Zambia Financial Diaries: Managing Money in the Face of Risk and Uncertainty

fsd Zambia
Expanding Financial Inclusion

MFO
microfinance opportunities

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ACRONYMS

COV	Coefficient of Variance
FSDZ	Financial Sector Deepening Zambia
FSP	Financial Service Provider
MFO	Microfinance Opportunities
MNO	Mobile Network Operator
PPI	Progress out of Poverty Index
ZMW	Zambian Kwacha

GLOSSARY

Associate	An individual the respondent knows but does not consider a friend and who is not a member of their family. Shopkeepers, cashiers, and moneylenders are examples of associates.
Business Expenditures	Business expenditures are a subset of outflows and refer to any expenditure on the purchase of goods or services that the respondent explicitly identified as having a business purpose. Can also be referred to as business spending.
Cash gift	A transfer of money from one individual to another outside of the household (see definition of intra-household transfer for definition of transfer within a household). A cash gift involves **no** explicit sale/purchase of a good or service in return and **no** explicit expectation of a return of the money.
Dependent	Dependents include individuals who: 1) earned no income during the study period and relied on intra-household transfers to cover any expenses; or 2) who earned some income from the sale of goods or services but it was less than what they received in the form of intra-households transfers
Farmer	Farmer is a livelihood category used in the report. The farmer category covers smallholder farmers who are individuals: 1) whose main source of income during the study period was from the sale of produce (fruits, vegetables, grains, nuts) that they grew on land that they owned or rented and tended; 2) whose main source of income was from the sale of livestock, which they reared, including chicken, pigs and goats; or 3) whose main source of income was a combination of 1) and 2).
Financial Network	This refers to all of the different people or organizations with whom a person may perform a financial transaction.
Financial Service	A transaction involving the use of a financial tool (savings, credit, transfer, or insurance) where the tool in question is provided by a Financial Service Provider, which can either be informal or formal (see below for definition of Financial Service Provider and the distinction between a formal and informal service provider).

Financial Service Provider (Formal and Informal)	A financial service provider is an individual, other than a family member or a friend, or an organization that provides a financial service. Informal service providers are individuals or organizations that the Government of Zambia does not regulate or supervise, excluding services provided by family and friends or home based savings. Formal financial service providers are individuals or organizations that the Government of Zambia regulates and supervises.
Financial Tool	A financial tool is a tool people use to manage their money, irrespective of who provides that tool. For the purposes of this study financial tools are: savings, credit, transfers, or insurance.
Formal Employment	Formal employment is a livelihood category used in this report. It refers to all employment situations where the employee receives a salary or wage from an organization in the formal economy—that is they received a payment from an organization that is registered to pay taxes to the state (teachers, government employees, miners, firefighters, security guards, etc.). We categorized a respondent as being in formal employment if the main source of their income during the period of the study was from formal employment.
Formal Financial Service	A service offered by a formal financial service provider.[1]
Home Savings	Money an individual keeps at home. This can include keeping short-term, "cash on hand" that is left over at the end of the week but is quickly spent the following week, or longer-term savings that the individual deliberately accumulates. Often the literature on money management refers to these types of savings as "mattress money" in that people keep this money "under their mattress" at home.
Household Expenditures	Household expenditures are a subset of outflows and refer to any expenditure on the purchase of goods or services that was not explicitly stated as having a business purpose. Can also be referred to as household spending.
Income	Income is any cash or electronic inflow that the respondents either generated through the sale of goods or services or received in exchange for their labor. We also use earnings to mean the same thing.

[1] For our definition of formal and informal transactions, we drew from those used by the recently completed FinScope Zambia 2015.

Inflow	A type of transaction that involves money flowing into the hands of the respondent. These include all sales, wages, salaries, cash transfers received, withdrawals from savings, loans received, loan repayments received, and insurance payouts received.
Informal Financial Service	A service offered by an informal financial service provider.
Informal Labor Services	Informal labor services is a livelihood category used in this report. It refers to all informal labor services regardless of the basis of their payment—hourly, salaried, or piece work, and regardless of the skill level—unskilled or skilled labor such as carpentry, borehole maintenance, barbering/salon. We categorized a respondent as earning their livelihood from informal labor services if the main source of their income during the period of the study was from the sale of labor services.
Intra-Household Transfer (IHT)	A transfer of money from one member of a household to another. For example, a husband gives his spouse money to go buy groceries. An IHT is different from a cash gift-see below.
Lump Sum	A sum of money which is unusually large for the individual in question and which can serve a number of purposes, such as buying an asset, purchasing business stock, buying items in bulk, paying for an event, responding to an emergency, etc.
Micro-Retail Businesses	Micro-retail businesses is a livelihood category used in this report. It refers to all businesses whose owners are individuals whose main source of income during the period of the study was from the sale of durable and perishable goods at a road stand, market stall, or from a storefront. This includes those who earned the bulk of their money from rentals. It does NOT include farmers who sold farm produce or livestock they grew or reared themselves.
Outflow	A type of transaction that involves money flowing out of the hands of the respondent. These include all purchases of goods and services, cash transfers given, deposits into savings, and loans given, loan repayments made, and insurance premia paid.
Transaction	Includes all sales and purchases, income earned from informal or formal labor, use of financial tools, and exchanges of in kind goods.

EXECUTIVE SUMMARY

In 2014, Microfinance Opportunities (MFO) was commissioned by Financial Sector Deepening Zambia (FSDZ) to implement the Zambia Financial Diaries, a year-long study that examined how low-income individuals in Zambia managed their financial lives. A team of field workers interviewed 355 respondents on a weekly basis, collecting data on all goods or services that they bought, sold, or traded; the financial tools they used; and whether any important events occurred in their lives that week. In addition, MFO used cross-sectional surveys and in-depth interviews to understand respondents' attitudes toward asset building, risk management, and financial service providers.

The respondents lived in four provinces in Zambia—Copperbelt, Eastern, Lusaka, and Western Provinces. Sixty percent of the sample was female, and the average age of the sample was about 38 years old. The most common way in which respondents earned money was through the management of a micro-retail business, and about 60 percent of respondents reported living in a household where at least one person was farming. A summary of the major findings follows.

Financial exclusion:

- Most respondents in the sample rarely if ever used formal or informal financial services. Using the FinScope definition of financial exclusion,[2] we found that 41 percent of our sample was financially excluded, having used no financial service throughout the study. Another 16 percent of our sample only transacted with a financial service provider (FSP) once or twice per year.
- Respondents' preferred financial tools were saving (in the home) and cash transfers (with friends and family).
- In cases where respondents did use formal or informal financial services, they tended to use a variety of different providers. As the intensity of their use increased, they did not shift from informal financial services to formal financial services. In other words, respondents who used formal financial services also used informal financial services; the use of the former did not displace the latter.
- In-depth interviews with 32 respondents revealed two major themes that explain why respondents did not use financial services.
    - First, respondents expressed a strong distrust of financial services. Specifically, respondents did not always trust service providers to act in their best interests, and respondents did not always trust their own community members to act responsibly.
    - Second, respondents' views showed that they operated on very short time horizons. Respondents focused more on living week-to-week than they did on planning for the future.

Cash flow management and lump sum purchases

- Nevertheless, respondents came across as savvy economic actors in the in-depth interviews, having clear strategies for how to generate earnings in a complex and uncertain environment.

[2] FinScope defines financial exclusion as, "not using any formal or informal financial service in the past 12 months." FinScope also found that 41 percent of a nationally representative sample were financially excluded.

- Many respondents' income was not covering their week-to-week spending. Looking at weeks in which respondents experienced a deficit, we found increased usage of home savings and cash transfers, suggesting that respondents were using these tools to cover their expenses during weeks they experienced a short-fall.
- Respondents whose week-to-week income varied the most were the most likely to use financial tools (including saving at home, cash transfers to and from friends and family, informal financial services, and formal financial services) to smooth their consumption.
- Respondents made an unusually large purchase about once per month, on average. They reported funding these purchases predominantly through income earned that week, home savings withdrawals, and cash transfers from other members living in the household (intra-household transfers).

Risk Management

- Respondents reported a number of infrequent or unexpected events, such as births, weddings, funerals, and medical issues:
    - A review of case data suggests that there was an impact of childbirth on a woman's ability to earn a living.
    - There were 38 weddings reported during the study period, and these instances resulted in increased earnings and spending in the week preceding the wedding and the wedding week itself.
    - Funerals seemed to have had no impact on earning or spending, despite their frequency—168 respondents reported a funeral during the study period.
    - Illness had a negative impact on earning and spending during the week of the illness and the week after. There was no discernible change in the use of financial tools during this time.

The findings from the Diaries study suggest that those who participated in the study lead complex economic lives and used financial tools to manage their money from day to day and week to week. The data suggest that the financial tools they used were largely based in the home in the form of home savings or intra-household transfers, or provided by friends and family. Transactions with FSPs were limited.

Based on these findings, we propose that stakeholders interested in increasing financial inclusion within Zambia should adopt a two-pronged strategy. First, stakeholders should focus on identifying cost-effective ways to get cash into the hands of the poorest Zambians. The data suggest that very low-income Zambians struggle to make ends meet, forcing them to rely on cash transfers from family to survive. A cash transfer program that uses the extensive mobile money and bank agent network in Zambia could have a profound impact on the lives of low-income people and get them acquainted with the formal financial service system. For those individuals that are low-income but regularly meeting their expenses or have small amounts of discretionary income, FSPs should focus on building trust with their prospective customers. The lack of trust between potential clients and FSPs appears to be an important barrier to use. Rather than use FSPs, respondents have become self-sufficient or rely on friends and family to help manage mismatches between their income and expenditures.

INTRODUCTION

In 2014, Microfinance Opportunities was commissioned by Financial Sector Deepening Zambia (FSDZ) to conduct the Zambia Financial Diaries, a yearlong study to examine how low-income individuals in Zambia managed their cash flow and used financial tools—savings, transfers, loans, and insurance. A team of field workers interviewed 355 respondents on a weekly basis, collecting data on all goods or services that they bought, sold, or traded; the financial tools that they used; and whether any important events occurred in their lives that week. In addition, MFO used cross-sectional surveys and in-depth interviews to understand respondents' attitudes toward asset building, risk management, and financial service providers.

The analysis of these data sets suggests that respondents were savvy economic actors. They were constantly looking for opportunities to maximize profits—we see respondents who expanded their economic activities by doing things as varied as starting a secondhand clothes business to brewing beer with wild berries that they gathered. During interviews, respondents frequently discussed how they engaged in price discrimination of the goods that they bought or sold and how they attempted to fill gaps in the market for particular goods.

While savvy, they were also extremely risk-averse and affected by trust issues within their financial networks. As a result, they acted in ways that minimized their exposure to any type of loss. Micro-retail business owners, for instance, minimized the amount of inventory they held by getting pre-orders from customers. In their role as consumers, the respondents operated on short-time horizons, buying goods by the day to avoid waste or to avoid tying up small sums of cash that they may have needed for an unexpected event. Respondents also tried to avoid economic agreements that required individuals to meet commitments in the future. For instance, micro-retail business owners did not sell on store credit because of the difficulty of having their clients repay. Respondents often avoided chilimbas because they were concerned about their neighbor's capacity to contribute to the group. Respondents' concerns grew when they involved a financial service provider—they reported that these providers commonly engaged in theft by charging interest rates on loans or seizing a respondent's meager possessions if they were late on a payment.

In an environment in which they were trying to maximize profits but minimize risk, respondents became—through some combination of choice and circumstance—self-reliant, using their income and money saved at home to meet their weekly expenses, make lump sum purchases, manage risk, and accumulate assets. When income and savings were insufficient, they turned to goods they had stored, food they had farmed, or to friends and family members for help. Financial services from formal or informal providers rarely featured in the lives of our respondents.

The remaining sections of this report explore these issues in-depth. Chapter 1 provides a description of the sample, including an overview of the sample demographics and respondents' livelihoods. Chapter 2 examines respondents' transactions, specifically looking at how they earned income, what they spent money on, and how they used financial tools. This chapter shows that, outside of Copperbelt Province, respondents' use of formal and informal financial services was limited, occurring once every three months on average. Chapter 3 seeks to provide explanations for the limited use of formal and informal financial services, focusing on issues of future planning, risk management, and attitudes toward financial service providers. Chapters 4 and 5 describe respondents' cash flow management patterns, examining ways in which they used their income,

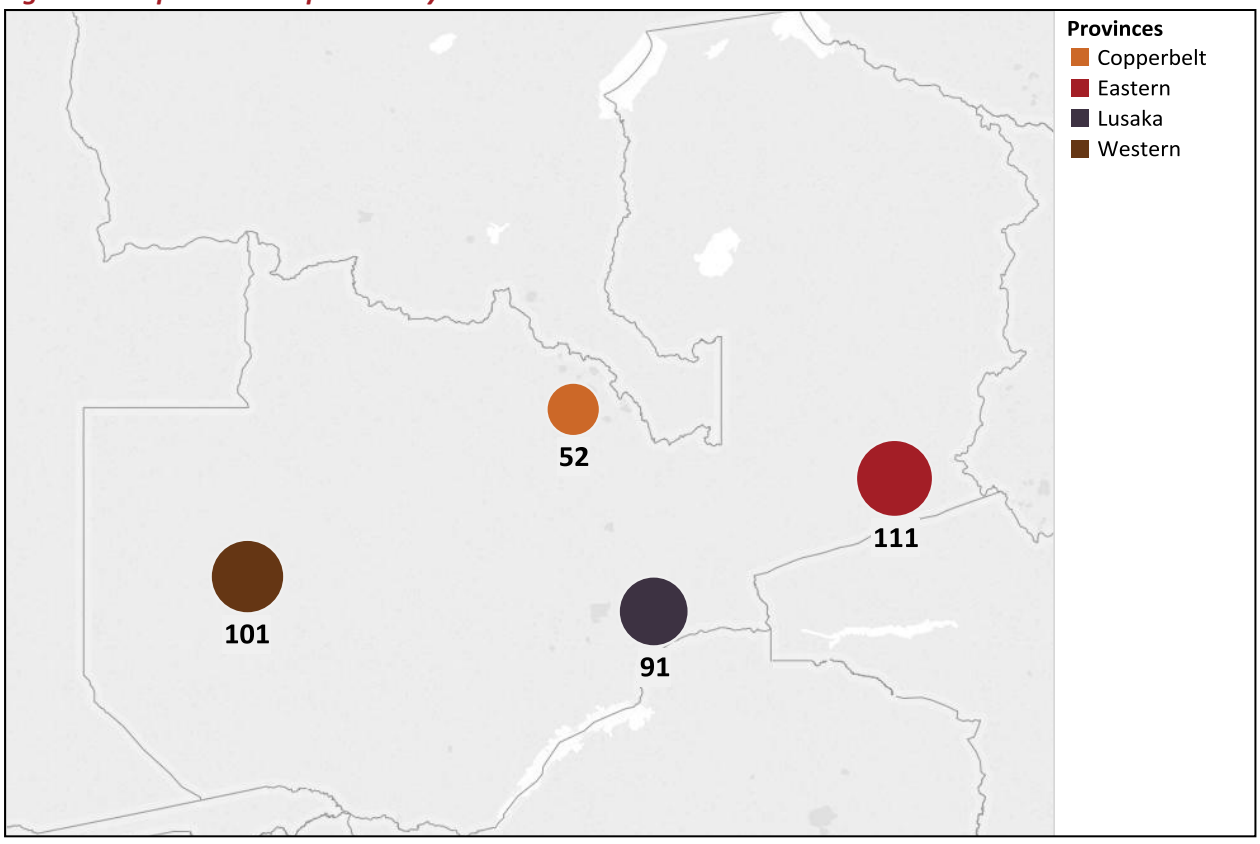
home savings, in-kind goods, and farmed produce to support their livelihoods, meet consumption needs, make lump sum purchases, and manage life cycle events and emergencies in the absence of the widespread use of formal and informal financial services. Chapter 6 concludes the report with recommendations for stakeholders. A technical annex that includes provincial and gender breakdowns of the data as well as a full write-up of the cases mentioned throughout the main body of the report follows.

CHAPTER 1: SAMPLE OVERVIEW

RESPONDENT CHARACTERISTICS

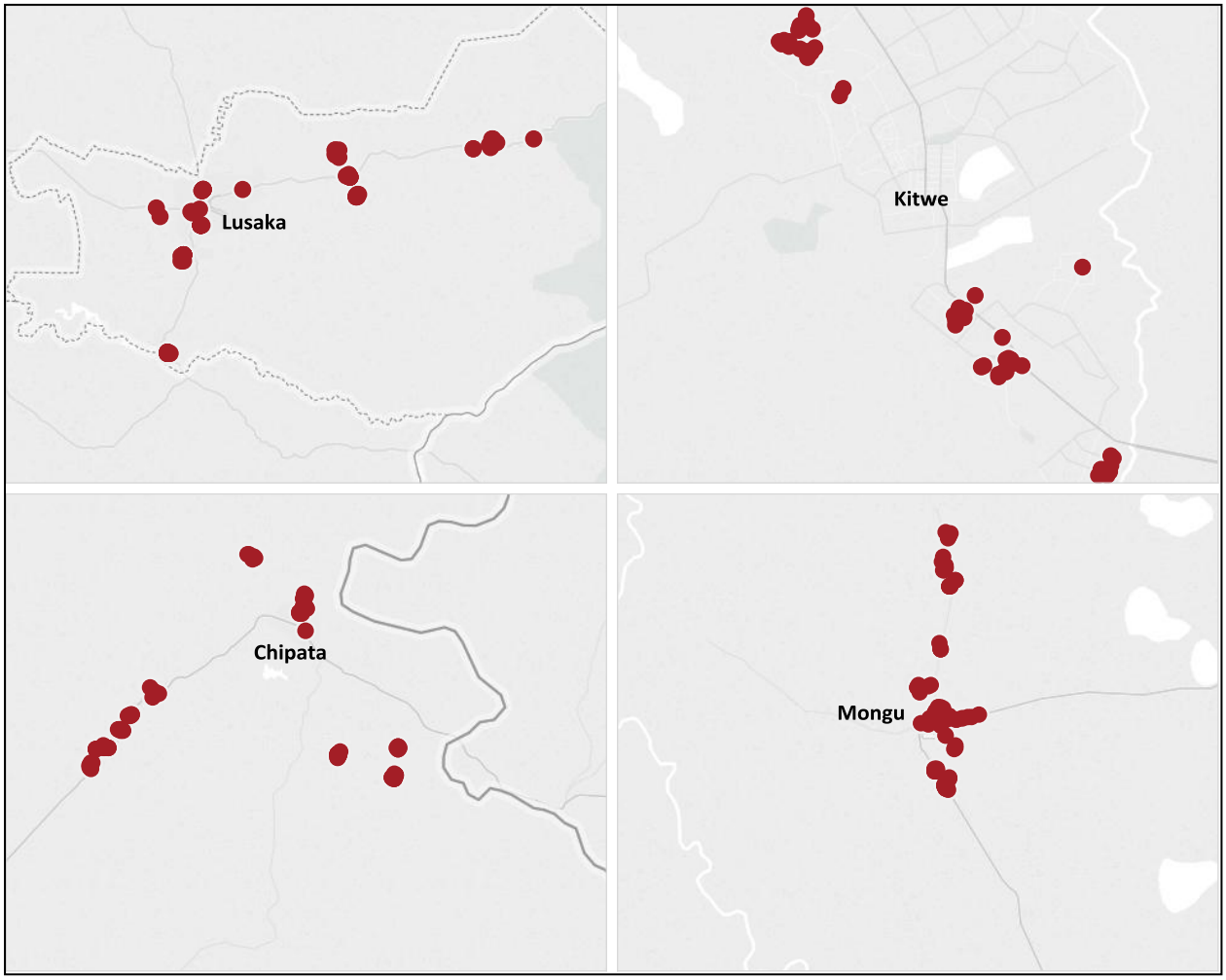
The Financial Diaries sample included 355 respondents in four provinces in Zambia: Copperbelt, Eastern, Lusaka, and Western Provinces (Figure 1).

Figure 1: Respondent Map - Country View



Within each province, we clustered respondents by village (Eastern and Western Province) or neighborhood (Copperbelt and Lusaka Province) to enable enumerators to reach them easily during their weekly data collection visits (see the "Methodology" section of the Technical Annex for more details on data collection). Figure 2 shows the distribution of respondents in each province.

Figure 2: Respondent Map - Province View



The sample included 212 women and 143 men. Eleven enumerators conducted 16,510 interviews over the course of 58 weeks, beginning in early November 2014 and ending in mid-December 2015. The enumerators collected an average of 46.5 interviews per respondent.[3] The enumerators conducted 9,472 interviews with women (45 per respondent) and 7,038 interviews with men (49 per respondent).[4]

Table 1: Number of Weeks Interviewed by Gender

	Total Number Interviews	Average Number of Interviews per Respondent
Male	7,038	49.2
Female	9,472	44.7
Total	**16,510**	**46.5**

Based on coding of the data collected through an initial enrollment survey, the Financial Diaries, and a cross-sectional survey administered at the end of the study, we identified five categories of

[3] This number is less than the 58 weeks of the study as not all respondents were active from start to finish. For example, some respondents enrolled after the initial start-up period, and some respondents could not participate every week due to their busy schedules; miners for example, had difficulty interviewing every week due to their day-shifts.

