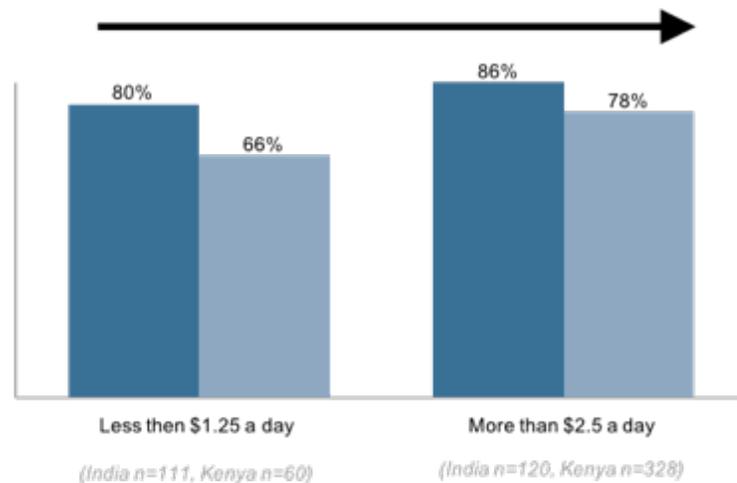


## Behaviors | Prioritization

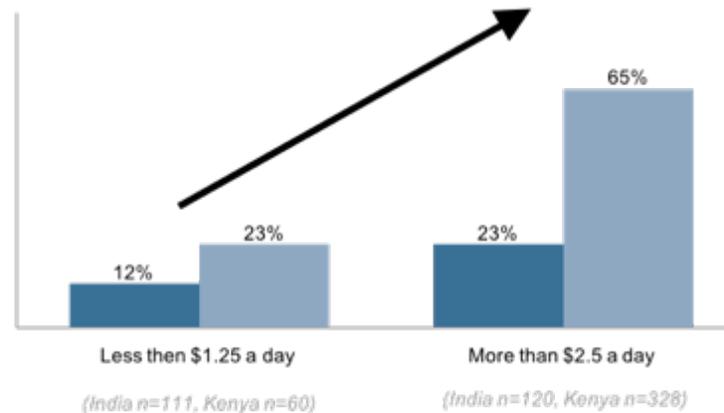
**Prioritization:** The majority of survey respondents reported that they prioritize for immediate needs such as food, shelter etc. However, respondents who reported lower income levels appear to have limited bandwidth to prioritize and plan for aspirational needs such as luxury purchases.

Percentage of respondents who 'strongly agree' or 'somewhat agree' with the following statement  
Q. 13

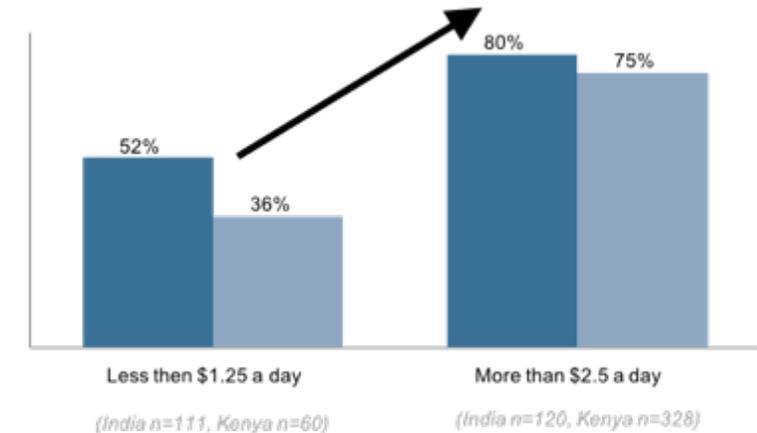
I plan my finances to cover basic needs (food, shelter, etc.)



I plan my finances for entertainment and luxury purchases



I plan my finances to grow opportunities and investments



Kenya India

Immediate

Aspirational

## Behaviors | Prioritization

We observed people pursuing a number of **prioritization strategies**. Sometimes they combined multiple strategies simultaneously.

Examples:

**(1) Treading water:** prioritizing yet struggling to meet basic needs

**(2) Investing in education and career building:** prioritizing generating future employment and earning opportunities

**(3) Investing in income growth:** prioritizing income growth over consumption and contingency planning

**(4) Investing in financial security:** prioritizing future spending by pushing money into the future

**(5) Growing living standards:** prioritizing increased consumption of goods and services to improve living conditions

---

***“The next time a (health) emergency happens, it won't be like this. I've already started saving.”***

- Shankar, Sinnar, India

---



## 2. Planning

Most people **plan** their finances. Whether their plan spans one day, one week, or one year, they deliberately shape their income, build reserves, and cultivate receivables to achieve their priorities.

People plan with **varying levels of complexity and concreteness**, employing a wide financial instruments.

**Long-term planning** improves people's ability to achieve their financial priorities, improves their resilience, and reduces their financial stress.

**Financial stress** reduces planning capacity by limiting people's attention to their most urgent needs.

---

*“If you do everything with a proper plan, nothing will be hard...What I’m doing today, I’m doing for tomorrow and for the future to come.”*

---

- Eunice, Nyahururu, Kenya

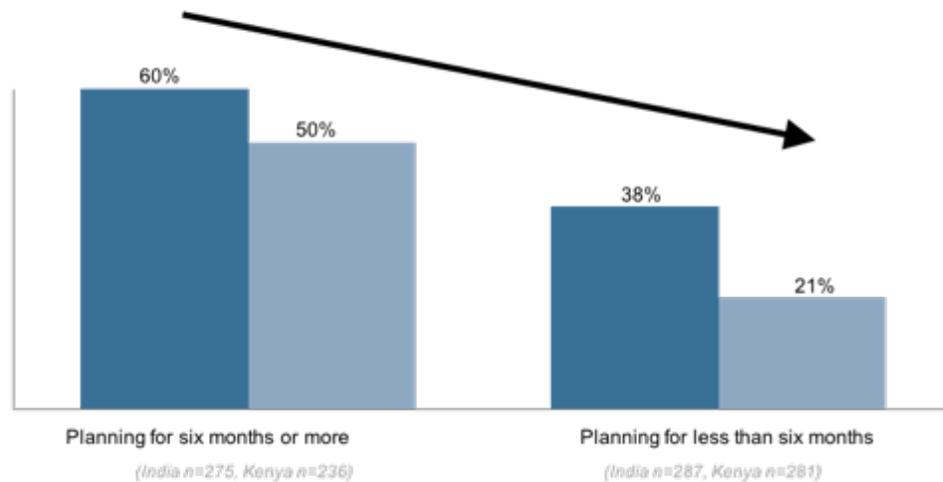


## Behaviors | Planning

**Planning:** Survey respondents who reported longer planning horizons are more likely to put away money for the future and more likely to be able to raise emergency funds.

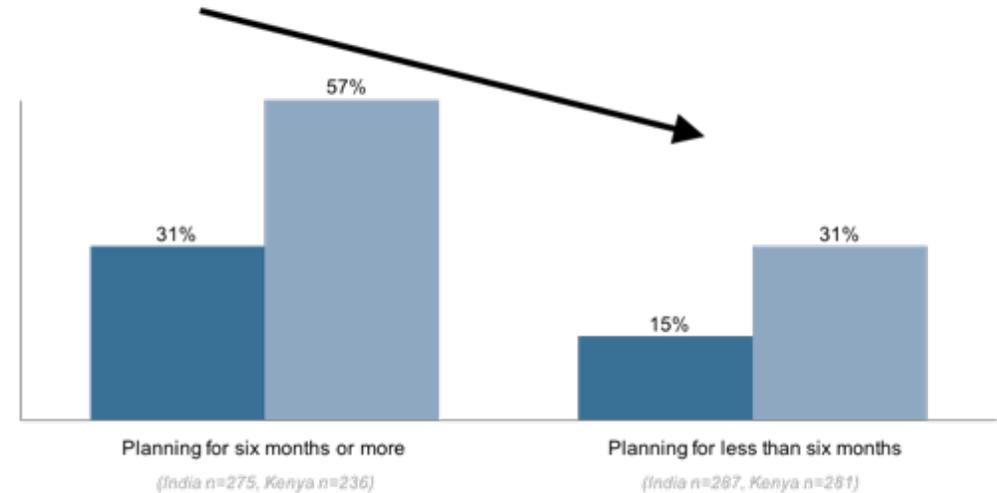
Households who plan for a longer period of time, are more likely to put away money for the future...

Percentage of households who put some money away (save)<sup>1</sup>  
Q. E2 by I2



... and are more likely to be able to raise emergency funds.

Percentage of households who find it "easy" or "somewhat easy" to raise emergency funds worth INR 5,000/ KSH 6,000  
Q. G5 by I2



Note: (1) Those who selected "I put away (save) whatever money is left over after expenses" or "I put away (save) regularly by putting money aside each day/week/month" when asked "which statement do you agree with the most"

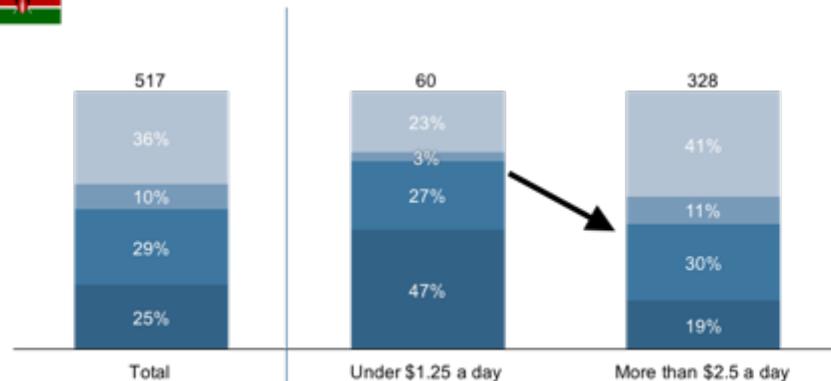
Kenya India

## Behaviors | Planning

**Planning:** 47% of survey respondents in Kenya earning less \$1.25 per day reported that they do not plan their finances, compared to 19% of respondents earning more than \$2.50 per day. We saw a similar trend in India.

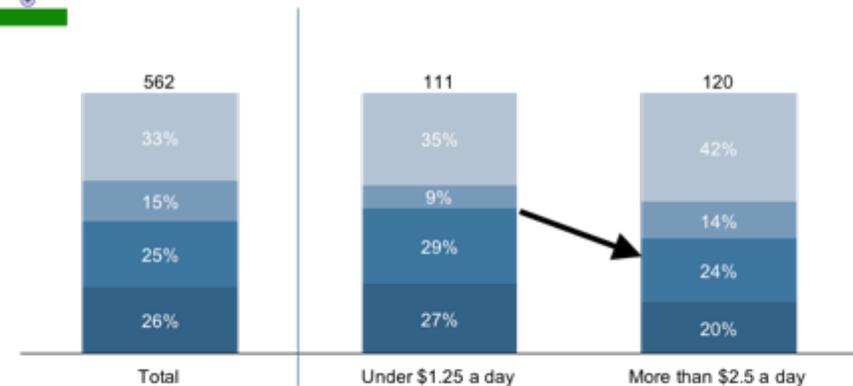
In Kenya, over 45% of households earning less than \$1.25 a day have not planned their finances...

Percentage of respondents who have planned their finances for the below mentioned periods of time  
Q. 12



... and in India, 30% of households have not planned their finances

Percentage of respondents who have planned their finances for the below mentioned periods of time  
Q. 12



One or more years  
 Next six months  
 Next one week or one month  
 Not planned

## Behaviors | Planning

We observed people **planning** their finances using a number of strategies that cut across their financial behaviors. Often they used multiple strategies simultaneously.

Examples:

- (1) Short-term** planning focused almost entirely on immediate needs
- (2) Automated** planning through obligations and heuristics to minimize decision points and the need for constant critical reflection
- (3) Deferred** or nascent planning reflecting wishful goals that are currently well out of reach and exercise limited influence over financial behavior
- (4) Targeted** concrete, and active planning with clear steps and objectives

---

*“We haven’t really thought about it [old age], but we’ll try to provide for ourselves, or maybe rely on our son...but he can’t really provide much, he’s in the same position as us.”*

- Ahilyabai, Dodi, Sinnar, India

---



## Behaviors | Prioritization

### Jane, Limuru, Kenya



*“I plan for my future, for my tomorrow. That's why I like investing.”*

#### PLANNING & PRIORITIZATION

Jane ran out of money for college in 2016. She feels like her friends left her behind, and her top **priority is to get back to school**. She says a degree is the first step in her **long-term plan** to start a day care. With it she can work and save to start the business. When we met her, Jane was working at a laundromat and using earnings to both cultivate crops through an investment *chama* with her friends and save in a sacco to qualify for a student loan. She supports her mother and pays her younger brothers school fees, which often sets back her plans.

### Jayashree & Kailas, Sinnar, India



*“I've been running it (household finances) the same way as my father did – there is no difference.”*

#### PLANNING & PRIORITIZATION

Jayashree and Kailas farm, run a small agricultural supply shop, and herd goats. Their top priority is to **secure their income** and keep their son in private school. They also hope to buy a car within the next few years and renovate their house within five. They manage their business and household finances together, and so **automate many financial decisions** to keep things as simple as possible. They use **heuristics** passed down by Kailas' father, who farmed and managed a bank branch.