[4] The difference between the number of interviews per respondent for men and women is a result of having to drop the first six months of data for one enumerator whose data were of too poor quality. Eighty percent of this enumerator's respondents were female, resulting in a drop in the number of female interviews collected when compared to men.

respondent livelihoods. The most important determinant of how we categorized respondents into different livelihoods was based on the main source of income, calculated using the Financial Diaries data, for each respondent. The five categories of livelihood were: micro-retail business; farmer; informal labor services; formal worker; and dependent. Almost one-third of the respondents owned a micro-retail business, while only nine percent were in formal employment. The response rate from each group was very similar—we had 46 interviews, on average, per respondent from each livelihood group. Looking at the distribution in terms of gender, a greater proportion of women than men in the sample were dependents. Men were much more likely than women were to work in formal employment or in informal labor services, and they were slightly more likely to work as a farmer. Men and women were equally likely to be involved in a micro-retail business.

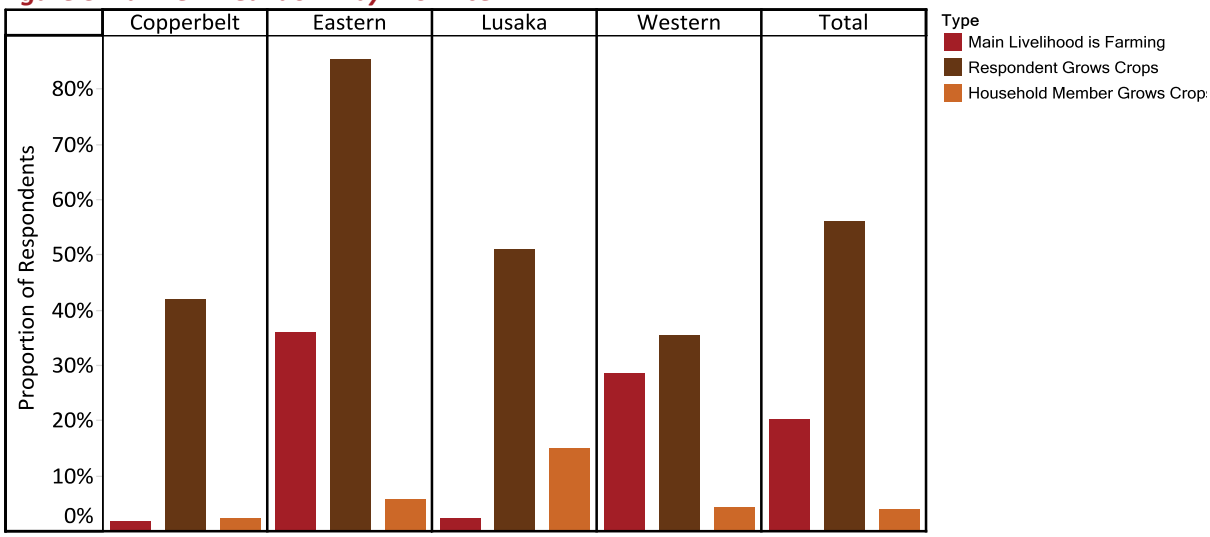
Table 2: Livelihood by Gender

	Male	Female	Total	Average Number of Interviews per Respondent
Micro-Retail Businesses	28%	29%	29%	46.7
Farmer	22%	19%	20%	45.2
Informal Labor Services	31%	12%	19%	48.2
Formal Employment	15%	5%	9%	46
Dependent	4%	35%	23%	46.2
Total	**100%**	**100%**	**100%**	**46.5**

Farming As a Livelihood and As a Source of Subsistence

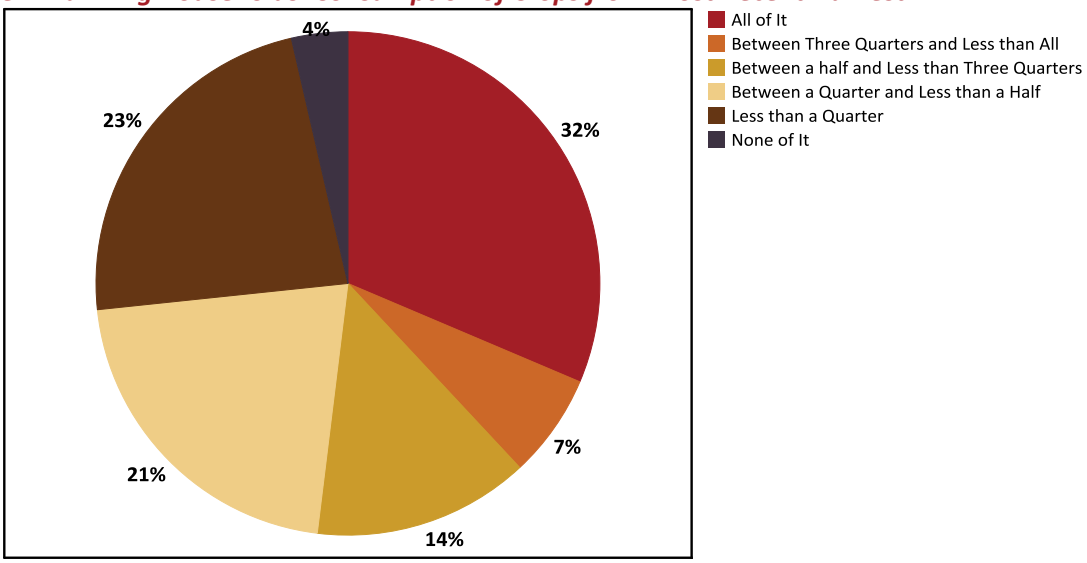
72 respondents' main livelihood was farming—they earned the majority of their income selling farm produce. Cross-sectional data also revealed that a large proportion of the sample, however, grew crops or belonged to a household that grew crops, even though their main source of income was not from farming.

Figure 3: Farmer Breakdown by Province



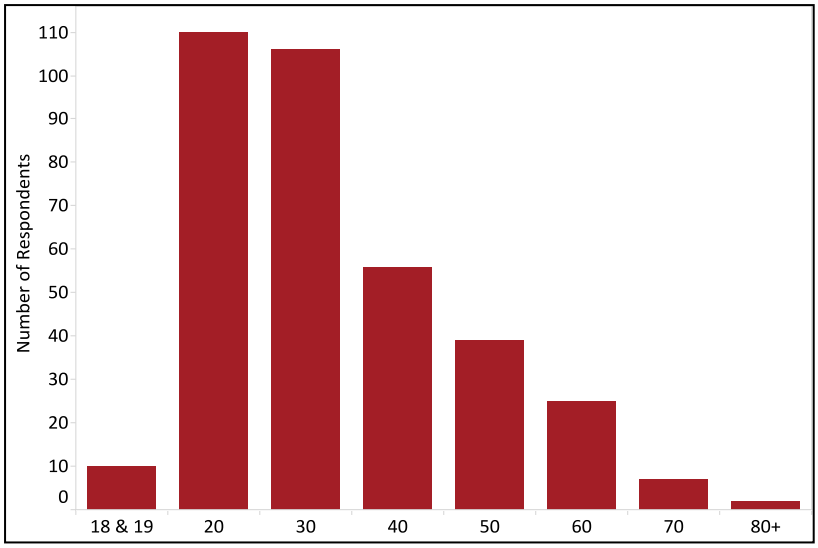
About one-third of those that did grow crops on their farms consumed all that they grew from their most recent harvest. Another one-fifth consumed more than half but not all the crops they grew.

Figure 4: Farming Households' Consumption of Crops from Most Recent Harvest



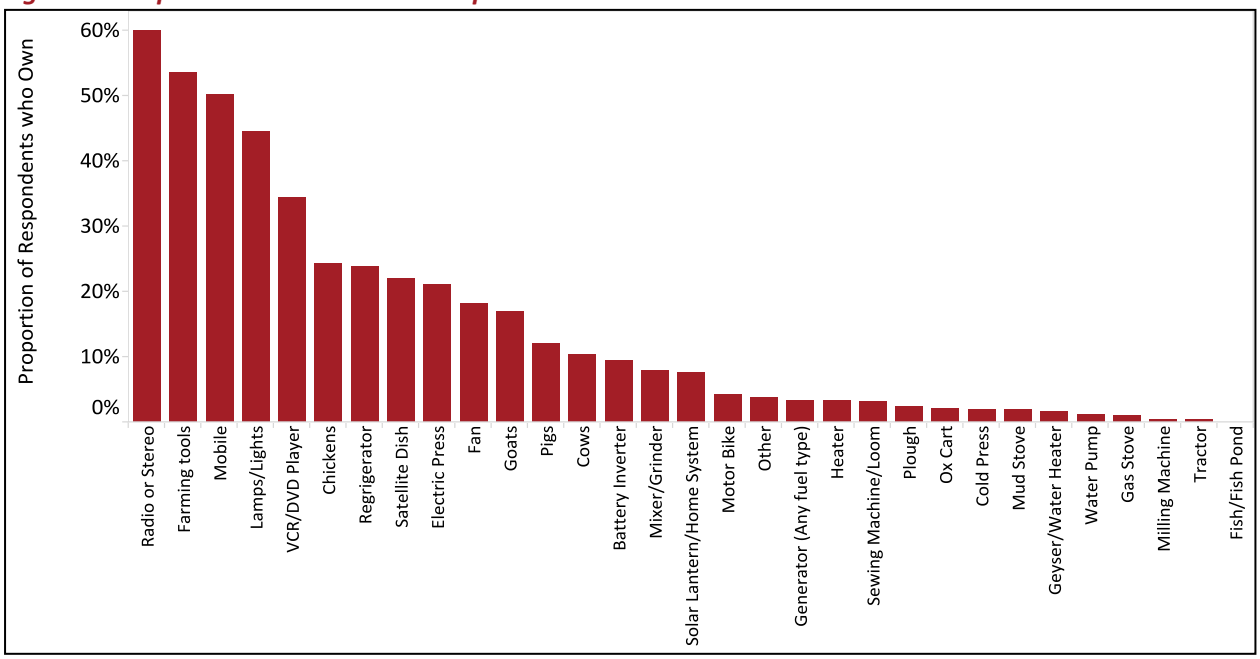
Most of the respondents were between the ages of 20 and 39. We did not interview anyone younger than 18 years of age to avoid the challenges of interviewing younger teenagers and children (Figure 5).

Figure 5: Histogram of Respondents' Ages



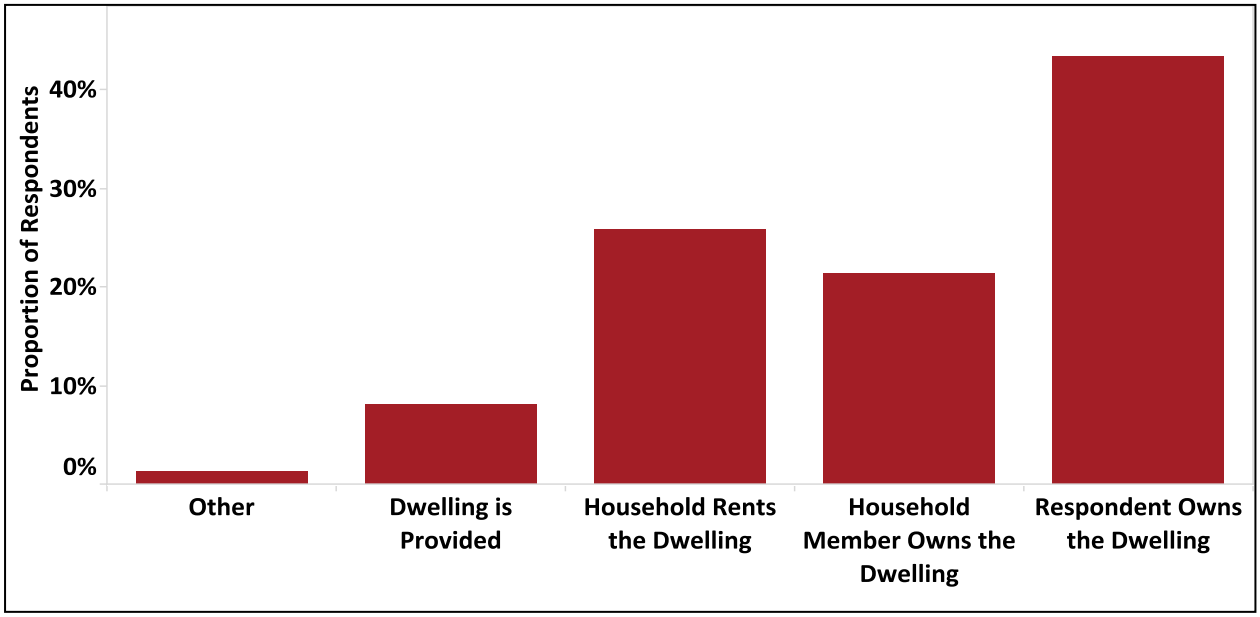
Towards the end of the study, we asked respondents to list all of the assets they owned, other than their home and the land they farmed. Generally, respondents did not own high valued assets that they could sell in a time of need. The data show that almost 60 percent of respondents owned a radio or some sort of stereo equipment, over 50 percent owned farming tools, and about 50 percent owned a mobile phone. Fewer than 10 percent of the respondents reported owning a motorized vehicle of any sort. The most common motorized vehicle that they reported owning was a motorcycle.

Figure 6: Respondents' Asset Ownership



A majority of respondents reported living in a home that either they owned or another member of their household owned. This ownership mostly tended to be informal, however, as more than three-quarters of respondents who reported owning their dwelling said that they did not have a title or deed for it.

Figure 7: Household Ownership



During enrollment, respondents completed the Progress out of Poverty Index (PPI) questionnaire, which scores them on a scale of zero, very likely to be below the poverty line, to 100, very unlikely to be below the poverty line. The following converts respondents' PPI scores into a likelihood of living below the Göttingen Poverty Line of $2.00 per day.[5]

Men and women were equally likely to be living below the poverty line. Both genders scored roughly the same PPI score—on average members of each group had an 83 percent chance of living below the poverty line.

Table 3: PPI by Gender

	Average PPI Score	Likelihood of Living below the Poverty Line
Male	48.2	83.3%
Female	47.8	83.3%

CHAPTER 2: DESCRIPTION OF RESPONDENTS' TRANSACTIONS

The Financial Diaries are a unique tool that provides insights into how respondents earn income, prioritize spending, and use financial tools. Understanding each of these facets allows us to better understand the priorities and behavior of respondents on a week-to-week basis. This chapter summarizes these different transaction types in order to create a holistic understanding of how respondents earned and used money and which financial tools they relied on to manage these flows.

[5] According to the Progress Out of Poverty, "The Göttingen Poverty Line uses a definition of poverty status developed by the CSO and consultants from the University of Göttingen." The Grameen Foundation, which manages the Progress out of Poverty, encourages the use of the Göttingen Poverty Line as it is "more comprehensive" than other measures. The $2.00 figure mentioned here was adjusted based on the purchasing power parity (PPP) from 2005.

INCOME

In this section, we explore how respondents earned income through the sale of goods or services, including their own labor. We refer to any cash inflows that the respondents generated through the sale of goods or services as "income."

In all cases we are referring to respondents' gross income—the revenue that flowed into their hands from the work they did or sales they made. This is especially important to keep in mind in the case of micro-retail businesses, which typically had considerable business expenses. When we discuss how respondents managed their cash flow in Chapter 4, we will provide more insight into the way in which micro-retail business owners juggled their business income and expenditures.

SOURCES AND LEVEL OF INCOME

On average, the Diaries respondents had 4.8 sources of income and earned ZMW 241 per week. Segmenting the data by livelihoods reveals that micro-retail businesses had the greatest number of income sources (6.8), followed by farmers (6.5). Formally employed respondents earned the most per week on average (ZMW 623) followed by micro-retail businesses (ZMW 476).

Table 4: Income and Income Sources by Livelihood

	Number of Income Sources	Average Weekly Income (ZMW)
Micro-Retail Business	6.8	476
Farmer	6.5	121
Informal Labor Services	4.5	150
Formal Employment	2.5	623
Dependent[6]	1.9	24

INCOME VARIATION

Low-income people are vulnerable not only because their incomes are insufficient for covering their expenses, but also because their incomes vary considerably from week to week and month to month. This is one reason why it is important for low-income people to have access to good financial tools—one of the most important functions of financial tools is to enable people to manage fluctuations in income so they can avoid going without food or other necessities.

We measured the variation of respondents' incomes in two ways. We looked at the coefficient of variance (COV), which is a standardized measure of how much a respondent's income deviates from their average income. We also counted the number of weeks in which respondents earned no income (zero income weeks). The data reveal that respondents had great variation in their week-to-week income, with dependents having the greatest variation among all the livelihoods. Micro-retail businesses, on the other hand, had the least amount of variation when compared to the other livelihoods.

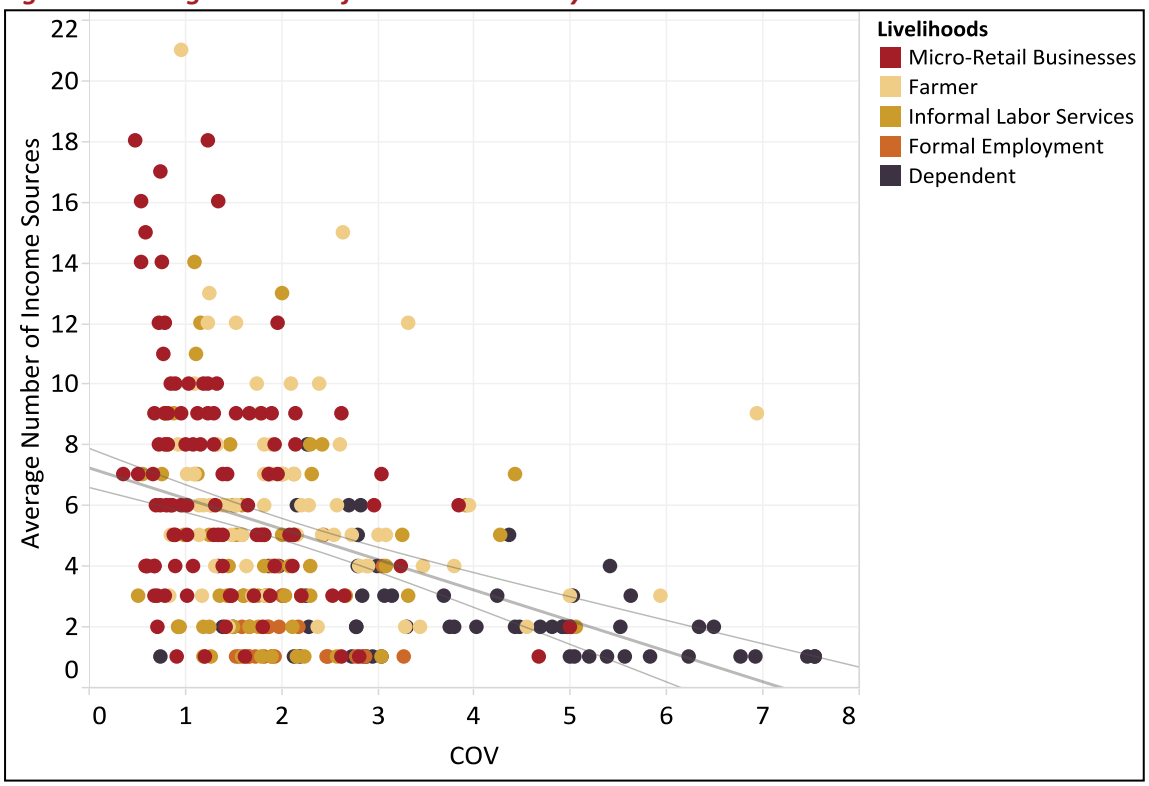
[6] Though intra-household transfers dominated the inflows that dependents received, many of them also earned income outside of the household. The data reported for this group in this table and below refers only to the income dependents *earned* through the selling of goods or services, including their own labor.