### 3. Shaping Income

**Income** is the money people earn through work and investments. It is most people's primary source of financial capital.

People **shape income** to meet their needs and pursue their aspirations. They work to determine the size and timing of their income, and improve its reliability to better cover their expenses.

Examples:

- **(1) Growing a single source of income by** focusing effort and resources on one income generating endeavor
- **(2) Cultivating multiple sources of income** to generate more income and hedge against risk of any one failing
- **(3) Smoothing income** over time by pushing current earnings into the future and /or borrowing against future earnings to cover future consumption expenses



*“One day I want to have a high tech kitchen, it will be a big investment, but it will create a huge return. This is my dream.”*

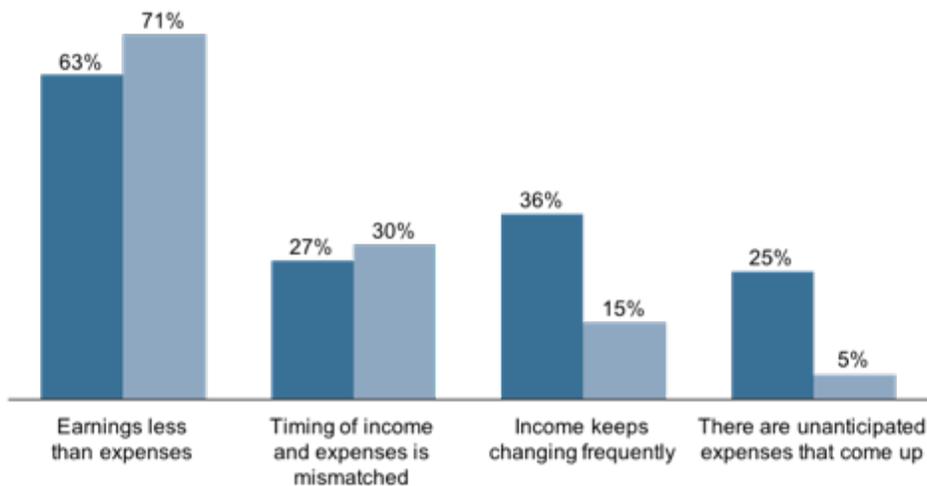
- Vidya, Ghatkopar, Mumbai, India

## Behaviors | Shaping Income

**Shaping Income:** Survey respondents reported that low, poorly timed, and unreliable incomes are the primary challenges to meeting basic needs. They also reported that they prefer to use their own savings and taking loans/gifts from friends to cover shortfalls over formal loans

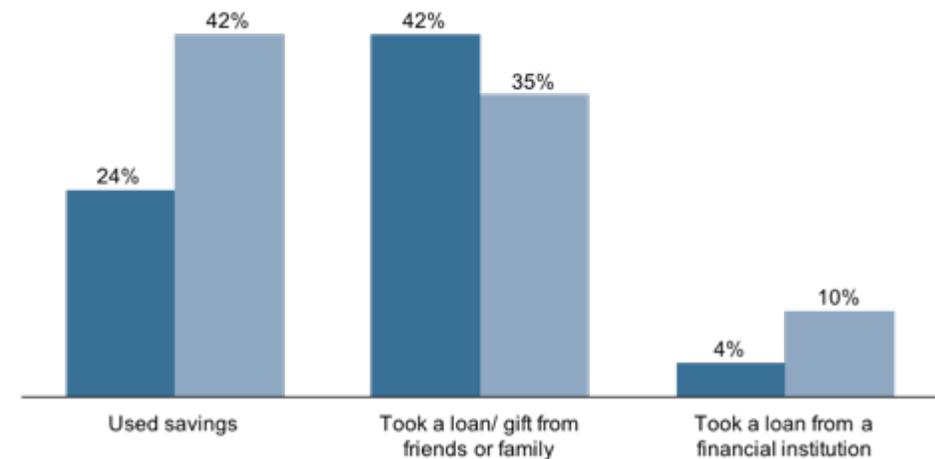
Key reasons why households cannot meet basic needs include earnings less than expenses, mismatched timing of income and expenses and high income volatility

Percentage of households who picked the following reasons for not being able to meet basic needs<sup>1</sup>  
Q. C2



To smooth their incomes, households use their own savings or take money from friends and family to cover for basic needs

Percentage of households who used the following sources when they couldn't meet basic needs<sup>1</sup>  
Q. C3



Note: This question was asked to those who picked “never”, “rarely”, or “sometimes” even once when asked “please indicate the extent to which you could not meet basic needs such as afford food/ water, shelter, ....etc.”; India n=411, Kenya n=416

■ Kenya ■ India

### 4. Shaping Expenses

People **shape expenses** by manipulating the size and timing of their financial outflows to better match their expected income. Many low-income families run small businesses, and manage both household and business expenses together.

Examples:

- **(1) Earmarking** specific income flows to expense outflows
- **(2) Obligating money** to discrete categories of expenses, especially through social financial networks
- **(3) Budgeting and tracking** expenses
- **(4) Eliminating expense** categories wholesale
- **(5) Producing food** for household consumption in order to eliminate it as a regular expense

---

*“I write my expenses down always. Before I go to the supermarket I write down what I’m going to spend.”*

---

- Jackie, Limuru, Kenya

## Behaviors | Shaping Income & Expenses

### Jane, Limuru, Kenya



*"I'm in a chama with my cousins. We make deposits and use the money to cover our household expenses."*

#### SHAPING INCOME & EXPENSES

Jane is **cultivating multiple sources of income** to meet her priorities. Earnings from the laundromat cover most of her expenses and generate most of her savings. She's **obligated money** to cover household expenses through a second *chama* with her cousins. Jane considers this money "savings," which are "fixed" for a specific use. She's also has **earmarked future earnings** from agricultural investments to cover tuition.

### Jayashree & Kailas, Sinnar, India



*"Whatever you earn you take back money to pay household expenses, or it goes to invest in the business."*

#### SHAPING INCOME & EXPENSES

Jayashree and Kailas maintain **multiple sources of income** to strike a balance between income growth and security through diversification. Their agricultural supply shop provides most of their earnings. They usually break even on farming, though it provides food security and **important cash infusions** during bumper years. They  **earmark** specific income streams to expense categories. Earnings from the shop cover their sons tuition and general household expenses. They consume a portion of their harvest to **eliminate food expenses**.

## 5. Building Reserves

**Reserves** are a person's net wealth (including all categories of assets), unused but available labor potential, and social capital.

People **build reserves by storing value** in a manner that balances their unique needs for financial liquidity, security, and returns.

### FOUNDATIONAL RESERVES

People who manage to establish some level of **foundational reserves** are better positioned to effectively manage their finances, pursue aspirations, and deal with the unexpected.