Table 5: COV and Zero Income Weeks by Livelihood

	Average COV	Zero Income Weeks as a Proportion of Total Weeks
Micro-Retail Business	1.4	32%
Farmer	2.1	53%
Informal Labor Services	1.9	51%
Formal Employment	2.0	74%
Dependent	3.9	88%

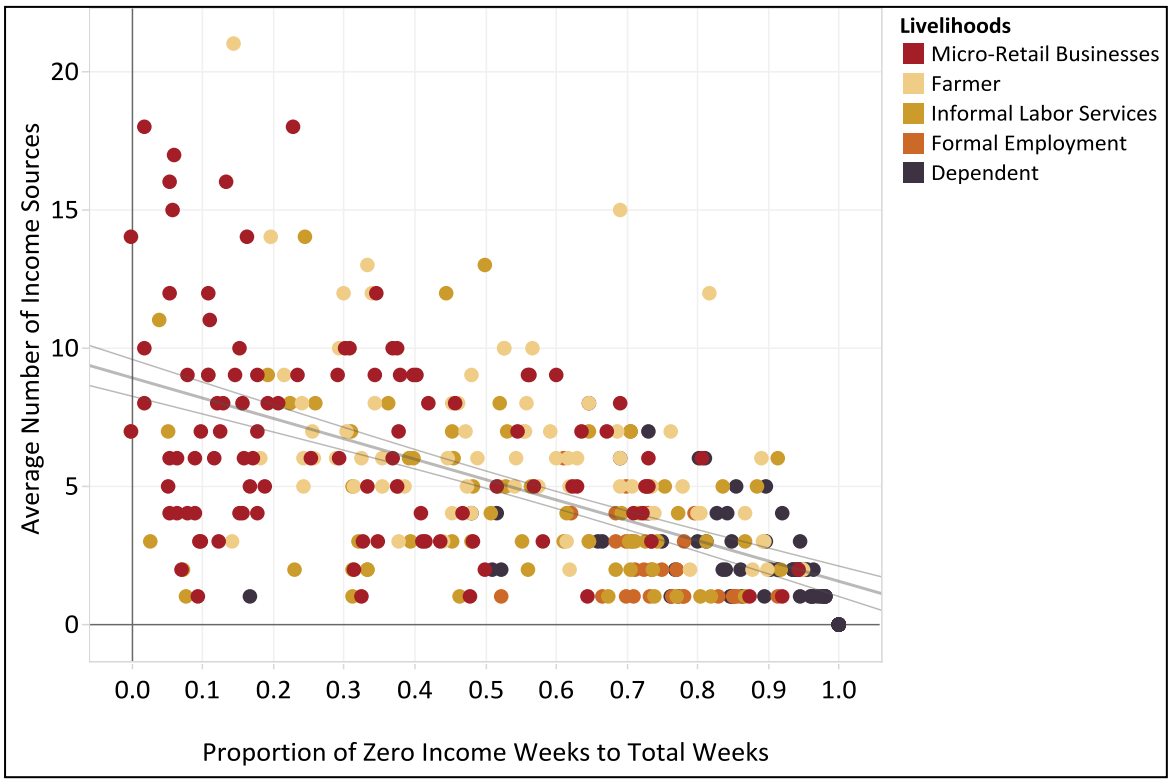
The number of income sources a respondent had was strongly associated with the variation in their income—the larger the number of income sources, the lower the variation measured by the COV (Figure 8).

Figure 8: Average Number of Income Sources by COV



A similar relationship existed between the number of income sources a respondent had and the likelihood of them experiencing a week with no income (Figure 9).

Figure 9: Average Number of Income Sources by Proportion of Zero Income Weeks to Total



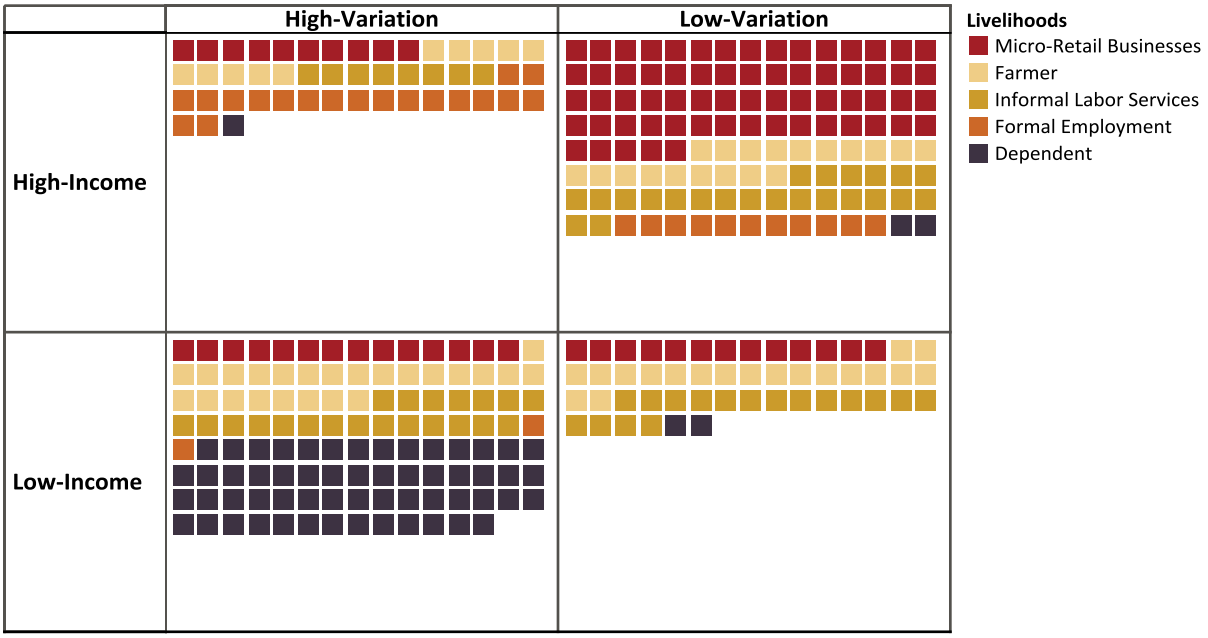
INCOME LEVEL AND VARIATION

In the previous two sections, we discussed the level and variation in the incomes of our respondents. These two dimensions of cash flow can have important ramifications for the types of financial tools they need. For example, a person who sells vegetables every day and earns a regular income from those sales has different cash flow management challenges than a person who performs irregular piecework to earn a living, even though their average incomes may be the same. A person who earns enough to save up money for a future purchase or investment has different cash flow management challenges than someone who simply earns enough to survive, even though the regularity of their incomes might be similar. To summarize these different patterns of income, we divided respondents into four segments based on whether their level and variation of income were above or below the median for the sample. We then looked at the distribution of livelihoods across these four segments.

This grouping showed that respondents with higher incomes were also more likely to have lower variation in their income, while people with lower incomes were more likely to have more variation in their income. One hundred and twenty of the 337 respondents (36 percent) who reported earning any type of income during the study were in the high-income/low-variation segment, while 118 (35 percent) of the respondents fell in the low-income/high-variation segment. There were 48 respondents (14 percent) in the high-income/high-variation segment, and 51 respondents (15 percent) in the low-income/low-variation segment. The two most populous segments show that there is a relationship between livelihood and segment—dependents were more likely to be in the low-income/high-variation segment, and micro-retail businesses were more likely to be in the high-income/low-variation segment. That makes sense in that a successful micro-retail business is more likely to have a steady revenue stream, while dependents may occasionally work. However, the

relationship between the two characteristics is not absolute. Micro-retail businesses and dependents were found in all four segments.

Figure 10: Income Segmentation Model by Livelihood



Farmers and informal service workers were also well-represented in all four segments. This finding confirms what we reported based on our interim analysis of the Zambia Diaries—we cannot assume that all smallholder farmers have similar income patterns. FSPs wishing to offer them products or services will require an understanding of their cash flows, including the level and variation of their incomes. We will return to this point in Chapter 4.

Finally, the segmentation model shows that respondents in formal employment, who received monthly salaries, were almost all in the two high-income segments. Two-thirds of respondents who earned income from formal employment had highly variable incomes. These respondents typically received their salary payment once during the month and earned very little or no income the other weeks. The remaining third had lower variability suggesting that they received their salary one week *and* earned income from other sources during the remaining weeks of the month. This additional income reduced their week-to-week income variation.[7] As with farmers, these data suggest that knowing a person's livelihood may be insufficient for understanding their financial service needs as these two groups of formally employed respondents may require different financial services to intermediate their cash flow despite receiving a predictable, salaried income every month.

By definition, individuals in the high-income segments had much higher average weekly incomes than those in the lower-income segments. There was little difference in the income of the two high-income segments, but the low-income/high-variation segment had significantly lower levels of weekly income than the low-income/low-variation segment. The former was about 60 percent of the latter.

[7] The average COV of the formally employed high-variation group was 2.2 compared to 1.65 for the low-variation group. Those with high variation experienced 37 weeks in which they earned no income on average, which is further evidence that this group of respondents did not receive non-salary earnings. The low-variation group experienced 27 weeks in which they earned no income, on average.

Table 6: Average Income per Week by Income Segment

Segment	Average Weekly Income (ZMW)
High-Income, High-Variation	404
High-Income, Low-Variation	521
Low-Income, High-Variation	32
Low-Income, Low-Variation	55

SEASONALITY AND LIVELIHOODS

Income does not only vary from week to week. It also may follow seasonal cycles related to the agricultural cycle or annual celebrations and holidays. In addition, as will be seen below, people have to manage in the face of long-term secular economic shifts. During the study, the Zambian kwacha lost about half of its value against the dollar, declining from ZMW 6.34 to the dollar on November 1, 2014 to ZMW 11.02 to the dollar on December 15, 2015.

Both micro-retail businesses and informal service workers did not experience marked spikes in average weekly incomes that suggest specific seasonal effects. Rather, we see that in both livelihoods, there were considerable week-to-week fluctuations that reflect the precarious nature of the respondents' income.

Figure 11: Income Seasonality - Micro-Retail Businesses

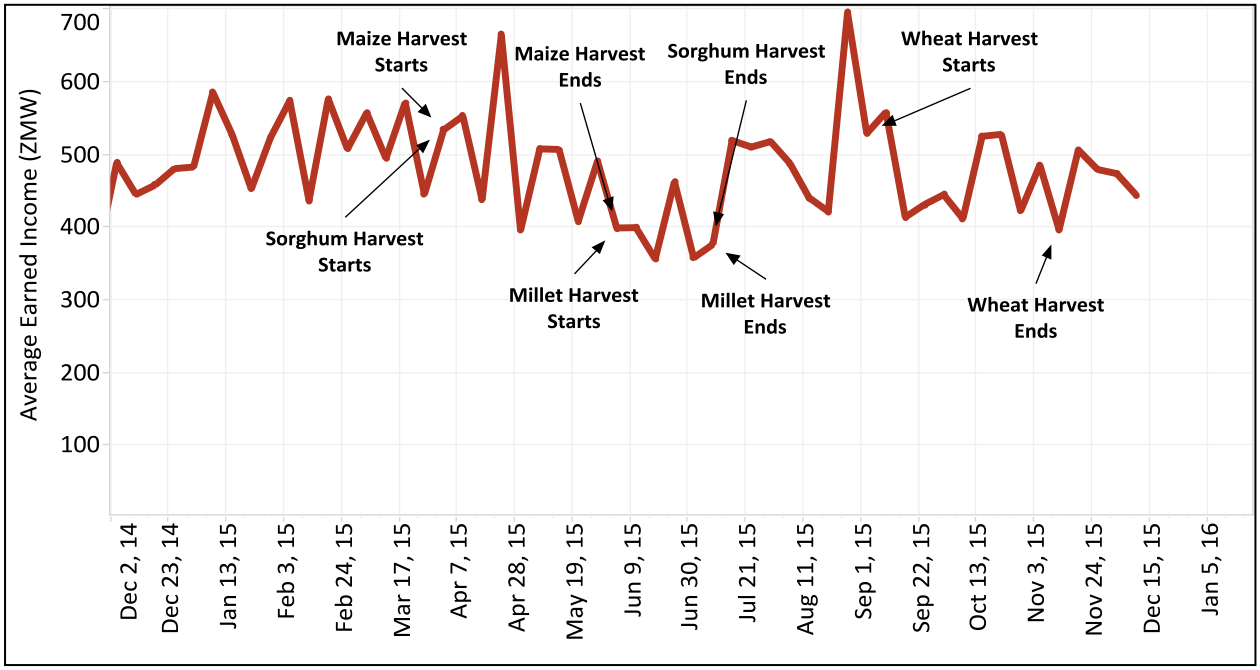
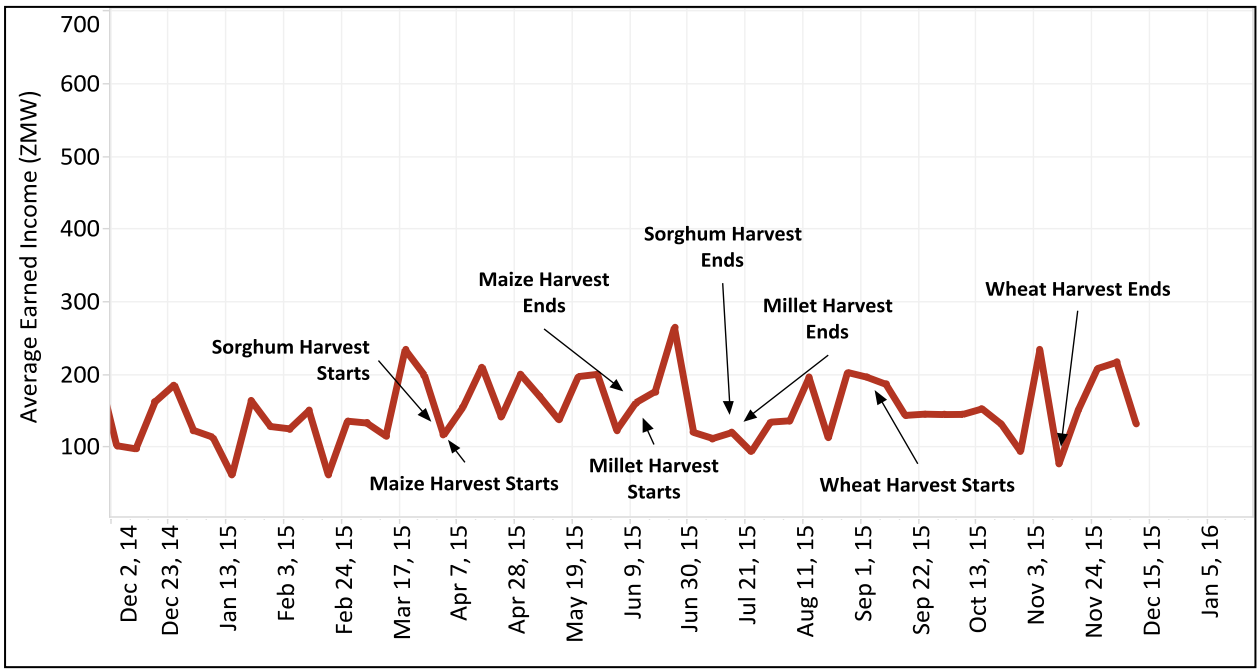


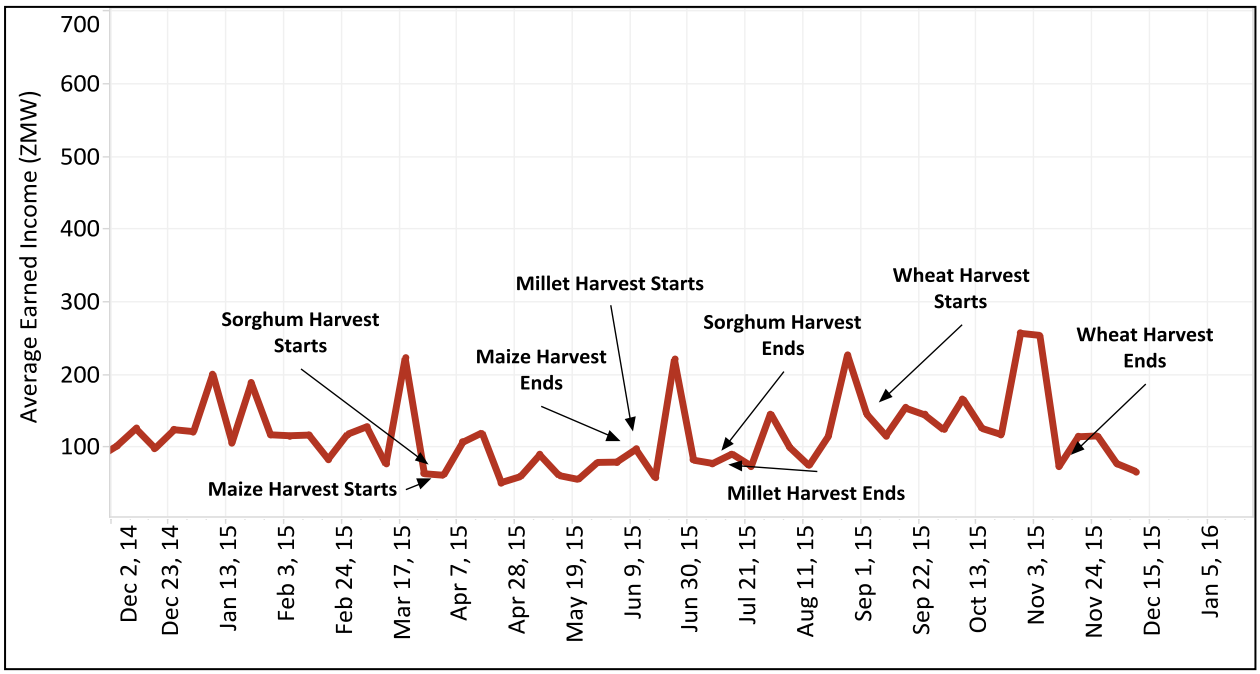
Figure 12: Income Seasonality - Informal Labor Services



Farmers, too, showed no marked seasonal spikes in earnings. There are several possible explanations for this. First, farmers in our study grew a mix of vegetables, which did not have a specific harvest season, in addition to cereal crops. This mix of produce allowed them to moderate the sales of their produce to have more consistent incomes throughout the year. Second, farmers who grew maize—one of the main cash crops—sold it in small amounts throughout the year, with only a handful of farmers selling the bulk of the harvest at once. In fact, respondents who sold maize completed 2.5 sales on average throughout the year, with some respondents making as many as nine sales during the study. These sales were also staggered, although relatively more sales occurred in the summer months that preceded the maize harvest season. Third, half of crop growing households consumed at least half of their harvest during the study period. With less harvest to sell, and the tendency to sell at multiple times throughout the year, farmers did not have harvest sales large enough to result in a spike.

Respondent Insights: Vegetable Farmers. During the in-depth interviews, we asked farmers how they cared for their crops to ensure that they had the best harvest possible. Ten of our interviewees reported growing crops such as vegetables and tomatoes, and seven out of those ten reported drawing water from a river or stream. Two others reported using a different source, such as a water pump or well, to draw water. Relying on these sources ensures that respondents can grow crops all year instead of relying just on the rainy season.

Figure 13: Income Seasonality - Farmers



HOUSEHOLD SPENDING

In addition to revealing differences in the ways respondents earn income, the Financial Diaries can also show us respondents' priorities when making purchases for their households. Enumerators collected data on the respondents' expenditures, which included information on the types of items purchased and whether they were for a household or business purpose. The respondents averaged about ZMW 150 per week on purchases for household consumption. Men spent more than women did on average.

Table 7: Average Household Spending per Week by Gender

	Average Household Spending (ZMW)
Male	169
Female	136
Total	**150**

Formally-employed respondents, who had higher incomes, spent the most per week on average. Dependents spent the next highest amount, reflecting the fact that they spent money on behalf of their household, not just their own income. Household spending by micro-retail businesses did not reflect their high gross income, because much of that income was spent on inputs for their businesses.

Table 8: Average Household Spending by Livelihood

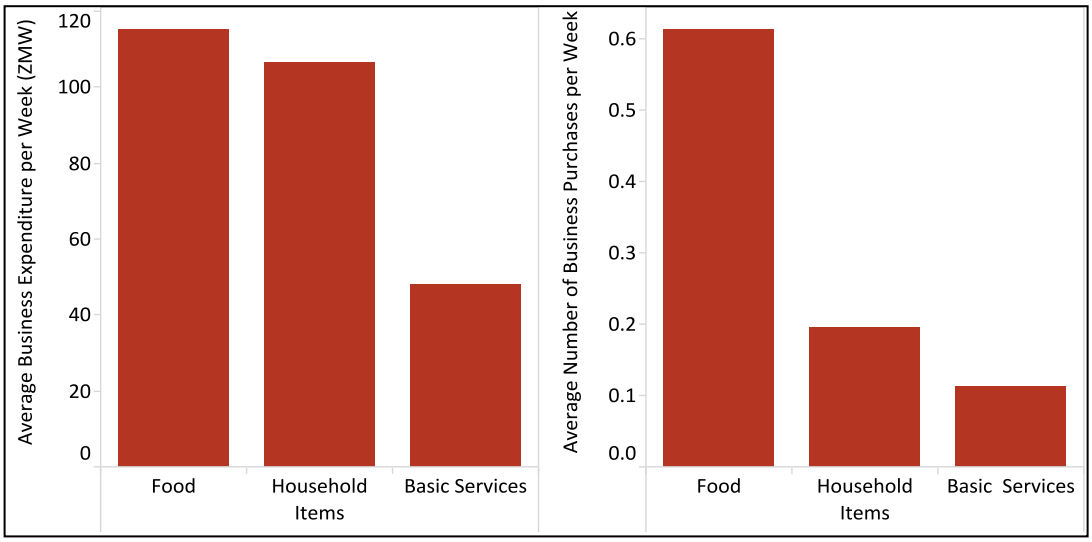
	Average Household Spending (ZMW)
Micro-Retail Business	109
Farmer	91
Informal Labor Services	126
Formal Employment	385
Dependent	185

Business Spending by Micro-Retail Businesses

Micro-retail businesses spent, on average, over ZMW 300 per week on business inputs and averaged more than one business expenditure per week. While other respondents had some business expenses, the amounts they spent were about one-eighth of what the micro-retail businesses spent per week.