Establishing a foundational reserve often is a **transformational moment** in a person's financial life, instilling self-confidence and opening up many new social, economic, and financial possibilities.



---

*“The pool hall supports all my other businesses ...it always brings in money.”*

– Joseph, Nyaururu, Kenya

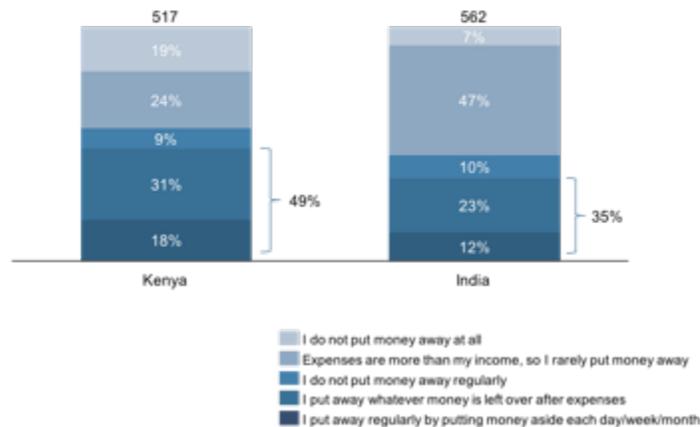
---

## Behaviors | Building Reserves

**Building Reserves:** Survey respondents who reported putting some money away also reported greater satisfaction with their current financial condition; those who reported putting away money for a longer period of time tended to report greater security in their financial future.

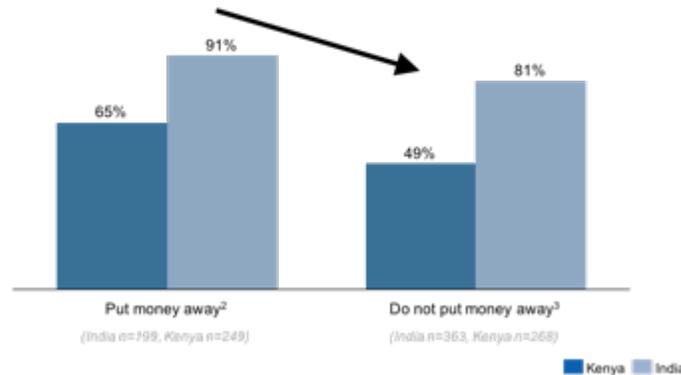
Over 35-50% of households in India and Kenya respectively, put at least some money away ...

Percentage of households who agreed with the following statements  
Q. E1



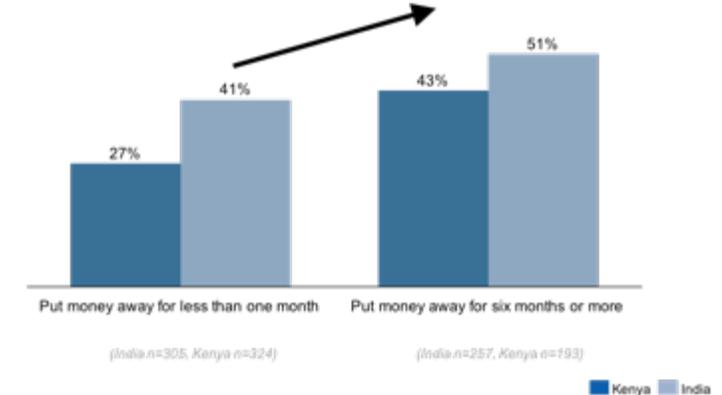
... and those who do put some money away, tend to be more satisfied with their household's current financial condition.

Percentage of households who are satisfied<sup>1</sup> with their household's financial condition  
Q. J3 by E1



... and those who put money away for a longer period of time tend to feel that they are securing their financial future.

Percentage of households who selected 'very well' or 'completely' for the statement "I am securing my financial future"  
Q. J3 by E4



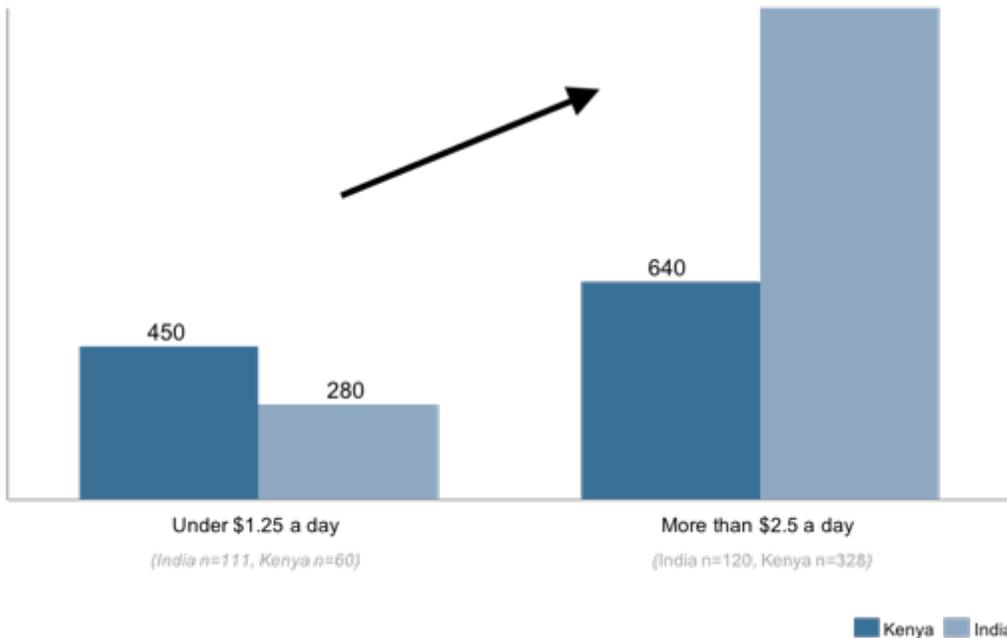
Note: (1) Those who selected 'Somewhat', 'Very well', or 'Completely' when asked how satisfied they were with their household's financial condition'; (2) Those who selected 'I put away (save) whatever money is left over after expenses' or 'I put away (save) regularly by putting money aside each day/week/month' when asked the question: "Which statement do you agree with the most"; (3) Those who selected "I do not put money away at all", "My expenses are more than my income, so I rarely put money away", or "I do not put money away regularly" when asked the question: "Which statement do you agree with the most"

## Behaviors | Building Reserves

**Foundational Reserve:** Survey respondents who reported higher income also reported a larger set of reserves, as well as a greater ability to raise money and more self-reliance during times of need.