The business spending patterns of micro-retail businesses in our sample reflected the type of business they had. The most common business purchase was on food items, reflecting the fact that many of the micro-retail business bought inputs for a cooked-food business (e.g. flour and cooking oil to make fritters) or bought and resold farm produce (e.g. vegetables). The other common business our respondents had was the purchases and resale of goods used in the household ("household items"), such as clothes or utensils. The micro-retail businesses also spent money on what we refer to as "basic services," which include airtime and transportation costs. Note how, though businesses spent about the same per week on food and household items, the number of food purchases was far greater, most likely reflecting the need to buy food items in small amounts to avoid waste.

Figure 14: Size and Frequency of Top 3 Business Spending Categories



These data help explain why micro-retail business have low household spending despite having high gross income. Although they earned, on average, ZMW 476 per week, they quickly put most, if not all, of this money back into their businesses by purchasing more inputs. We see this clearly in the very strong correlation between income and business spending from week to week. The correlation coefficient measuring how much the two variables vary with each other is 0.55 (where one is the strongest link), suggesting a strong association between income and business spending.

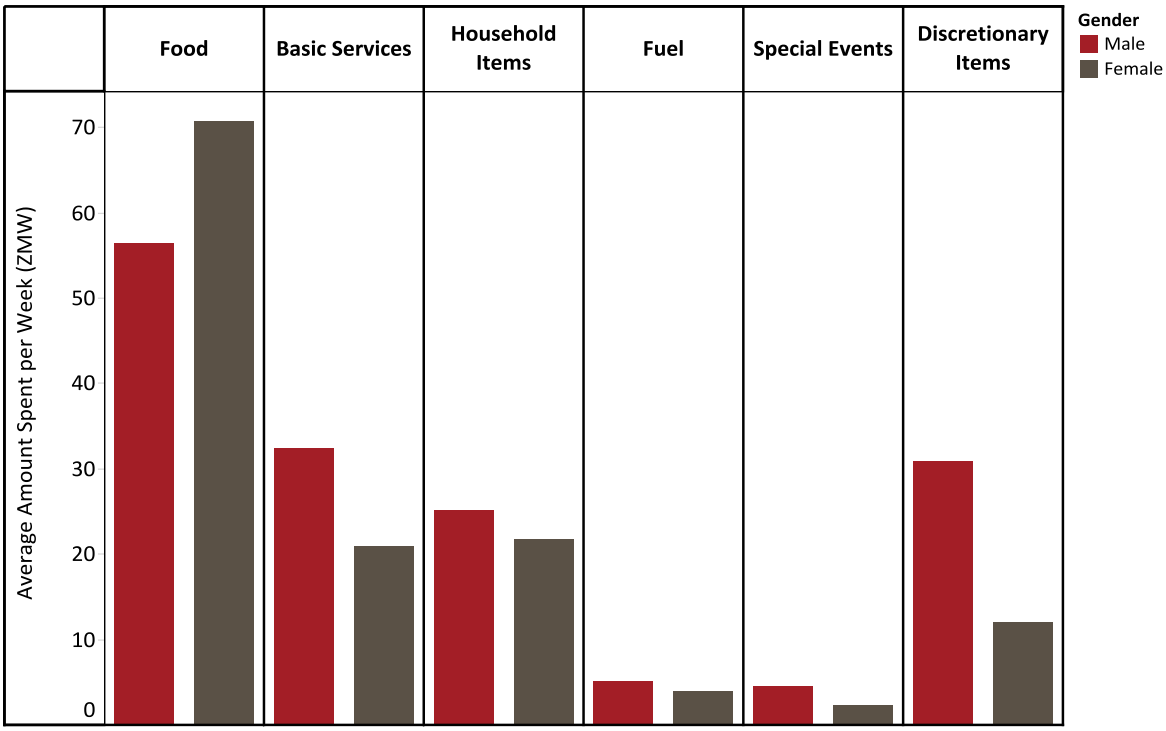
Finally, as one might expect, there was a difference in the average spending per week of high- and low-income individuals. This difference, however, was not as great as one might expect based solely on the differences in the levels of income. This is because those individuals on low-incomes either received intra-household transfers, most likely from their spouse, or received support from friends and family outside of the household. As a result, respondents in the low-income segments spent more than they earned per week on average.

Table 9: Average Household Spending per Week by Income Segment

Segment	Average Household Spending (ZMW)	Difference between Average Weekly Income and Average Weekly Household Spending (ZMW)
High-Income, High-Variation	284	120
High-Income, Low-Variation	161	360
Low-Income, High-Variation	115	-83
Low-Income, Low-Variation	57	-3
None Earned	198	-198

Though men spent more than women, women spent more per week on food both in absolute terms and as a proportion of their overall spending—52 percent of all women's spending was on food compared to 33 percent of men's spending. Men made up for this lower spending on food with greater spending on basic services and discretionary items.

Figure 15: Distribution of Household Spending by Gender[8]



The distribution of spending by income segment reveals, as one might expect, that individuals with higher incomes spent more on discretionary items. There were also differences in food spending, but those were less dramatic.

[8] Basic services are purchases for items such as education, transportation, health, airtime, and other service expenditures. Household items are items used within the household, such as soap, utensils, and candles, as well as clothing. Discretionary items are those that are not considered to be food, basic services, household items, fuel, or special events.

Figure 16: Distribution of Household Spending by Income Segment, Amounts[9]

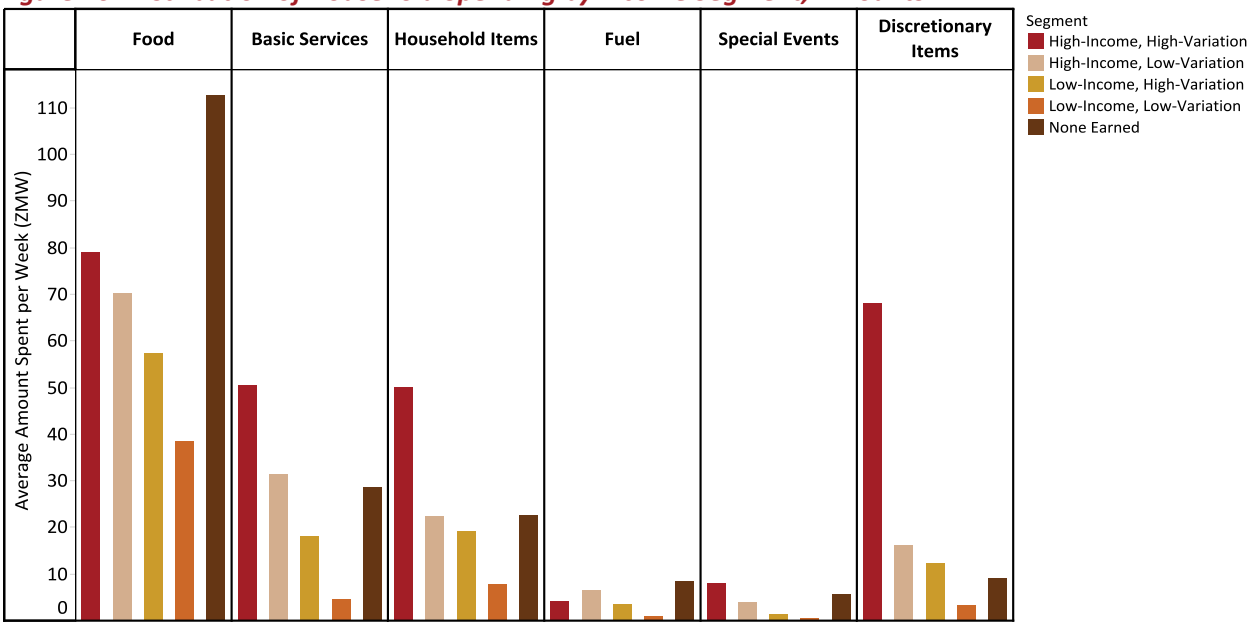
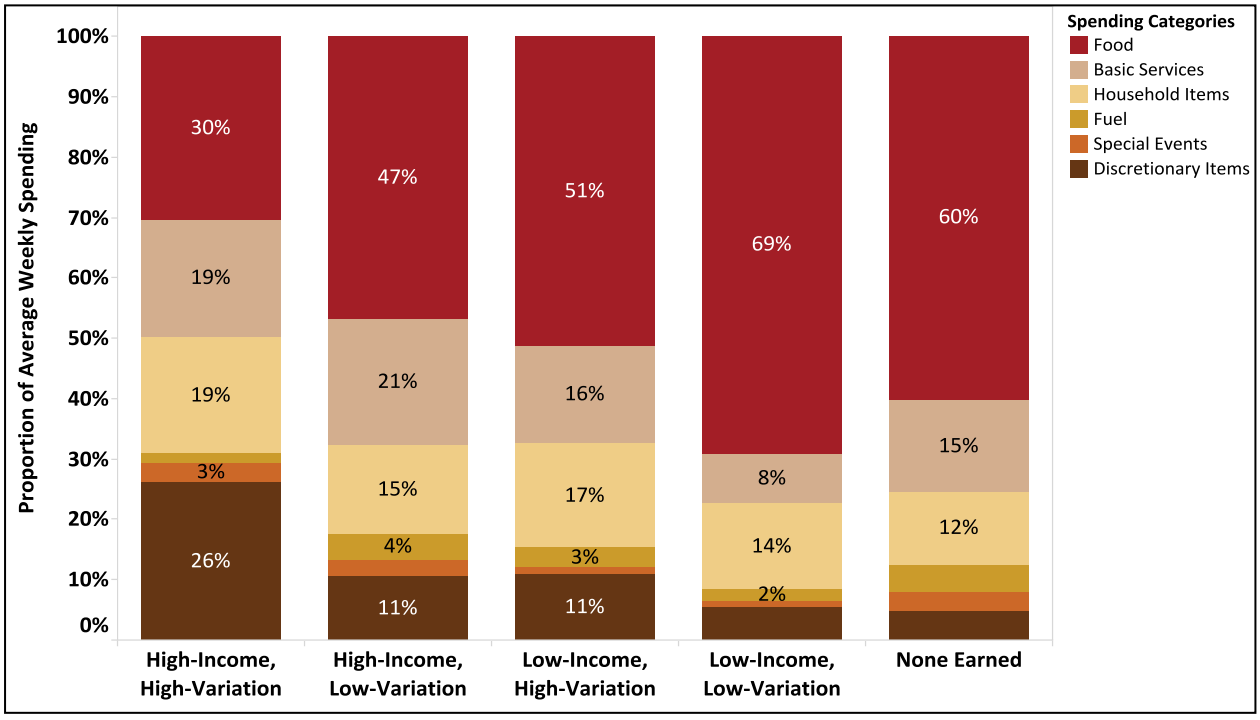


Figure 17: Distribution of Household Spending by Income Segment, Share of Amount



Agricultural Inputs Purchases

An important sub-set of expenditures that respondents made was the purchase of agricultural inputs. Analyzing these expenditures allows us to better understand the priorities of farming households.

The most common agricultural input purchase was fertilizer: 45 percent of the farming households—which includes respondents whose livelihood was classified as farming and households where a household member grew crops for personal consumption or to sell—bought fertilizer during the

[9] Spending figures do not include spending on housing. We have excluded spending on housing because this is a special category of spending that can includes spending on the purchase or improvement of a dwelling which may, as a result, increase in value.

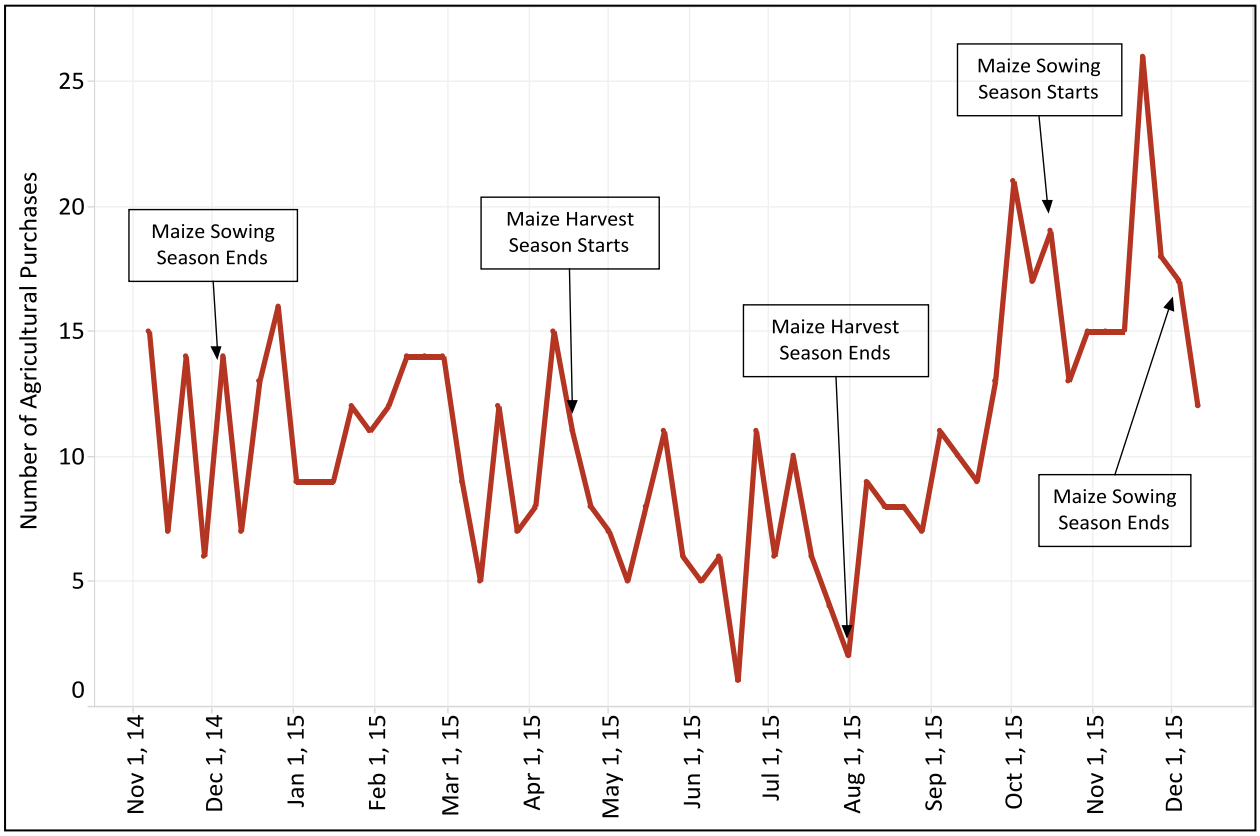
study period. The average amount they spent on each purchase was ZMW 296. The second most common purchase was seeds. Thirty percent of the farming households bought seeds, and the average purchase amount was ZMW 111.

Table 10: Top 5 Agricultural Purchases for Farming Households

	Proportion of Farming Households	Average Amount per Purchase (ZMW)	Transactions per Week
Fertilizer	45%	296	.038
Seeds	27%	111	.012
Pesticide	10%	45	.004
Capital Input	13%	113	.004
Agri-Service	12%	154	.003

Respondents' agricultural purchases displayed a seasonal pattern, roughly following the maize sowing and harvest seasons of Zambia.

Figure 18: Seasonality of Agricultural Purchases by Farming Households



FINANCIAL TOOLS AND NETWORKS

In this section, we describe the financial tools that respondents used and their financial networks. People use four financial tools to manage their financial lives: savings, loans, insurance, and cash payments or transfers. We define these as financial services when they are provided by a formal or informal financial service provider (FSP), but not all tools are provided by FSPs. Individuals can give or receive savings, cash transfers, and loans to or from family and friends, or they can save at home. In other words, people use financial tools in the context of different types of relationships, which may or may not involve an FSP. We refer to these relationships as the financial network of a respondent (Table 11).

Table 11: Financial Tools and Networks

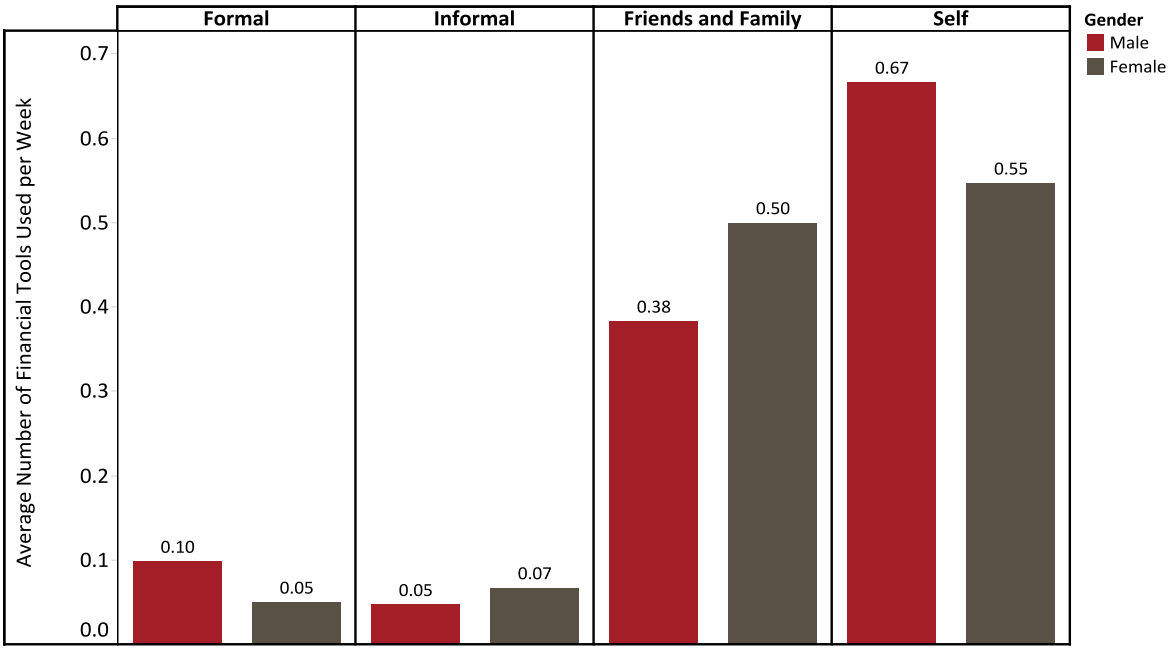
Network / Tool	Self	Friends and Family	Informal financial service providers	Non-financial organization	Formal financial service providers
Savings	Home savings	One family member holds money for another	Savings group and/or chilimba	Church-based savings club	Bank account or mobile money wallet
Loans	N/A	No-interest loan from a friend or family member	Loan from a money lender or Savings Group	Emergency loan from a disaster-response organization	Installment loan
Insurance	Self-insurance through savings	Cash gift from a family member to cover an emergency	Burial fund or Savings Group Social Fund	Emergency grant from a disaster-response organization	Life insurance or Health Insurance
Transfers (remittances or payments)	N/A	Cash gift	Money courier service through a local bus company	Grant from an non-governmental organization	Mobile money remittance; direct deposit into a bank account

Note: Collectively we refer to any financial tool provided by either an informal or formal financial service provider as a **financial service.**

OVERVIEW OF ALL TOOLS AND NETWORKS

The respondents in our sample relied predominantly on home savings and cash transfers to and from friends and family to manage their money (Figure 19).

Figure 19: Financial Network Use by Gender



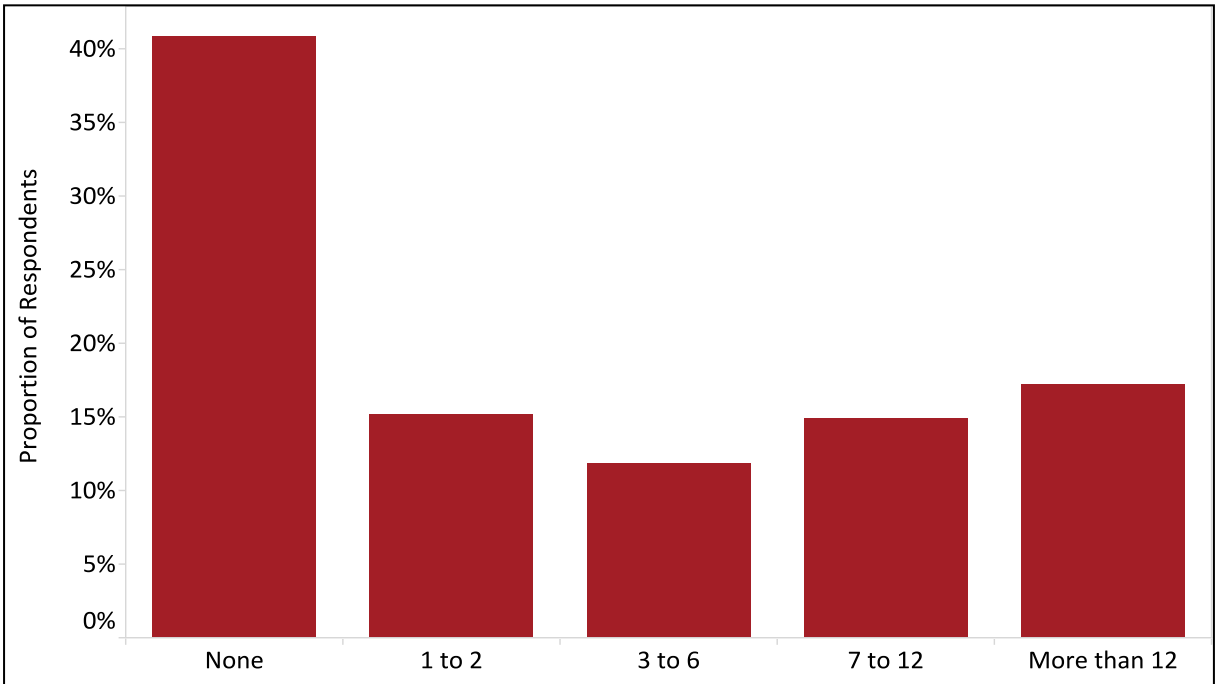
There was a difference between men and women in the rates that they used formal financial services. This is due to the higher representation of men than women in the formal employment sector (see the Technical Annex)—many formal employers require their employees to open a bank

account so that they can pay them through direct deposit rather than in cash. Women used financial tools with family and friends more frequently than men did while men used home savings more often than women. This was due to the fact that women were more likely to be dependents than men, and, by definition, they relied on other members of their household for their cash inflow.

FINANCIAL SERVICE USE AND FINANCIAL INCLUSION

Forty-one (41) percent of the respondents were financially excluded during the period of the study. This figure is similar to the 2015 FinScope study in Zambia, which found that 40.7 percent of adults in Zambia were financially excluded. Another 16 percent of respondents used a financial service twice per year at most.

Figure 20: Financial Service Use During the Study



The five groups in the above figure refer to the number of times a respondent used a financial service over the course of the year.

Case Example: Martha's Limited Use of Financial Services

Martha is a 35 year old mother who lived with her brother throughout most of the study. In week 30, she and her brother had a dispute, and he left her alone to fend for herself and care for her children. She had spent the first 30 weeks relying on her brother and his wife to help support her and her children, but following the dispute, she found herself in a precarious situation. To try and support her family, she started a business selling charcoal and popcorn. She received the capital to start this business after asking her sister for support, and her sister sent her ZMW 100 through MTN to do this. This instance was the only time Martha used a formal financial service during the study.

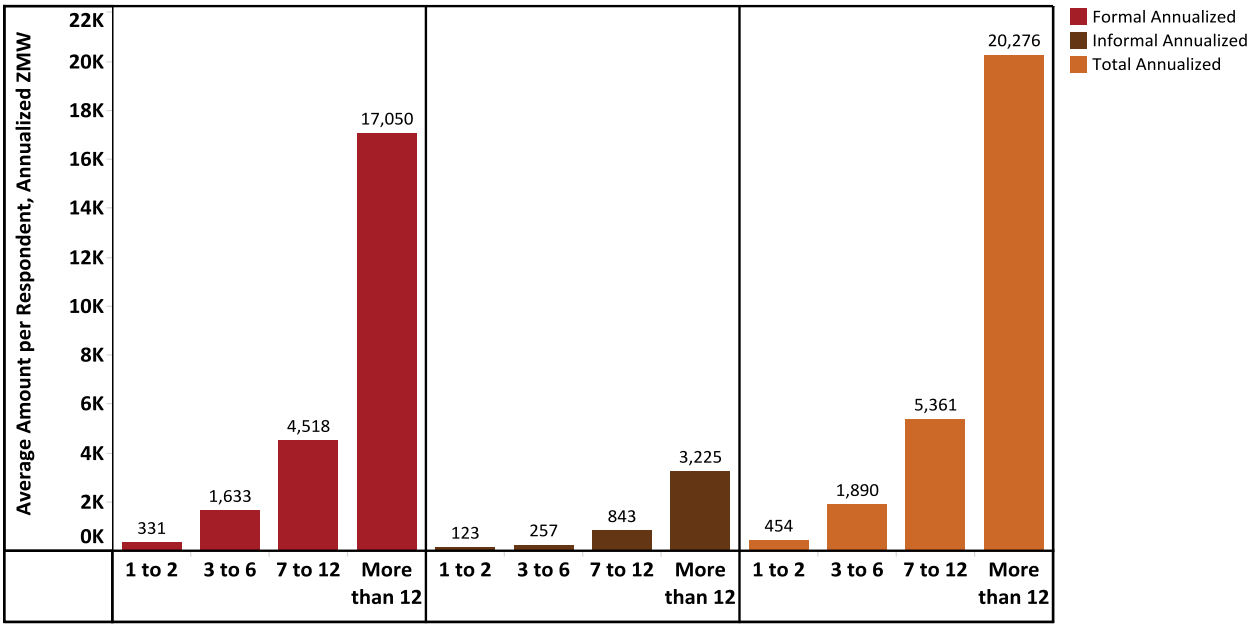
Technically, we would consider Martha "financially included" because she used MTN to receive this cash gift. However, Martha had used no financial services before this. She took out one loan during the study from a friend, something she preferred to do as she already had a relationship with this person, and friends tend to charge lower interest rates than local moneylenders do. Martha had previously taken out a loan from a moneylender before the study and only finished repaying it early in the study.

When asked why she did not use any other financial services other than her single-use of MTN, she said, "[I have] never used any other financial institutions and [do] not like to use them due to a lack of information about their services." Thus, while Martha may be considered included in the financial system, her activity is limited to only one service.

Martha's story was not unique among Diaries respondents. Many respondents had limited use of financial services, only using them as a last resort to send or receive cash gifts or to occasionally take out loans when they needed cash. In these instances, it becomes difficult to determine whether these individuals should be considered *included* in the financial system.

Looking more closely at how respondents used financial services sheds light on what it means to be financially included based on the FinScope criterion. Respondents who conducted a maximum of two financial service transactions during the year moved an average of ZMW 454 through all financial services they used (Figure 21). The most common type of transaction these respondents performed was with an associate—an individual the respondent knew but did not consider a friend and who was not a member of their family. More than half of financial service transactions that they performed were transactions with associates, including loans, loan repayments, and cash gifts to/from the associate (Figure 22).

Figure 21: Financial Service Amounts by Respondent Intensity of Use

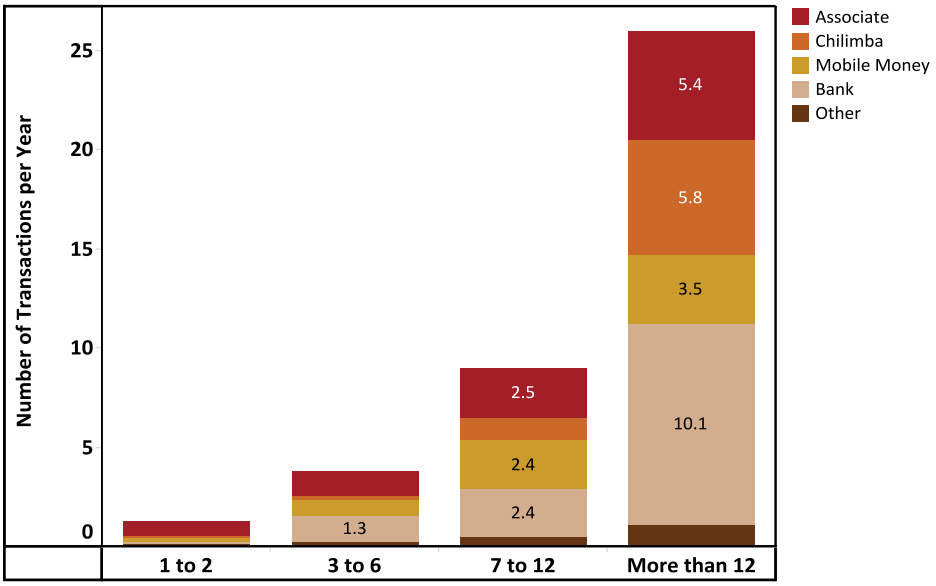


Categories along the x-axis show the number of all financial service transactions a respondent in the category performed in a year. Amounts show how much people in each category transacted with informal and formal service providers and the total of the two in a year.

Those respondents who performed three to six transactions per year ended up moving an average of ZMW 1,890 through the financial services they used (Figure 21). In the case of these respondents, the most common transaction was with an associate. About one-third of the financial service transactions were with an associate, followed very closely by transactions with a bank or mobile money provider, which were also each about one-third of the total.

As we move from the less frequent financial service users to the more frequent, we see that formal and informal financial service use rise together, rather than one displacing the other. In other words, the heaviest users of financial services—those who made more than one transaction per month during the study—were the heaviest users of formal *and* informal services. The respondents who used financial service providers the most ended up moving more than ZMW 20,000 per year through those services.

Figure 22: Financial Service Use by Respondent Intensity of Use



Case Example: Nicholas, A Heavy User of Formal Savings Services

Nicholas, age 30, worked in the mines when he became a diaries respondent. When first starting this job, he was required to open an account with the Zambia National Building Society (ZNBS) so that he could receive his monthly salaries. Typically, he says that receiving salaries was the only reason he used his ZNBS account as he preferred to save with other institutions.

Nicholas also had an account with Zanaco Bank which is where he preferred to save most of his money. His favorite feature about Zanaco's accounts is that they do not allow ATM withdrawals. This makes it more difficult for him to access his savings, ensuring that he does not frivolously spend it on unnecessary items. His main priorities for saving at Zanaco were to have funds in case any major emergencies arose and to save for any future projects he might want to undertake.

In addition to these two accounts, Nicholas also took advantage of MTN's services, using its savings feature by storing small amounts of money in his account. He made the distinction that his MTN savings account was to be used for small emergencies and to pay for any maintenance that his car might need.

Nicholas is a prime example of a financially included respondent who took advantage of multiple financial services. He said he preferred to pull from these multiple sources to insulate him in case one of them was to fail. For example, in week 25, Nicholas withdrew ZMW 2,200 from his account at Zanaco on Wednesday to help him cover his expenses while he earned money through his taxi business. He immediately put ZMW 1,000 of that money away for safekeeping at home, to use later on. He then used some of the remainder to purchase fuel and other household items over the next couple of days while he worked on earning income from his business. Once he had enough money, he put the rest of his withdrawal away for safekeeping.

In week 26, Nicholas made another withdrawal, this time from his ZNBS account. On Friday, he withdrew ZMW 1,300 to help pay for his car repair (ZMW 275) and to help buy household necessities and fuel as his income that week was not enough to cover these expenses. However, once he earned enough from his business, he again put the rest of his withdrawal away for safekeeping.

These examples show that Nicholas used his various savings tools to help manage his cash flow in times when his income did not cover his immediate expenses.

SUMMARY

In sum, the data suggest that respondents in our sample primarily relied on home savings and friends and family to manage their money. In cases where they did use financial services, they

tended to use a variety of different providers and, as the intensity of their use increased, they did **not** substitute informal services for formal services or vice versa.

In Chapter 4, we further explore how respondents used these tools to manage their day-to-day cash flow, manage risk, accumulate assets, and fund large expenditures. Before doing this, though, it is important to understand why our respondents did not use financial services extensively. The next chapter provides uses the in-depth interviews to provide this insight.

CHAPTER 3: ATTITUDES TOWARD RISK MANAGEMENT, FUTURE PLANNING, AND FINANCIAL SERVICE PROVIDERS

TRUST

During the cross-sectional survey and in-depth interviews, the field team asked respondents to explain how they approached cash flow management, collecting lump sums of cash, and the management of risk. The answers to those questions suggested that there were meaningful attitudinal barriers to financial service use. These barriers were rooted in respondents' lack of trust in informal and formal financial service providers (FSPs) as well as their short-time horizons for planning purchases.

The in-depth interviews suggest a deep distrust of formal and informal financial services. A limited understanding of how banks and their loan services operate underpins these trust issues. Additionally, respondents are suspicious of formal and informal financial services that charge them fees or interest, especially when their preferred alternative—family and friends—do not.[10]

For example, Charity, a 33-year-old, female micro-retail business owner from Western Province said that formal FSPs "just steal money indirectly through their charges." She has also seen a local microfinance institution take her friend's television when the friend was not able to pay her loan back in time. Charity would rather rely on the people in her community than a formal FSP. "[We] understand each other's way of life," she said. Her community members would be more willing to provide a loan without a fixed payback period and that is interest free. Nicholas, a 30-year-old male who has an informal taxi business in Kitwe, has similar frustrations with his automobile insurance provider. He opted for a minimum amount of insurance coverage because "insurance companies do not easily compensate victims [of accidents]." Buying a cheaper plan helps ensure that "even if I do not get compensated, I may not lose much money [in insurance payments]."

Community-based providers in the form or ROSCAs and ASCAs are informal FSPs that can serve as an alternative to formal financial services that are difficult for low-income individuals to access, particularly in rural areas. The indigenous version of the ROSCA in Zambia is the chilimba. Our respondents did not make regular use of chilimbas, and the in-depth interviews suggest that a

[10] The in-depth interviews revealed respondents' attitudes toward FSPs but not the respondents' knowledge about financial services. Consequently, we cannot determine from the in-depth interviews whether these feelings of distrust exist because of or despite an understanding of FSPs and their products.

primary reason for this was that respondents were concerned about other group members' ability to meet their contribution commitments.

Mary's experience with a chilimba demonstrates these issues in an ironic way. Mary is a 34-year-old micro-retail business owner in Western Province who joined a chilimba late in the study in hopes of getting money to address an undisclosed family problem. The group she joined had ten members, composed almost entirely of community members she knew. The group intended to meet each week and deposit ZMW 5. During those same meetings, the group would distribute the total sum collected to one member in turns. Mary received the deposited sum the first week she was in the group, but then she quit, never contributing to the group again. Her reason for leaving: *she did not trust the other group members to make their contributions*.

Respondents in other provinces, particularly in Lusaka Province, shared experiences in which their chilimbas disintegrated because people, like Mary, left groups after getting their payments. Henry, a 42-year-old male miner from Copperbelt Province, had a more positive experience with his chilimba. A key differentiator was the high degree of trust between group members—all group members knew each other's source of income and were confident that it was reliable.

The issue of trust also emerged on the supply side in relation to the availability of store credit. Respondents reported very few store credit transactions—either given or received—and the in-depth interviews suggest that that this is because storeowners are reluctant to extend credit to people, presuming they will not repay. Jack, a 34-year-old male micro-retail business owner in Copperbelt Province, refused to sell goods on credit because he had to use his profit to absorb any debts that buyers did not repay. Prudence, a 36-year-old female clothing vendor based in Lusaka Province, expressed similar frustrations with extending credit to customers. "I tried selling on credit but only one out of five of the debtors managed to settle the debt. The rest still owe me ZMW 100 each." She does not sell on credit any more—tracking down the debtors was too much energy, she said, and she preferred not to risk her capital in the form of lines of credit.

Not all respondents' interactions with FSPs were plagued with trust issues. Respondents that used formal financial services, particularly banks, on a regular basis did report benefits. James, a 43-year-old male farm manager who lives outside of Chongwe in the Lusaka Province, first got a bank account to receive his salary from his employer. He felt like his money was safe, and having an account had made him a more disciplined saver since the barriers to access made it difficult for him to spend saved money on unintended items. Henry, a 42-year-old male miner in Copperbelt Province, agreed. However, he was concerned about getting money when he needed it. In an emergency, the bank may be closed or the ATM may be down which would result in him having to turn to less desirable financial tools like loans, a concern shared by several other respondents.

Multiple respondents said that they could go to a village moneylender in a time of need. They are reliable and their terms—a 100 percent interest on the principle—are well known. However, borrowing from anyone that requires interest—regardless of whether it is formal or informal—makes one "panic" according to Esther, a 34-year-old dependent in Lusaka.

TIME HORIZONS

In addition to attitudes of distrust, the data suggest that respondents operate on short time-horizons. These horizons are identifiable by respondents' managing their purchases on a week-to-week basis. There is little evidence in the data for long-term planning. Asset purchases were rare,

and few respondents report making meaningful provisions for retirement or other life events that require future planning.

Mijere, a 32-year-old, male micro-retail business owner in Western Province, said that buying inventory on a weekly basis helps him limit waste by identifying which of his products are “fast moving and which are slow moving.” Lubinda, a 35-year-old, female businesswoman in Western Province sold fritters during the study. She would also rarely buy her ingredients more often than a weekly basis, hedging against any potential losses. Bonaventure, a male 24-year-old micro-retail business owner in Lusaka Province, was one of the few respondents that regularly sold high value items like stoves, mattress, or refrigerators. He and his brother-in-law, with whom he operates the business, tried to minimize how much capital they invested into inventory by getting advance orders from customers.

Respondents also managed their household purchases similar to business expenses. When asked about how they budgeted and planned for their household purchases, the consensus was: if a household had a budget, then they used it as a tool to manage day-to-day expenses rather than assist with long-term planning. Faith, a 43-year-old farmer based outside Chipata, said her household had “a budget, though not written down, and it only covered [our] household priorities; the rest [we] would buy as needs arise.” Other households chose not to make a budget at all. Naomi, a 29-year-old businesswoman in Lusaka, said that she did not write a budget at all, preferring, instead, to purchase goods that she needed on that particular day. Samuel is a 37-year-old farmer and sand vendor based in a small village outside Chipata. He too stated that his household, “[does] not have a written budget but would buy household items when need arise.” These attitudes toward financial planning remained consistent across the four provinces and suggest that respondents, due to either necessity or practiced behavior, did not use their budgets for long-term planning.

Case Example: Naomi, the Start-up Businesswoman

Naomi is a 29 year-old woman living in Lusaka with her husband and young children. When the Financial Diaries started, Naomi was a dependent, relying on her husband to provide her with weekly intra-household transfers she could use to buy household necessities. In order to both support her household and reduce her dependency on her husband, Naomi decided to start a business.

During a trip to her family's village, she realized that she could use baobab fruit as a means to start her business. She carried as many of the fruit as she could and brought them back to her home in Lusaka. From there, she brewed the fruit into a non-alcoholic drink that she then froze to make popsicles. She sold these home-made popsicles to earn a small amount of start-up capital that she used to buy freezits. She continued to buy and sell freezits until she had saved up enough money to buy butter, officially launching her own door-to-door grocery business.

Naomi's story displays her savvy, but it also depicts a strong aversion to risk. Rather than seeking a loan to acquire capital quickly and start her business, she took a slow and steady approach that required very little financial investment.

In the data, we see that she makes no real investment into her business until week 26 when she purchases her first case of butter (ZMW 145). She financed this purchase using the money she had saved from previous sales in weeks 19 and 25. It is only at this point that we begin to see Naomi start purchasing stock. Although we see her make these investments, Naomi also told us that she would travel to her customers' homes in order to take orders from them on what they would like to buy. Again, this displays an aversion to risk as she is only purchasing goods that she knows she can sell; she avoids the risk of buying items that might not earn her a profit.

Additionally, Naomi stated that she sells goods on credit to customers. For example, in week 52, she sold peanut butter, cooking oil, and butter on credit to different customers. While this practice required her to take on some risk, she said that she was able to mitigate it by collecting collateral such as DVD players and radios, small assets she could later sell in the event that a customer does not repay her.

The interviews also suggest that respondents treated savings as a means to address sudden and acute problems—like emergencies—rather than as a tool to build assets are or make investments. A common phrase expressed throughout the interviews was that savings "served [its] purpose," meaning that it came in handy when the time arose. Kenneth, a 45-year-old farmer and piece worker in Eastern Province, is an active member of a chilimba within his village. When asked about his reasons for participating in the chilimba, he said "[the] money is not saved for a specific item, but to be able to assist in case of any emergencies." Henry, the 42-year-old miner from Copperbelt, also shared a similar philosophy of saving to help pay for any unexpected events. While these opinions do allow respondents to insulate themselves from emergencies, they are not consistent with a long-term planning attitude.

Although many interviewees shared similar thoughts to those mentioned above, there were cases where respondents expressed a desire to save for something in particular. Benjamin is a 34-year-old miner from Copperbelt Province who hopes that he can one day save up enough money to buy his own car. Benjamin first opened his account with Barclays Bank in order to receive his salary from the mines; he then later opened a savings account with Barclays. He also opened an account with Stanbic Bank in hopes of gaining access to one of their car loans, but his employers discouraged him from following through with this. Now, he saves small sums of money in his bank account after each paycheck in hopes of one day buying his car. Moses, a 26-year-old grocer from Kitwe, is hoping to save ZMW 20,000 so that he can expand his business, and he opened a savings account at Zanaco

Bank during the study to try and accomplish this. He preferred to open his account at Zanaco, stating that it had an easier opening procedure than other banks.

Farmers were the only group who consistently reported engaging in future planning, although this was limited to making plans for the upcoming harvest seasons. For some, this planning would take place immediately after their most recent harvest and sale of produce, while others would wait until they were close to the sowing season. Collins, a 54-year-old farmer who lives outside Chipata, for example, would start planning the moment he sold all of his products by acquiring any seeds, fertilizer, or tools that he needed for the next season. Abigail, also a 54-year-old farmer outside Chipata, would wait until the next farming season approached, and would then "buy some bags of fertilizer and seeds in [preparation]."