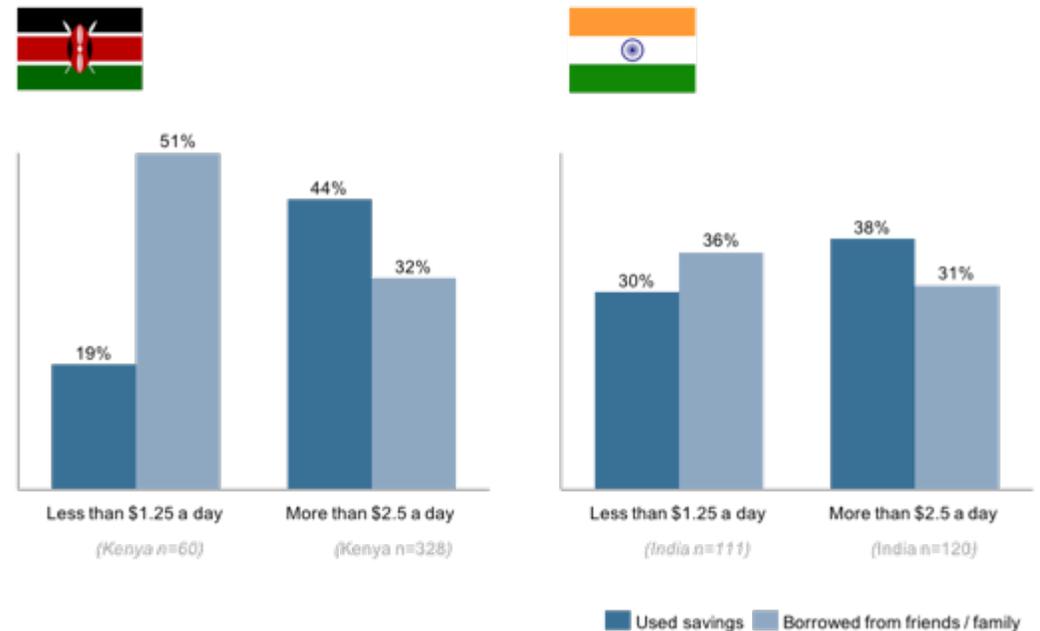
Households with higher income are likely to have a high level of reserves and receivables potential...

Average money a household can raise<sup>1</sup> in times of need  
In USD, Q. G6



... and with increasing income, people become more self-reliant as they have greater reserves

Percentage of households who used their own savings, or borrowed money from friends and family when faced with a shock  
Q. G2



Note: (1) The amount people can raise in one week, using up all their, selling all their assets and borrowing or taking money from friends, family, community, etc. (this is a proxy to identify a person's reserves and receivable potential)

## Behaviors | Building Reserves

We observed people **building reserves** in a number of ways:

Examples:

- (1) **Ad hoc savings and investments** in diverse instruments/assets as money becomes available
- (2) **Obligating money** for future use through social financial networks
- (3) **Automating savings** through formal accounts
- (4) **Investing in working assets** that earn income (e.g. livestock, motorbikes.)
- (5) **Investing in financial assets** that earn returns (e.g. interest bearing savings and loans to others.)
- (6) **Locking away value in goods or inventory** to secure future household consumption and income
- (7) **Making social contributions** to that build social capital and deepen the social safety net

---

*“I saved 30 rupee a day for a year. When I saw how much I saved, I could not believe it. For the next 10 years I used a daily money collector to save for this store.”*

---

- Shabana, Mumbai, India



## 6. Cultivating Receivables

**Receivables** are the financial resources a person can obtain, but does not currently hold. This includes all forms of formal **and informal credit**, and contributions from their social network in times of need.

People **cultivate receivables** by growing and securing income, building reserves to establish formal and informal credit, and making investments in the social safety net provided by their network

### **SOCIAL SAFETY NET**

The **social safety net** pools risk and provides people limited support in select times of **acute need**. Its strength is related to a person's status and the size and quality of their social network.

---

*“What a community promotes depends on its values; here contributing to a wedding is not a priority because there are children out of school and families going hungry.”*

---

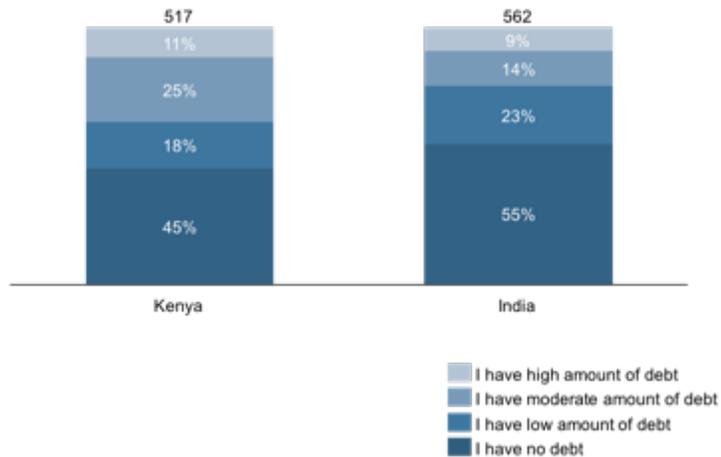
- Ruth, Nairobi, Kenya

## Behaviors | Cultivating Receivables

**Cultivating Receivables:** Nearly half of all survey respondents reported holding some debt, illustrating its importance in financial management. Respondents who reported good borrowing behavior found it easier to raise funds, yet of those who reported holding debt, 30% in Kenya and 70% in India found it difficult to manage.

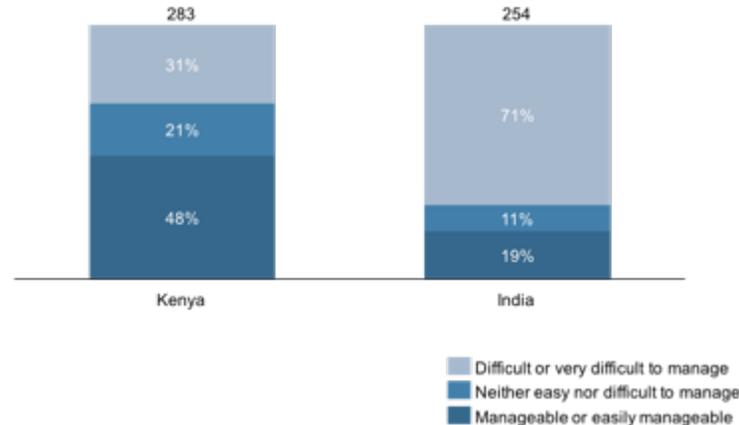
~50% of households had some form of debt on them...

Percentage of households who have debt  
Q. F4



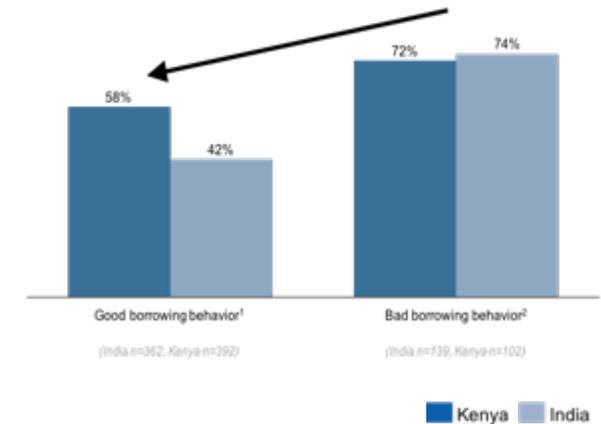
... and out of these, more than 30% of households found their debt difficult or very difficult to manage

Percentage of households who have the following debt situation  
Q. F5



Percentage of households who find it difficult to raise emergency funds worth INR 5,000 / KSH 6,000

Percentage of households who find it difficult to raise emergency funds worth INR 5,000 / KSH 6,000  
Q. G5 by F6

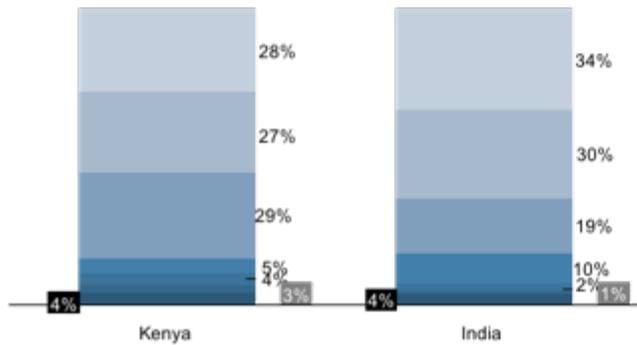


## Behaviors | Cultivating Receivables

**Social Safety Net:** More than 80% of survey respondents reported that they can get support from friends, family, and community in times of need, and 70% have done so in the past 12 months.

Over 80% of households feel they can get support from friends/ family/ community in times of needs...

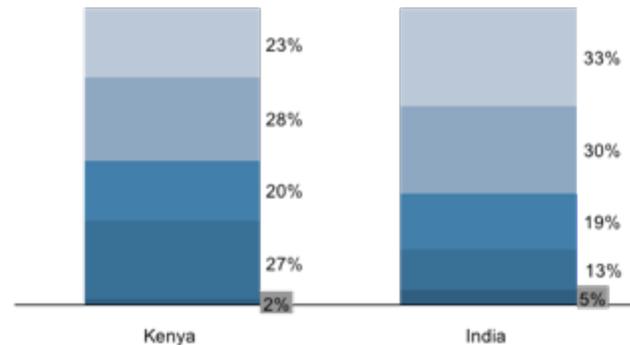
Percentage of households who picked the following options when asked "Select which of the following statements is most applicable to you?"  
Q. K2



■ Can get support for large financial needs  
■ Can get support for moderate financial needs  
■ Can get support for small financial needs  
■ My friends/ family/ community are too poor and cannot provide support  
■ I cannot ask for support  
■ I do not need support  
■ None of the above

... and 70% of people have provided or taken support from friends/family/community in the last 12 months

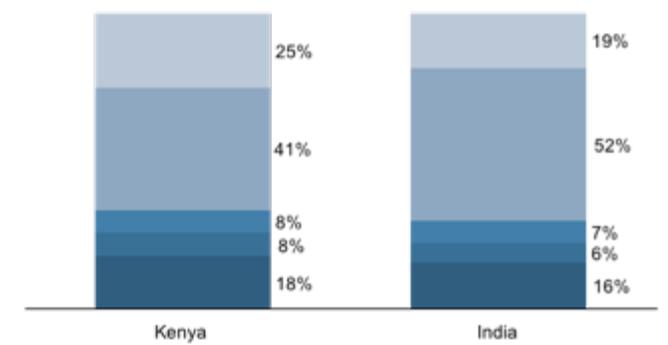
Percentage of households who agreed with the following statement: "In the last 12 months...."  
Q. K1



■ The financial support I provided was more than what I received  
■ The financial support I provided was less than what I received  
■ The financial support I provided was the same as what I received  
■ I did not provide or receive any financial support  
■ DK/Refuse to answer

Also, over 65% of households can receive support from friends/ family who live in other towns/ cities/ villages

Percentage of household who picked the following options when asked: "In times of need, I can receive financial support from friends / family who live in other towns / cities / villages"  
Q. K3



■ Strongly agree  
■ Somewhat agree  
■ Neither agree nor disagree  
■ Somewhat disagree  
■ Strongly disagree

Note: India n=562, Kenya n=517

## Behaviors | Cultivating Receivables

We observed people **cultivating receivables** in a number of ways:

Examples:

- (1) Cultivating formal lines of credit** by saving with banks, cooperatives, MNOs, etc.
- (2) Cultivating informal lines of credit** by saving and investing with social financial networks
- (3) Cultivating social safety net** by lending and gifting to family, friends, and neighbors

---

*“The money lender is the only one who gives us credit, not even our family. We depend on him.”*

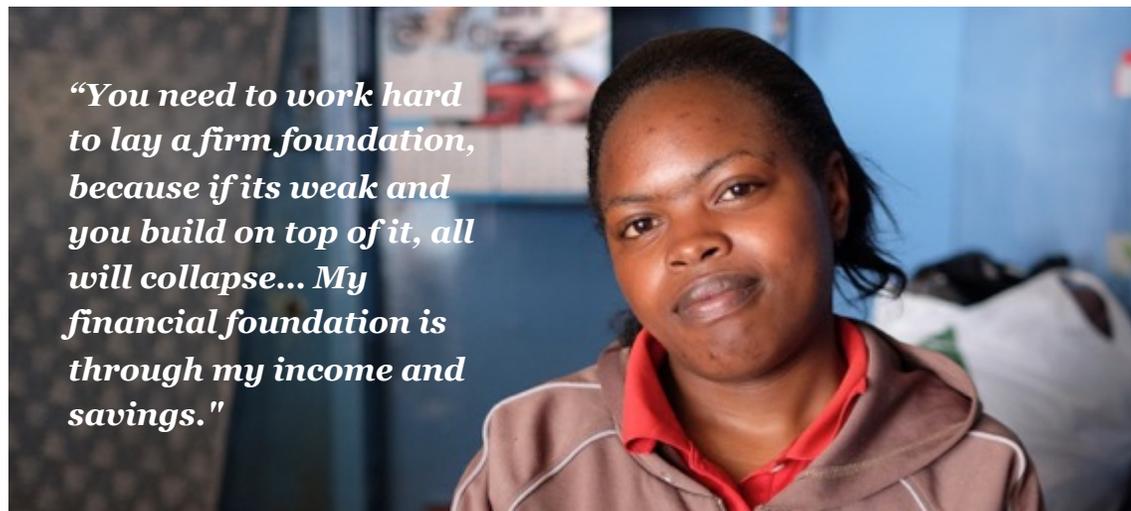
- Shanti, Mumbai, India

---



## Behaviors | Shaping Income & Expenses

### Jane, Limuru, Kenya



*“I felt rich and appreciated...I never even asked, I just told them the situation.”*