CONCLUSIONS

The findings discussed above reveal respondents' mistrust of financial services and their practice of performing short-term instead of long-term planning. These characteristics create an environment in which respondents rely on either their own means or support from their friends and family to manage their cash flow, unusual purchases and events, and emergencies.

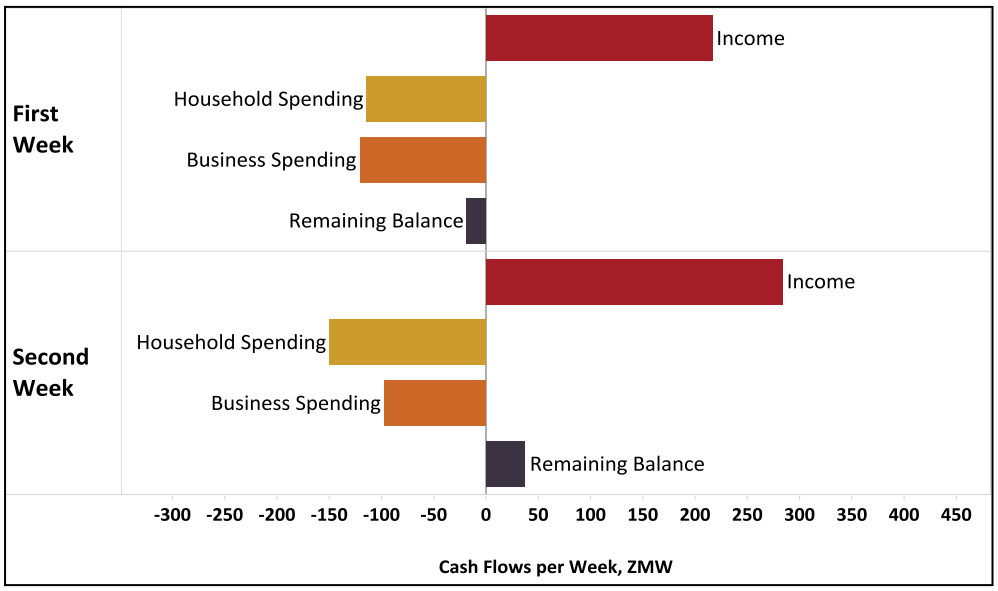
CHAPTER 4: CASH FLOW MANAGEMENT AND CONSUMPTION SMOOTHING

The previous chapters provided a description of respondents' four basic cash flow streams: the income they earned; their household and business spending; and the money that flowed through the financial tools they used. This chapter analyzes the confluence of these four basic streams of cash to understand how respondents used financial tools to manage their cash flow. The starting point for the analysis will be the concept of consumption smoothing.

Consumption smoothing is the idea that people want to stabilize their spending over time despite temporary changes in their income. In other words, an individual with basic, necessary expenditures each week will try to meet those expenditures each week regardless of unexpected gains and losses in his or her income. However, meeting those expenses can be challenging, especially in weeks when income cannot cover these basic necessities. However, the consumption smoothing concept suggests that individuals will be able to meet the deficit by "borrowing" against future income by relying on savings or debt.

For example, Figure 23 shows the challenge "Elizabeth," a hypothetical individual, might face. In the first week, she will have a small deficit if she purchases all her household and business necessities. She can make up that deficit in the following week with her increased income and slightly lower business spending, but that surplus is in the future. She must do something during the first week to cover the deficit.

Figure 23: The Consumption Smoothing Challenge



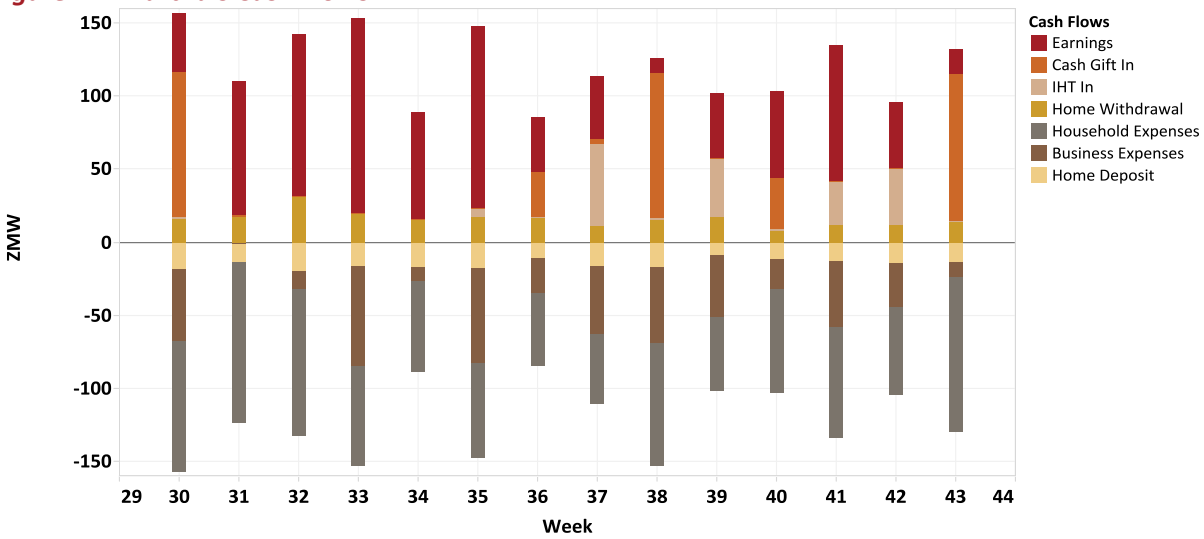
There are two ways "Elizabeth" can manage this situation. First, she can reduce her spending on household or business necessities, but this has obvious downsides. A reduction in household spending may cause her or her children to go hungry while a reduction in business spending may negatively affect her ability to earn money in the future.

The second option is to use financial tools in the first week to cover the shortfall. She could do this by taking money from her savings now and then replenishing it with her surplus from the second week, but she would need savings already to do this. She could attempt to secure a loan but would need to have developed a reputation as a low risk client for MFIs or local moneylenders to offer fair terms. Receiving a cash transfer from a family member or friend is also an option if she has good relationship with those people. However, the cash transfer may come with an implicit agreement that she reciprocate the transfer in the future.

Case Example: Eating Away at Business Capital

Martha started her business in week 30 to support her children. She had just been abandoned by her brother and needed money. She turned to her sister and her husband to help finance this business. Her sister sent her ZMW 100 through MTN to help her with this, while her husband provided her with an in-kind gift of three bags of charcoal, valued at ZMW 175. This gave Martha ZMW 275 in start-up capital that she could use to launch her business.

Figure 24: Martha's Cash Flows



Martha, however, ran into problems in keeping her business going. The main reason for this was her need to use money meant for business inputs to purchase food for her household. We see that she regularly made large purchases for household expenses that were often larger than her business expenses. While her home savings, cash gifts, and intra-household transfers helped mitigate this discrepancy, they did not fully cover her spending. During the 14-week period that she operated her business, her average weekly inflows were ZMW 121.5, and her average weekly outflows were ZMW 123. This meant that Martha was losing an average of ZMW 1.5 per week. Despite regularly using her home savings and receiving financial support, Martha was unable to use these tools to properly manage her business' cash flow, and it resulted in her expending all her capital. In the end, she chose to stop her business since she was not able to earn the money she needed to keep it operating and feed her family.

In the rest of this chapter we lay out this story in more detail, examining how individuals in the sample used financial tools to manage their cash flow. We use the income segmentation framework from Chapter 2 as a way to understand how different levels of and variation in income create different cash flow management challenges. Once we have analyzed the cash flow management challenges facing respondents, we look at how they used financial tools to manage those challenges.

INCOME SEGMENTS AND CONSUMPTION SMOOTHING

Respondents' average weekly income had a profound effect on their ability to live within their means. On aggregate, higher-income respondents were able to live within their means and ended the year with surpluses. Those with high-income and low-variation had an average weekly surplus of ZMW 65, while those with high-income and high-variation had an average weekly surplus of ZMW 112. For the low-income respondents the picture was very different. On average, they spent more than they earned. Those with low-variation averaged a deficit of about ZMW 11 per week, while those with high-variation averaged a deficit of ZMW 33 per week (Figure 25).

Figure 25: Average Income, Spending and Balances by Income Segment

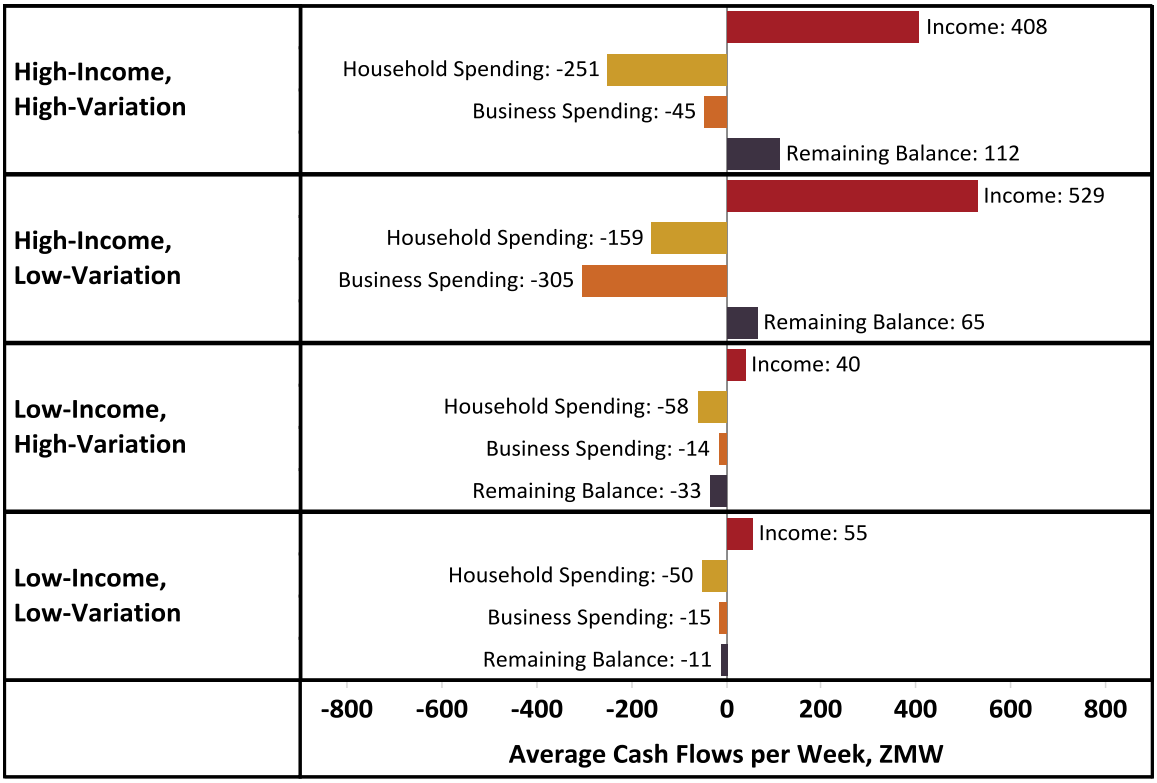


Figure excludes respondents whose main source of income was transfers from other members of their household. Including these respondents increases the negative balances of the low-income respondents considerably.

There was also a clear difference in the cash flow management challenges faced by respondents with high-income variation compared to those with low-income variation. In Table 12, we show the number of deficit weeks that each segment experienced as a proportion to all of the weeks for which we have data for that segment. A deficit week is a week when business and household spending exceeded income. Those with low-variation experienced deficits 39 percent of the time, while those with high-variation experienced them 60 percent and 53 percent of the time depending on whether they were high-income or low-income individuals respectively.

Table 12: Proportion of Deficit Weeks by Segment

Segment	Proportion of Deficit Weeks to Total Weeks
High-Income, High-Variation	60%
High-Income, Low-Variation	39%
Low-Income, High-Variation	53%
Low-Income, Low-Variation	39%

Examining the degree to which weekly income and weekly household spending move together can also provide insight into whether our respondents smoothed their consumption. An association between income and household spending would suggest that respondents were not smoothing their consumption in the face of volatile income—that changes in income from week to week resulted in changes in spending from week to week. The lack of an association would suggest that either

respondents were smoothing their consumption or there was some factor other than income volatility driving week-to-week changes in their spending.

We found a weak association between income and household spending across the sample. The correlation coefficient was 0.12, where a coefficient of one (or negative one) indicates a one-to-one match between changes in income and household spending and a coefficient of zero indicates no correlation.

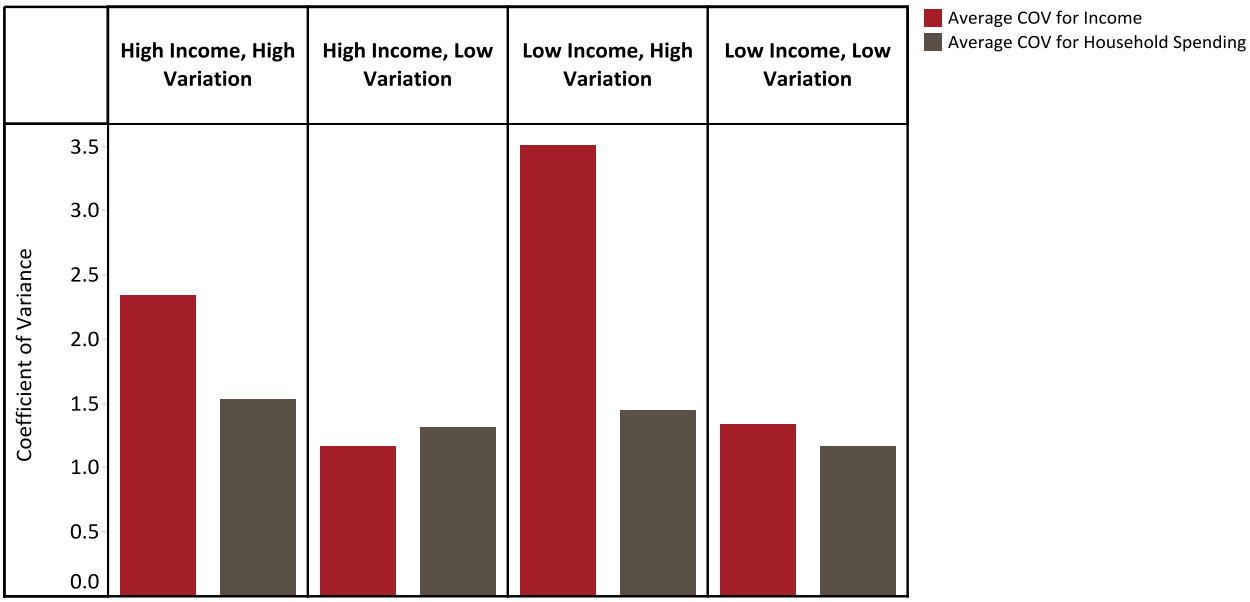
There is little difference in the correlation coefficients of men's and women's income and spending.[11] The correlation between income and spending varied across income segments. The two segments with high-variation in their incomes had lower correlations than the low-variation segments.

Table 13: Correlation between Income and Household Spending by Income Segment

Segment	Correlation Coefficient Household Spending and Income
High-Income, High-Variation	0.10
High-Income, Low-Variation	0.24
Low-Income, High-Variation	0.17
Low-Income, Low-Variation	0.24
Total	**0.12**

All of the segments had roughly the same level of spending variation—their coefficient of variance was around 1.4. By definition, their income variation was different from segment-to-segment. In addition, in all but the high-income/low-variation segment, the variation in income was greater than the variation in spending (Figure 26). In other words, respondents in our sample generally spent money more consistently than they earned it.

Figure 26: Income and Spending Variation by Income Segment



[11] The correlation coefficient was 0.125 for men 0.134 for women.

FINANCIAL TOOLS AND CONSUMPTION SMOOTHING

In order to smooth their consumption, respondents made extensive use of financial tools that they trusted. This was reflected in how the respondents managed in weeks when their household and business spending exceeded their income. In these weeks, respondents received support from intra-household transfers and friends and family outside of the household and relied on their home savings (Table 14). The higher-income segments also used informal and formal financial services. In these cases, the most common type of service they used was a cash withdrawal from a bank account. But these financing mechanisms were just as likely to bring in the same amounts in weeks when the respondents had a positive balance—the average amount sourced from informal and formal FSPs in surplus weeks was roughly the same as in deficit weeks. In contrast, the average amounts people received from friends and family or withdrew out of home savings were far higher in deficit weeks than they were in surplus weeks. As a result, informal and formal FSPs do not seem to have been helping respondents fill in a gap between earning and spending, but were being used for other purposes—something we will look into more in the next chapter.

Table 14: Weekly Income and Spending Balances and Financial Inflows by Income Segment (ZMW)

	High-Income, High-Variation		High-Income, Low-Variation		Low-Income, High-Variation		Low-Income, Low-Variation	
	Surplus	Deficit	Surplus	Deficit	Surplus	Deficit	Surplus	Deficit
Average Balance	700	-338	272	-254	38	-96	28	-71
Home Savings	55	182	63	169	9	53	6	36
IHT	4	27	1	28	1	13	1	11
Friends & Family	8	38	5	26	3	44	2	25
Informal Financing	14	14	2	20	1	8	1	5
Formal Financing	270	175	57	65	4	26	0	13

Note: Balance = Income – Household Spending – Business Spending; IHT = Intra-household transfer.

In sum, the evidence from the Zambia Financial Diaries is quite clear. People largely relied on their home savings, intra-household transfers, and friends and family to manage in weeks when their spending exceeded their income. The one exception was people in the high-income/high-variation segment who were the group most likely to be paid a salary through a direct deposit into their bank account. They made use of formal financial services, in the form of cash withdrawals from a bank, to make end meets in deficit weeks.

The data also suggest that managing money to make ends meet and smooth consumption using financial tools was not a marginal activity for the respondents in the Diaries study; it was a significant one as can be seen by how much money they were moving through their financial tools each week. There are a number of ways to calculate how much money people move through financial tools as compared to how much money they earn and spend. One method is to compare the ratio of money being moved through all financial tools against all income and expenditures unrelated to a financial tool. In developed countries, this ratio might be close to one. It may be greater for middle-income people because they receive their salary by direct deposit and pay for almost everything with a

credit or debit card. Even those payments they make with cash have their origins in the use of a financial tool because the individual most likely got the cash by withdrawing it from an ATM.

In a country like Zambia, one might not expect the ratio to be as high because direct deposits of salaries into bank accounts are rare and most purchases of goods and services are made in cash. The data support this conclusion. The ratio of cash flowing through financial tools to the respondents' overall income and spending was 0.53. This ratio includes internal household flows—all home savings deposits and withdrawals and all intra-household transfers.[12]

There were large differences in these ratios across income segments. As with the data on deficit weeks, these differences appear to be related to income variation. Among low-income respondents, respondents with high-variation in their income had a ratio of 1.15. Respondents with low-income and low-variation in their incomes had a ratio close to the average for the sample (0.58). Among the high-income respondents, those with high-variation in their incomes also had a higher ratio (0.86) than their lower variation counterparts (0.39).

Table 15: Ratio of Flows through Financial Tools to Total Income and Spending

Segment	All Flows through Financial Tools	Flows through External Financial Tools	Flows through Financial Services
High-Income, High-Variation	0.86	0.43	0.37
High-Income, Low-Variation	0.39	0.13	0.09
Low-Income, High-Variation	1.15	0.46	0.22
Low-Income, Low-Variation	0.58	0.18	0.08
Total	**0.53**	**0.21**	**0.16**

As has been previously mentioned, much of the respondents' financial tool use involved tools within the household. The low-income/high-variation segment's ratio, for example, was largely driven by respondents cycling money through their home savings and receiving intra-household transfers from other members of their household. If we examine just the financial tools used with people and organizations outside of the household, the overall ratio of money flowing through such financial tools to overall income and spending falls to 0.21 across the sample.

If we focus solely on financial services (financial tools provided by FSPs), the ratio falls to 0.16. The high-income/high-variation segment had a fairly high ratio of financial flows to income and spending in comparison to the other segments. This was due to the fact that this segment includes a group of formal employees who received their income monthly through direct deposits. These respondents had a high variation in their income—because they only received their income monthly—and they had to use a financial tool to get access to any money they wanted to spend.

[12] We have, again, excluded dependents from the analysis. If dependents had been included in this calculation the ratio would have been higher due to the fact that dependents have few earnings and get most of their cash inflows through a financial tool—an intra-household transfer.

Case Example: Moses, the Successful Grocer

Moses is a grocer based in the city of Kitwe in Copperbelt Province. Before moving to Kitwe to open his shop, he lived in the city of Lusaka and had worked in a small store there for several years. After gaining enough experience, Moses moved to Kitwe to open his own shop, which is now situated along a main road in the city. He most commonly sells food items, like mealie meal and cooking oil, as well as airtime and other household items.

Moses earned and spent large sums of money. On average, he earned ZMW 5,674 and reinvested about ZMW 5,189 back into his business each week. When he had money leftover at the end of a business day, he would keep it somewhere safe at home before converting it back into stock later in the week. Although Moses opened a new savings account with Zanaco Bank in week 34, he only made one other deposit into the account in week 39. He said that he preferred to save at home "due to long queues and the bank being located far from my shop." Aside from those two instances, Moses' only other interactions with formal financial services were the use of the mobile money platforms Zoona and SwiftCash.