#### **BUILDING RESERVES & CULTIVATING RECEIVABLES**

Jane works to build reserves by **obligating money** to two *chamas*, **investing in agricultural assets**, and making **ad hoc savings** in her sacco when she has extra money. She considers money she allocates for investment as “flexible” and is comfortable using it for plan A, B, C, or any contingency including shortfalls. Jane maintains two *chamas* in part because she knows her **regular participation** and the **social contributions** she provides members gets her access to loans and insurance from the group. However, *chamas* cannot meet all of her needs, so she’s **building formal credit** with a sacco to qualify for a student loan.

### Jayashree & Kailas, Sinnar, India



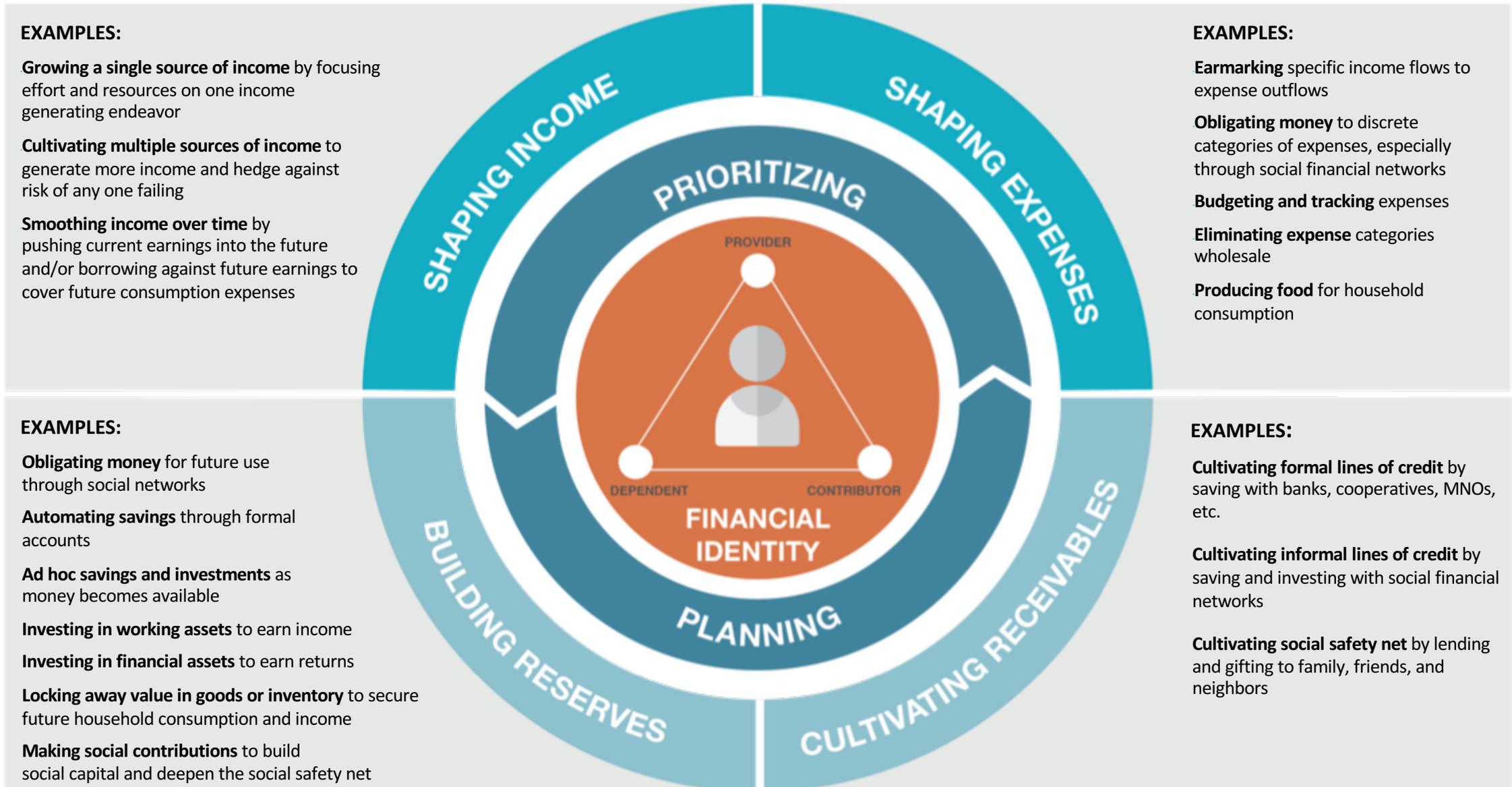
*“If we have a marriage expense we give an advance. At festivals we give gifts. In a dire situation, the whole village will help out.”*

#### **BUILDING RESERVES & CULTIVATING RECIEVABLES**

Following Kailas’ father’s example, they **save all profits in bank and cooperative accounts**, strictly reserving this money to finance the family’s businesses and **build credit for auto and home loans**. Jayashree makes regular small **deposits to a community bishi** and self-help group, which largely cover household expenses and **helps in emergencies**. However, **they don’t rely on their social network for loans**, because the money available is small and invites peers into their private financial matters. Instead, they build formal credit and use multiple wholesalers to stock their shop on credit.

# *Model / Overview*

# Behavioral Model | Overview



## Behavioral Model | Personal Profile

---

*“With more income, I could support more loans to further expand my business...this season I can only support two.”*

- Richard, Nyahururu, Kenya

---

### Context

Richard lives in Nyahururu, a fertile area in central Kenya where he grows maize and keeps dairy cows, goats, and chickens. Richard also cultivates and sells seeds during low season, and provides technical training on animal husbandry through an extensive network of agricultural cooperatives across the region. He has many aspirations for the future, some grand and distant, others much more measured and achievable, but all are linked to his core business agricultural business.



## Behavioral Model | Personal Profile

### **Financial Identity** - *"I live up country, but my mind is not upcountry."*

Richards primary financial identities are **provider** and **contributor**. He is the primary breadwinner for his family, and also provides income for the many seasonal day laborers he hires to help him work his land and herds. However, through his membership and technical consulting with local cooperatives and participation in multiple *chamas*, he is a financial contributor to his social network.