Moses received regular, large inflows each week from his grocery business, providing him with a stable set of income that covered his expenses. In addition to his weekly business expenses, he also spent about ZMW 364 per week on household purchases. Even with these additional expenses, his income was regularly able to cover his expenses. This gave Moses less of a need to use financial services since he did not need to smooth his consumption as regularly, although there were instances of him using his home savings to help cover his deficit weeks. For example, in week 50, Moses had a surplus of ZMW 1,220, but in week 51, he had a deficit of ZMW 234. He was able to use his leftover money from week 50 to cover his deficit in week 51.

Moses represents the typical high-income, low-variation respondent whose large and steady income covers his weekly expenses. These respondents are generally able to cover their expenses without needing to use formal and informal financial service providers. They may recognize that these services can help them manage their money, but many respondents, such as Moses, prefer to use home savings due to its convenience.

In sum, the data show that the respondents in the Diaries study moved more than half of what they earned and spent through financial tools. Furthermore, the data show that the extent to which respondents used financial tools to manage their cash flow and smooth consumption depended as much on the extent to which their income varied from week to week as it did on the overall level of their income (their average income over the course of the study).

Case Example: Phalesy and Liyelu, Varying Uses of Financial Tools

Phalesy and Liyelu are both smallholder farmers located in villages outside of an urban area. Phalesy is based in a small village outside of Chipata, while Liyelu is based in a village outside Mongu. Phalesy primarily grows vegetables, sunflowers, maize, and cotton, while Liyelu primarily grows vegetables. Phalesy also has a small side-business of selling cooked meats.

Although Phalesy and Liyelu have similar livelihoods, the ways in which they earned money and used financial tools varied drastically. Phalesy made large sales of maize and cotton to provide her with large inflows. For example, in week 6, she sold 23 bags of maize and earned ZMW 1,610 from her sale. Similarly, she sold cotton in July and earned another ZMW 527. Although her side business was able to help provide her with additional income, these large, bulky sales accounted for a large portion of her income. When spread across the study, her large sales averaged ZMW 96 per week. Liyelu only earned money through the sale of his vegetable crops. He was able to use the rivers near his house to grow his crops year-long, explaining why his vegetable sales were non-seasonal. Typically, he earned ZMW 62 per week, providing him with a slightly steadier income than Phalesy, but his inflows were smaller, on average, than hers were. This gave him less freedom to save his money and use it in the future as he had to spend what little he had to cover his basic needs.

These differing income patterns, in turn, help to explain Phalesy and Liyelu's varying use of financial tools. Phalesy, on the one hand, regularly used her home savings account, treating it as a kind of checking account that she continuously withdrew from and deposited into. She continued to do this, spending down her savings, until she could make another large sale to boost her funds. For example, she was able to use the money she earned in week 6 to cover the majority of her expenses for the next two months. Liyelu, on the other hand, rarely used his home savings during the study. He only reported accessing it 11 times during the study, most of which involved making deposits during large surplus weeks.

These two farmers' varying uses of financial tools reflect their different circumstances. Liyelu depicts a farmer who was simply trying to make ends meet from week to week. He made regular sales of his vegetable crops that provided him with small sums that he tried to save when he was able. Phalesy represents a different type of farmer who was able to sell valuable crops in bulk and live off her profit until her sales in the next season.

CHAPTER 5: MANAGING UNUSUAL PURCHASES AND EVENTS

One of the central roles of financial tools is to help people manage unusual purchases and events. As Rutherford (2000) explains, people use financial tools to accumulate "useful lump sums" to cover an unusually large purchase of a good or service. The lump sum might be in the form of accumulated savings withdrawn from an account, a loan, a transfer of money from someone else, or an insurance pay out. The decision to purchase such a good or service might be triggered by a number of different situations: a life-cycle event such as a wedding; an emergency that requires a large expenditure on such things as a hospital bill; or the desire to make an investment in one's home or business. People can also use useful lump sums to manage large fluctuations in their cash flow that may occur they fall on hard times.

We begin this chapter with a discussion of what tools the respondents in our sample used to finance lump sum purchases, including the purchase of an asset. We will then discuss how they responded to life cycle events and emergencies and what financial tools, if any, they used as part of that response.

MANAGING LUMP SUM PURCHASES[13]

Respondents made a lump sum purchase every five weeks. The most common lump sum purchases for both household and business purposes were food related. Household food purchases were of staple foods or meat for special occasions. Food purchases for a business purpose included inputs for production of prepared food items such as fritters, the purchase of packaged food for resale in a store, or the wholesale purchase of farm produce for resale at a roadside stand. Household items ranged from bottles of shampoo to pieces of furniture for the house, which households bought for their own use and businesses bought for resale. Rent payments represented almost all of the housing lump sum payments for households, while school fees made up most of the education purchases. Household transport lump sum purchases were bus fares and other traveling-related expenses.

Most of the agricultural lump sum purchases were fertilizer, while the fuel purchases were predominantly charcoal, which was either resold by our respondents or used to cook prepared foods. Bulk airtime purchases for resale made up most of the communications lump sums.

Table 16: Top 5 Categories of Lump Sum Purchases by Purpose

Household Purchases			Business Purchases		
Item	**Count per Week**	**Amount per purchase (ZMW)**	**Item**	**Count per Week**	**Amount per purchase (ZMW)**
Food	0.026	224	Food	0.039	667
Household item	0.011	569	Household item	0.023	993
Housing	0.010	589	Agriculture	0.014	805
Education	0.006	577	Fuel	0.009	266
Transport	0.005	350	Communication	0.007	1401
All Purchases	**0.083**	**476**	**All Purchases**	**0.107**	**751**
Guide to interpreting counts per week					
Once per month				0.22	
Once every six months				0.04	
Less than once per year				<0.02	

We looked at the sources of cash inflows respondents used in weeks when they made either a business or a household lump sum purchases. What we see is that respondents increased the amount they earned, withdrew from home savings, withdrew from an FSP savings account, and received from someone else either in the form of an intra-household transfer or cash gift (Table 17).

[13] A sum of money which is unusually large for the individual in question—more than three standard deviations above the average household expenditure. A lump sum can serve a number of purposes, such as: buying an asset, purchasing business stock, buying items in bulk, paying for an event, responding to an emergency, etc..

Table 17: Financing Lump Sum Purchases - Amounts (ZMW)[14]

Inflow Source	Spending in a Typical Week	Spending in Weeks with a Household Lump Sum Purchase	Spending in Weeks with a Business Lump Sum Purchase
Income	189.36	485.00***	707.66***
Home Savings Withdrawal	51.64	151.60***	204.02***
FSP Account Withdrawal	35.63	234.91***	119.63***
Intra-Household Transfer	33.23	164.94***	64.88***
Cash Gift	15.12	57.19***	37.74***
Loan	2.09	20.38	18.60
Loan Repayment	2.90	6.41**	7.02*
Other Financial Source	2.14	6.69	4.33

Looking more closely at these data to see whether these increases reflected a real change in the distribution of a respondent's funding sources, we see that there was a shift towards FSPs as a funding source in weeks when they had either a business or household lump sum purchase, but it was still a small share of total funding. In an ordinary week, a withdrawal from an FSP account would represent about 2.5 percent of the amount of money spent that week. In weeks when there was a household lump purchase, the proportion of spending being funded by such a withdrawal increased by over four percent. The increase was less in weeks when the respondent made a business lump sum purchase. Despite these shifts in funding sources, the dominant sources of cash inflows in weeks when people made lump sum purchases were income, home savings withdrawals, intra-household transfers, and cash gifts from outside the household (Table 18).

Table 18: Financing Lump Sum Expenditures - Proportions of Average Weekly Spending

Income Source	Proportion in Typical Week	Proportion in Weeks with Household Lump Sum Expenditures	Proportion in Weeks with Business Lump Sum Expenditures
Income	41.53%	45.34%***	51.03%***
Home Savings Withdrawal	25.67%	17.67%***	21.22%***
FSP Account Withdrawal	2.53%	6.91%***	4.18%***
Intra-Household Transfer	18.28%	17.78%	13.43%***
Cash Gift	9.86%	10.23%	7.72%***
Loan	0.57%	0.67%	0.61%
Loan Repayment	0.80%	0.74%	0.76%
Other Financial Source	0.28%	0.32%	0.24%

ASSET PURCHASES

We identified a total of 273 asset purchases made by 143 of the 355 respondents during the study. One hundred and sixty three asset purchases (60 percent) were for a household purpose while the remaining 110 asset purchases (40 percent) were for a business purpose. The most common assets purchased for the household were construction materials (70 purchases), especially roofing sheets (22 purchases) and cement (16 purchases). Purchases of household items, such as kitchen utensils, were the next most common with 31 purchases of these items. Respondents also purchased 20 cell phones. The average size of the household asset purchases was ZMW 1,080 compared to ZMW 394 for the non-asset lump sum purchases we identified. Part of this difference was driven by three land purchases (ZMW 25,166 on average). Removing these three purchases from the calculations, the

[14] There were 106 weeks in which respondents made both business and household lump sum purchases. We have omitted these from the analysis because of the small number of instances when this happened.

average size of a household asset purchase was ZMW 628, which was driven by the high cost of building materials (ZMW 660 per purchase on average).

Sixty-five of the 110 business asset purchases (59 percent) were on livestock, including 44 purchases of goats. The majority of the remaining purchases were on construction items or items that could be used to improve a farm. Respondents bought iron sheets, stone, sand, and water pumps, among other items. The average business asset purchase was ZMW 743.

Table 19: Household and Business Asset Purchases

	Household		Business		Total Number of Purchases	Total Average of Amount (ZMW)
Type of Purchase	Number of Purchases	Average of Amount (ZMW)	Number of Purchases	Average of Amount (ZMW)		
Livestock	25	296	65	492	90	438
Construction	70	660	10	1,248	80	733
Household item	31	729	15	1,041	46	831
Communication	21	351	9	1,180	30	600
Transport	6	1,740	6	464	12	1,102
Agriculture	4	18,975	4	1,530	8	10,253
Education	3	920			3	920
Fuel	2	675	1	2,100	3	1,150
Housing	1	2,000			1	2,000
Total	**163**	**1080**	**110**	**743**	**273**	**944**

The data suggest that respondents drew on a wide variety of sources to pay for the assets they bought. In weeks when they bought assets, they tended to have earned more income, withdrawn more from their home savings, withdrawn more from their bank accounts, received more transfers from friends and family, and used informal financial services more. Given the small sample of asset purchases, these data are suggestive, but also consistent with the broader pattern of financing lump sum purchases described in the above tables (Table 17 and Table 18).

Table 20: Asset Purchase Financing (ZMW)

Source of Funds	No Asset Purchase	Asset Purchase	All Weeks
Income	242	851	**251**
Home Savings Withdrawal	66	298	**69**
Friends and Family	61	154	**62**
Informal Financial Service	8	42	**9**
Formal Financial Service	54	412	**59**

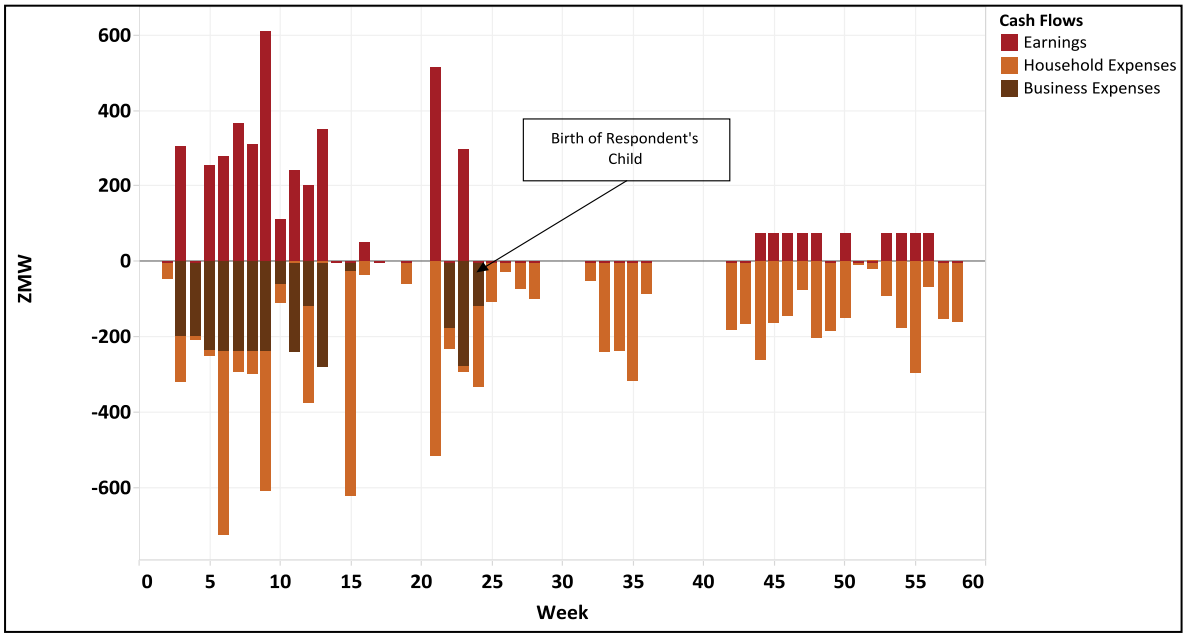
LIFE CYCLE EVENTS

There were two major life cycle events identified in the data: births and weddings. In the study, there were 32 births where the respondent either gave birth or reported someone else in the household giving birth. There were also 38 weddings.

An analysis of the week during which a respondent or someone in their household gave birth and the weeks following shows that there is little impact on income and on the respondent's financial behavior. But there is data that suggest that women and men experience the consequences of the birth of a child very differently. For example, a female respondent was earning a steady income up

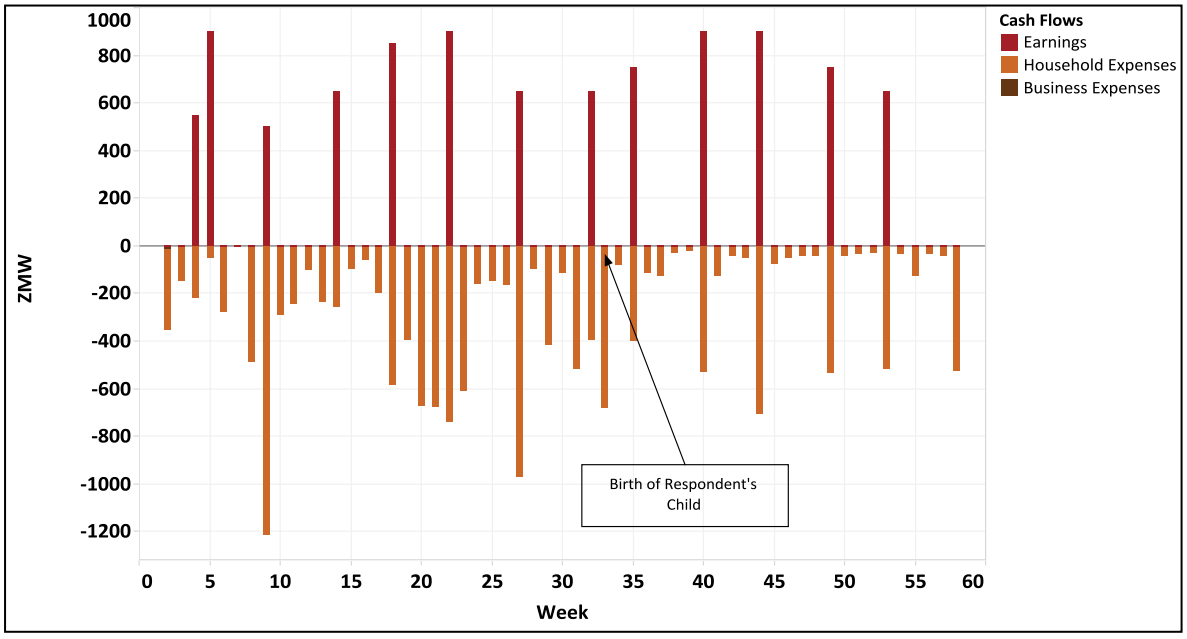
to a few weeks before her baby was born (week 24). After that, her income and household spending dropped off dramatically. Her spending did recover as she began to receive more intra-household transfers from her spouse, but her earnings never fully recovered during the course of the study (Figure 27).

Figure 27: Income and Expenses Before and After Childbirth, Woman



In contrast, a male respondent earned a steady income up until the birth of his child in week 33 and continued to do so after the birth (Figure 28).

Figure 28: Income and Expenses Before and After Childbirth, Man



An analysis of the impact of weddings suggests that respondents experienced an increase in income and an increase in household spending in the week leading up to the wedding and the wedding week itself. It is unclear what the dynamics driving this were. One possibility is that people anticipated having to spend money on the wedding and sought to increase their income in anticipation of having to make those additional expenditures.

EMERGENCIES

Of the 355 respondents, 168 reported a funeral in at least one of the interviews our enumerators conducted with them. We looked at the impact on income and household spending in the week before, during, and after the funeral and the analysis suggests there was no difference in either income or spending from the weeks when there was no funeral.

Over 200 respondents reported confronting a medical issue in at least one week during the study period. Looking at the week in which the medical issue occurred and the following week, we see a negative impact on earnings, but there does not seem to have been any discernible impact on inflows through financial tools, such as home savings or cash gifts from friends and family.

Managing Unexpected Events: The Story of Edinah

Edinah is an elderly landlord based in Lusaka city who lives with some of her children. She earned an average of ZMW 592 per week from her rentals, and she was a regular user of formal and informal financial services.

In week 41, Edinah received news that her son, Thomas, was involved in an accident and had damaged someone's property. The police arrested Thomas that day and contacted his mother. In order to help her son, Edinah withdrew a large sum of money from her home savings to help cover her son's costs. In addition to a ZMW 400 police fine, Edinah also had to pay ZMW 760 worth of construction materials in order to repair the damage Thomas had caused.

Although Edinah made regular use of her chilimba and savings account at Investrust Bank during the study, she chose to withdraw from her home savings to cover these unexpected charges due to the urgency of the situation. Withdrawing the almost ZMW 1,200 from her home savings was faster than going to a bank or trying to work out an arrangement with her chilimba. Although her bank and chilimba provide her with secure places to save her money, they do not always offer the same convenience that her home savings do.

CHAPTER 6: IMPLICATIONS AND POLICY RECOMMENDATIONS

The findings from the Financial Diaries suggest that those who participated in the study lead complex economic lives and used financial tools to manage their cash flow and accumulate useful lump sums. The data suggest that the financial tools they used were largely home based, or provided by friends and family. There was limited activity with financial service providers (FSPs).

This report discussed these issues within a particular framework—the income segmentation framework. That framework highlighted the importance of the level of *and* variation in income in understanding the behavior of the respondents. The framework can also help us think about the implications of this study.

The data show clearly that the respondents who were in the two low-income segments were extremely poor and not making ends meet. Policy-makers and FSPs should collaborate to identify cost effective ways to get money into the hands of the people in these two segments. This could be through government-to-person cash transfer programs; grant programs funded by international NGOs or church networks; or even crowd-sourced funds. This would have two beneficial effects. First, it would increase the resources of the individuals targeted and undoubtedly have an impact on

their well-being. Second, it would create a reason for people in this segment to start interacting with the formal financial service system, because we propose that the money grants be transferred to the intended recipients through the formal financial system.

With respect to the higher-income segments, FSPs need to recognize that the people in these segments are handling considerable sums of cash, and they could benefit from financial services that meet their basic cash flow management needs. For those with low-variation in their incomes, especially those running micro-retail businesses, there is an opportunity to offer them small loans. For those with more varied incomes, good savings services might be more appropriate. In either case, FSPs need to also focus on building a relationship with people in these segments. They are not currently using the services of FSPs very extensively, and part of the reason for that is that they do not like having to pay fees and interest, and they do not trust FSPs to give them a fair deal.

TECHNICAL ANNEX

METHODOLOGY

We selected the Zambia Financial Diaries sample from a purposively developed sample frame.

The priority was to develop a sample that, while not statistically representative, was still reflective of the varying levels of financial service access and livelihoods of low-income Zambians. We selected four provinces—Copperbelt, Eastern, Lusaka, and Western Provinces—that contained a diverse mix of urban and rural respondents, various levels of financial access, and a preponderance of individuals involved in informal businesses (Lusaka Province), the mining sector (Copperbelt Province), or farming (Eastern and Western Provinces).

Within each of these provinces, we purposively selected districts to meet the logistical requirements of the methodology. The two major requirements were that the districts needed to include a town with sufficient services to support a field team for a year (especially reliable telephone network access) and the ability for field teams to reach field sites within one and a half hours of the town.

We randomly selected standard enumerator areas, defined by Zambia's Central Statistical Office, within each district, and we selected households using a random walk. The field team used Kish grids to select a respondent within a household.

SAMPLE: RESPONDENT CHARACTERISTICS

DISTRIBUTION OF RESPONDENTS

Overall, women made up a greater proportion of the sample than men did. This was true in each province, though men made up a greater proportion of the sample in Eastern Province than in the other provinces.