### **Behavioral Profile**

#### **PRIORITIZATION**

He prioritizes **income growth** and long-term **investments to secure his finances**. Though he has many financial aspirations, he is careful not to overstretch.

#### **PLANNING**

He prides himself on his forward thinking and **methodical long-term financial planning**. He hedges, and creates short and long-term goals to measure his financial performance.

#### **SHAPING INCOME**

He **cultivates multiple sources of income**, helping him simultaneously grow and smooth income throughout the year, while mitigating risk. He relies on credit to grow his income.

#### **SHAPING EXPENSES**

He **budgets and tracks** his expenses to insure his household needs are met and he has adequate cash flow to support his businesses

#### **BUILDING RESERVES**

His primary strategy for building reserves is both to **invest in working and financial assets**, through which he grows his businesses and maintains liquid assets

#### **CULTIVATING RECEIVABLE**

He **cultivates formal lines of credit** through his cooperative, and **strengthens his social safety net** through participation in multiple *chamas*

*Model / Applications*

## Model | Applications

**We have begun applying the behavioral model to a number of projects and are exploring new opportunities to use it to optimize existing financial services, drive new service innovation, and deepen our appreciation of the impact of finance on personal well-being among the poor**

---

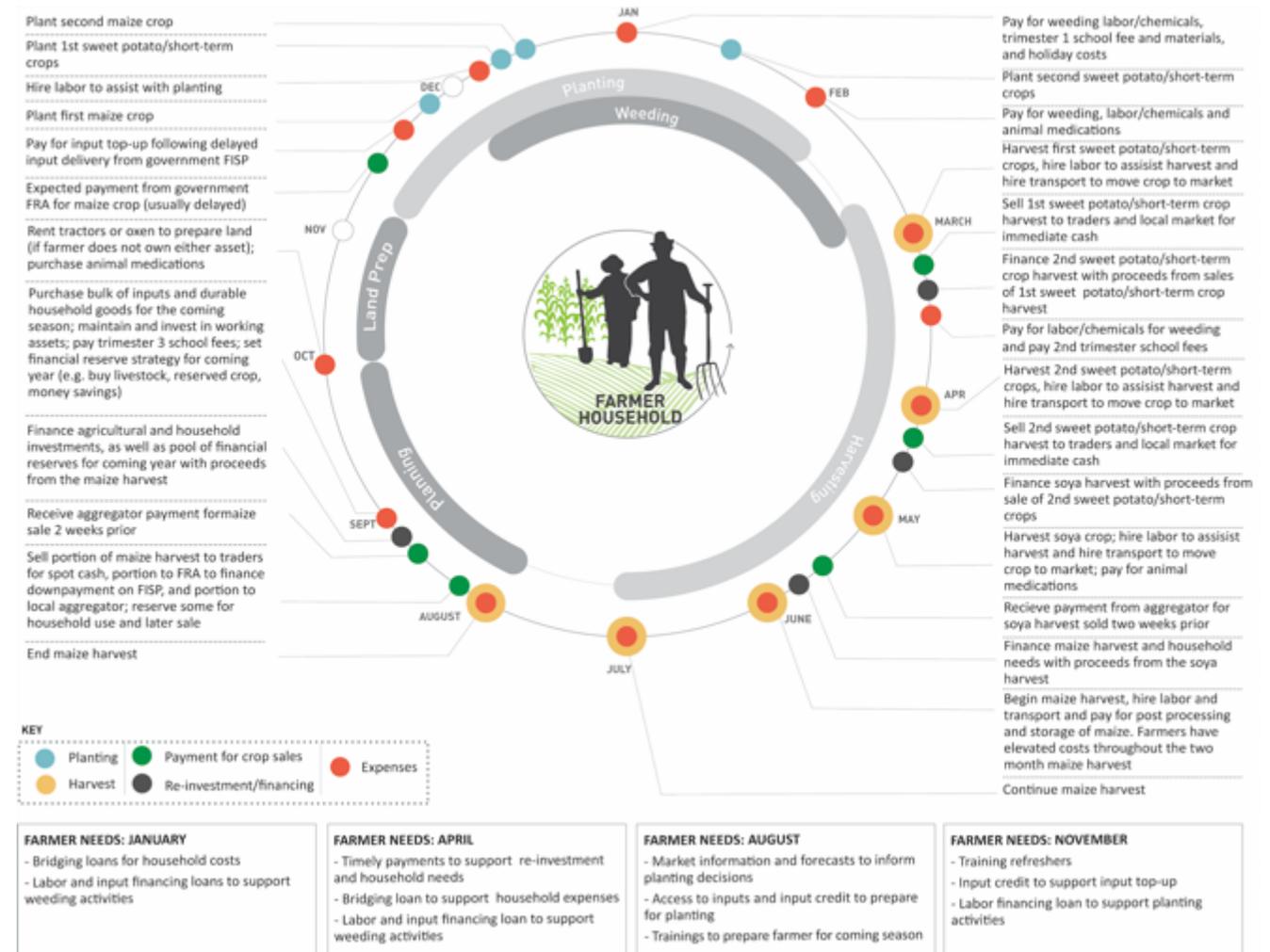
### **Potential Applications:**

- Hybrid savings, credit, and insurance products
- Integration of services with social networks
- Linking social networks through service offerings to increase credit and pool risk
- Design of new socially based incentive models
- Behavioral segmentation to identify most valuable customers
- Passive and active strategies for timely customer engagement
- Identification of key moments of need when small amounts of information or credit could make a huge difference

## DIG applied the financial health framework to rapidly analyze small-holder farmer financial management strategies in Zambia

Over the course of two weeks, we used the model to run a **behavioral assessment of small holding farmers** financial lives. We examined the challenges and opportunities that shape farmers financial decisions, assessed their priorities and planning strategies, and mapped their income and expenses through the year, paying close attention to their reserve and receivables strategies.

We identified the SHF's major financial challenges and needs throughout the season. To help farmers improve productivity, we designed a comprehensive service platform that addresses these needs by extending **flexible credit integrated with savings and insurance**, establishing **market linkages** with buyers, and facilitating **timely and transparent payments**.



## Applications | Behavioral Segmentation

**Leveraging the breadth of insights we have generated across our financial inclusion portfolio, we created a set of personas based on the financial behaviors framework outlined here Behavioral segmentation allows us to identify compelling use cases for targeted market segments grounded in consumer motivations and behaviors, rather than demographics or assumed needs**

**Example:** DIG recently conducted a behavioral segmentation of consumer mobile and DFS usage in India. We built a persona model and sized the resulting behavioral segments. For each segment, we identified targeted use cases and recommendation for driving adoption, early and sustained use, and troubleshooting.



### Targeted Recommendations | Collaborators

**Summary description:** collaborators live in close and mutually-supportive financial relationships within their communities

**Segment Size:** 185 – 250 million (India)