Table 21: Gender by Province

	Copperbelt	Eastern	Lusaka	Western	Total	Average Number of Interviews per Respondent
Male	40%	49%	34%	37%	**40%**	49.2
Female	60%	51%	66%	63%	**60%**	44.7
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**46.5**

We had varying levels of participation in the study in each province. Copperbelt Province had a lower number of respondents than the other sites due to the poor data quality of one enumerator whose data we chose to exclude.

Table 22: Gender by Province

	Copperbelt	Eastern	Lusaka	Western	Total
Male	21	54	31	37	**143**
Female	31	57	60	64	**212**
Total	**52**	**111**	**91**	**101**	**355**

AGE, HOUSEHOLD ROLE, AND HOUSEHOLD SIZE

The average age of the sample was slightly under 38 years old. The men were almost two years older than the women were on average. Respondents in Eastern and Western Provinces were older than respondents in Copperbelt and Lusaka Provinces were.

Table 23: Average Age by Gender and Province

	Copperbelt	Eastern	Lusaka	Western	Total
Male	35.1	43.1	34.1	38.6	**38.8**
Female	29.0	40.2	33.1	41.8	**37.0**

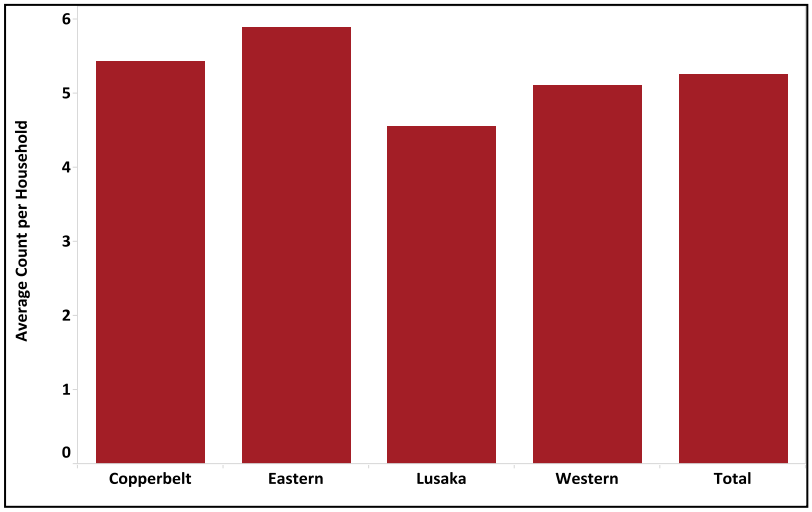
During enrollment, we asked respondents to identify their roles in the household. Men reported being the head of house at greater rates than women did across all four provinces. Women in Eastern and Western Provinces reported being the head of house at greater rates than women in Copperbelt and Lusaka Provinces did. A majority of women reported being the spouse in the household except in Western Province, which had a greater representation of adult daughters than the other provinces.

Table 24: Household Role by Gender and Province

	Copperbelt		Eastern		Lusaka		Western	
	Male	Female	Male	Female	Male	Female	Male	Female
Head of House	95%	10%	87%	42%	77%	25%	86%	34%
Spouse	-	71%	-	51%	-	57%	-	44%
Adult Son	-	-	11%	-	19%	-	14%	-
Adult Daughter	-	13%	-	7%	-	17%	-	22%
Male In-Law	-	-	-	-	3%	-	-	-
Female In-Law	-	3%	-	-	-	-	-	-
Other Dependent	5%	3%	2%	-	-	2%	-	-
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

The average household size was just over five people per household. There was little variation in this across the four provinces, though respondents in Eastern Province had slightly larger households (six people) than the other provinces did, and respondents in Lusaka Province had slightly smaller households (about four people) than the other provinces did.

Figure 29: Average Household Size per Province

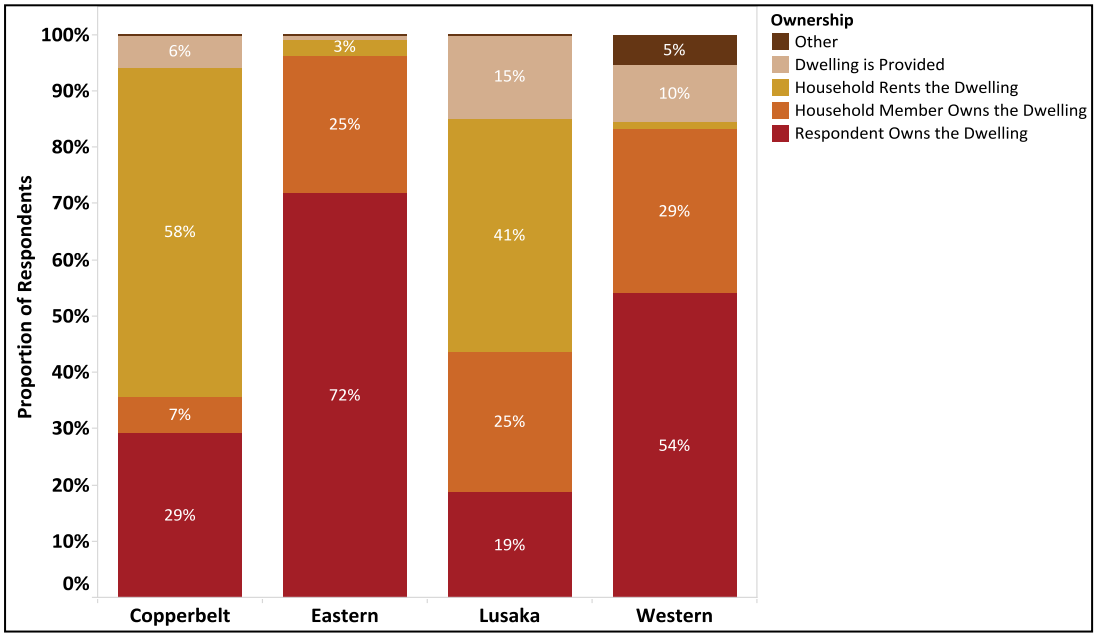


RESPONDENTS' HOUSEHOLD OWNERSHIP AND ACCESS TO UTILITIES

As discussed in Chapter 1, a majority of respondents reported owning their homes. The rate and formality of home ownership varied considerably by province. In Eastern and Western Provinces, almost all respondent households owned their homes, but very few households had titles or deeds for their properties. In Lusaka Province, 44 percent of respondent households owned their homes, and a majority of households who owned their homes had titles or deeds for their properties. In

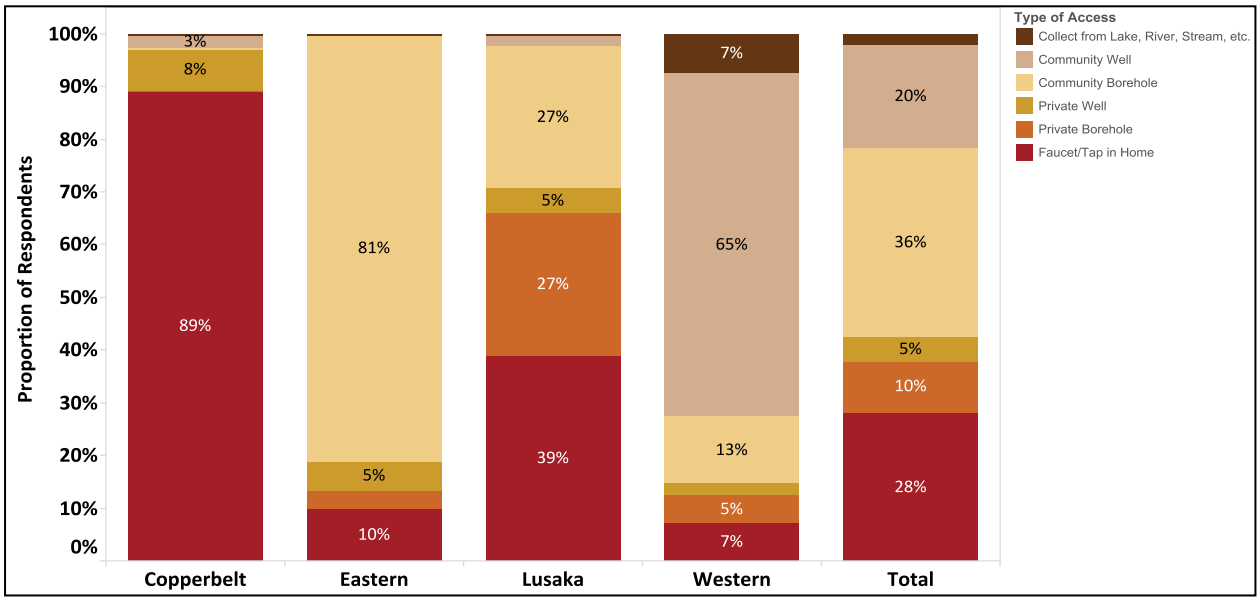
contrast, in Copperbelt Province, respondent households were more likely to rent (58 percent) than own their dwellings (36 percent).

Figure 30: Household Ownership by Province



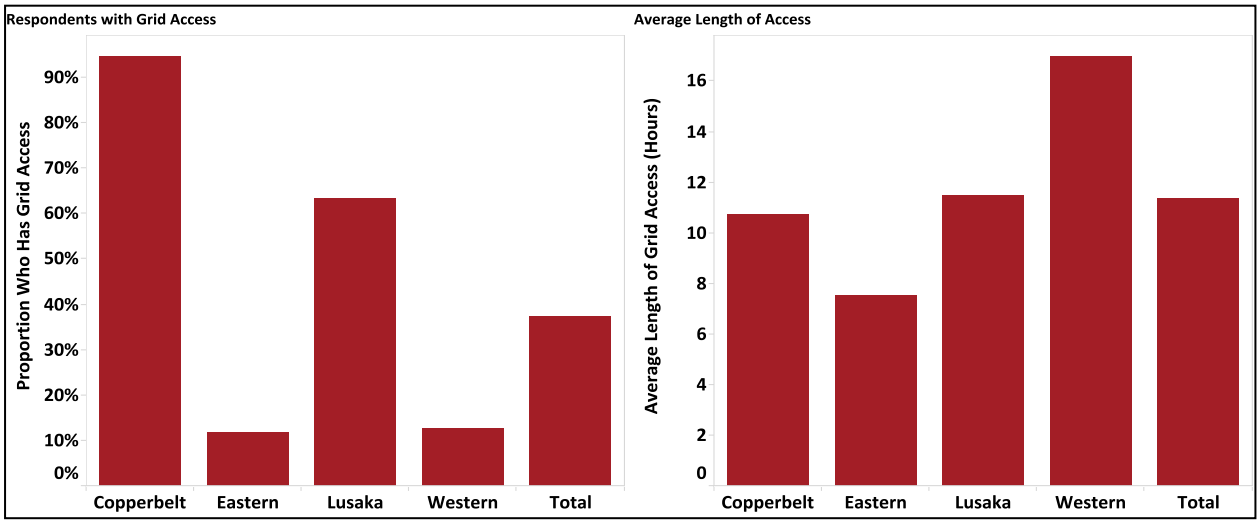
The total sample reported acquiring water through some form of community or open-access source. Looking at the provinces individually, however, shows that the sites differed on their primary sources of water. In Copperbelt Province, for example, a vast majority of respondents reported accessing water through a faucet or tap within the home. In Lusaka Province, a large share of respondents also reported this, but respondents were also likely to report accessing water through a private borehole or a community borehole. Respondents in Eastern Province were most likely to access their water through a community borehole, and respondents in Western Province were most likely to access their water through a community well.

Figure 31: Water Access by Province



Less than half of the sample reported having access to grid electricity. This is due to the very low levels of electrification in the Eastern and Western Provinces though, as a majority of respondents in Copperbelt and Lusaka Provinces reported having grid access. For respondents who did have access to grid electricity, the average length of access was roughly 11 hours per day.

Figure 32: Access to the Electrical Grid by Province



LIVELIHOODS AND POVERTY SCORES

Using the same livelihood codes that we introduced in Chapter 2, we were able to breakdown which livelihoods were most common in each province. Farmers, for example, were more likely to be found in Eastern Province than in other provinces, while micro-retail businesses were more likely to be found in Western Province. Formal workers had a greater presence in Copperbelt Province than in other provinces.

Table 25: Livelihood by Province

	Copperbelt	Eastern	Lusaka	Western	Total
Micro-Retail Business	2	26	26	48	**102**
Farmer	1	40	2	29	**72**
Informal Labor Services	5	26	17	21	**69**
Formal Worker	20	4	7	1	**32**
Dependent	24	15	39	2	**80**
Total	**52**	**111**	**91**	**101**	**355**

As mentioned in Chapter 1, we asked respondents a series of questions from the Progress out of Poverty Index (PPI) that captured their likelihood of living below the poverty line. The following compares respondents' likelihood of living below the Göttingen Poverty Line of $2.00 per day.[15]

Similar to our discussion in Chapter 1, we reviewed PPI scores by province, which revealed some notable differences in poverty likelihoods. Respondents in Eastern Province were the most likely group to be living below the poverty line, followed by Western Province, while respondents in Copperbelt Province were the least likely to do so.

[15] The $2.00 figure mentioned here was adjusted based on the purchasing power parity (PPP) from 2005.

Table 26: PPI Scores by Province

	Average PPI Score	Likelihood of Living below the Poverty Line
Copperbelt	71.4	28.5%
Eastern	36.7	96.4%
Lusaka	56.1	56.5%
Western	41.0	89.2%

Micro-retail business owners, farmers, and informal service workers all had very high likelihoods of living below the poverty line. Formally employed workers were the least likely among the different livelihoods to be living below the poverty line.

Table 27: PPI Score by Livelihood

	Average PPI Score	Likelihood of Living below the Poverty Line
Micro-Retail Businesses	45.1	83.3%
Farmer	35.5	96.4%
Informal Labor Services	46.5	83.3%
Formal Employment	70.4	28.5%
Dependent	57.8	56.5%

RESPONDENT TRANSACTIONS

INFLOWS

In Chapter 2, we explored the weekly income behavior of respondents by livelihood. Continuing from that section, we examine the same characteristics by gender. Men had more sources of income than women did and earned more than twice what women earned per week, on average.

Table 28: Income and Income Sources by Gender

	Number of Income Sources	Average Weekly Income (ZMW)
Male	5.3	364
Female	4.5	170
Total	**4.8**	**253**

If we take into consideration that women were more likely to be dependents, it would make sense for them to have fewer income sources and earn less than men did, on average. If we exclude dependents from the analysis, women had a slightly greater number of income sources than men did, but women still earned roughly two-thirds of what men earned.

Table 29: Income and Income Sources by Gender, Excluding Dependents

	Number of Income Sources	Average Weekly Income (ZMW)
Male	5.4	378
Female	5.8	252
Total	**5.6**	**318**

Respondents in Copperbelt Province earned the most per week, on average, while those in Eastern Province earned the least. Respondents in Western Province had the greatest number of income sources, while respondents in Copperbelt Province had the fewest, though they only had slightly fewer sources than respondents in Lusaka Province did.

Table 30: Average Weekly Income and Number of Income Sources by Province

	Number of Income Sources	Average Weekly Earnings (ZMW)
Copperbelt	2.3	479
Eastern	5.6	127
Lusaka	2.7	260
Western	7.1	285

The data suggest that the respondents' incomes were highly variable during the study, and women's incomes were more variable than men's (Table 31).

Table 31: Average COV and Zero Income Weeks by Gender

	Average COV	Zero Income Weeks as a Proportion of Total Weeks
Male	1.8	50%
Female	2.4	61%

However, as we discussed in Chapter 2, dependents were more likely to have high levels of income variation due to their limited number of income sources and plentiful zero income weeks. When we exclude dependents from this analysis, we find that men and women had the same level of income variation, and we find that women actually had slightly fewer zero income weeks than men did.

Table 32: Average COV and Zero Income Weeks by Gender, Excluding Dependents

	Average COV	Zero Income Weeks as a Proportion of Total Weeks
Male	1.8	48%
Female	1.8	46%

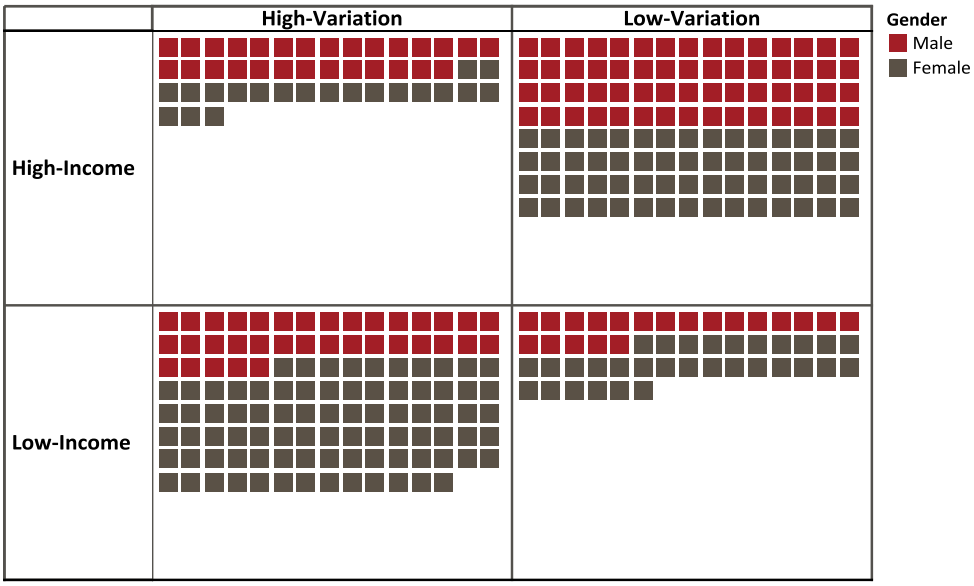
Respondents in Copperbelt Province had slightly greater week-to-week income variation than those in Eastern and Lusaka Provinces did. Western Province had the least amount of income variation from week to week. Respondents in Copperbelt Province also had a higher number of zero income weeks when compared to the other provinces. This is due to the larger representation of miners and other formally employed workers in this province who would only receive income once every four weeks. Western Province had the fewest number of zero income weeks.

Table 33: Average COV and Zero Income Weeks by Province

	Average COV	Zero Income Weeks as a Proportion of Total Weeks
Copperbelt	2.6	72%
Eastern	2.4	58%
Lusaka	2.5	65%
Western	1.5	36%

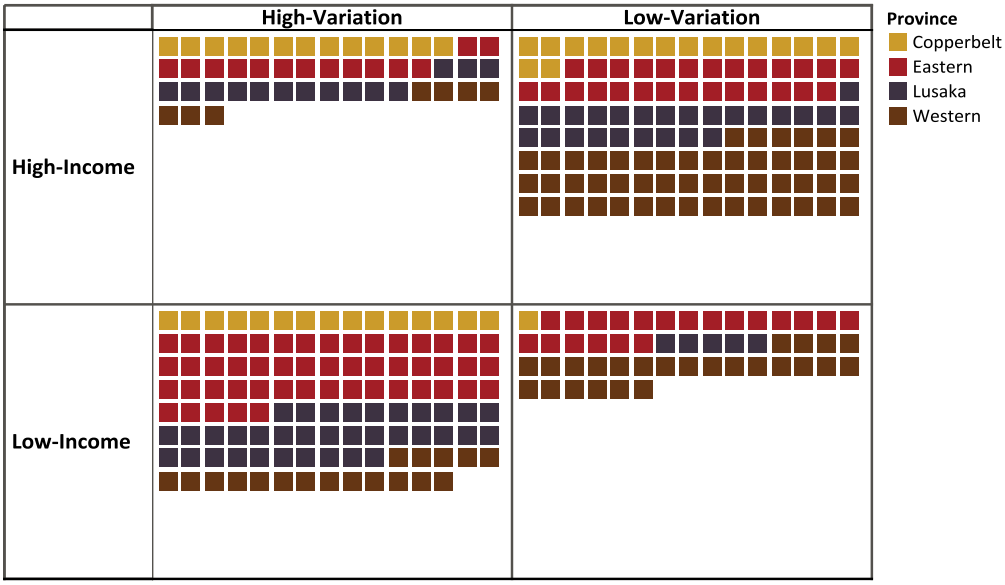
In Chapter 2, we introduced our income segmentation model, which divides respondents into four groups based on their income levels and income variability. Using this framework shows a roughly equal distribution of men and women across the four different segments. The only noticeable exception is in the low-Income/high-variation group where women had a greater representation than men did. This is due to the higher representation of dependents in this segment.

Figure 33: Income Segmentation by Gender



Reviewing the same segmentation model by province also shows roughly similar distributions of the provinces across the four segments. Copperbelt Province is the only noticeable exception in that only one respondent from this site fell into the Low Income, Low Variation group.

Figure 34: Income Segmentation by Province



OUTFLOWS

In Chapter 2, we also explored the composition of respondents' weekly household expenditures, comparing them by gender and income segment. Taking a brief look at the total sample, we see that food was the most frequently purchased item during the study, and respondents spent almost three times as much on food as on the next most common item, basic services. Respondents spent roughly

similar amounts of money on basic services, discretionary items, and household items,[16] though they purchased basic services and household items more frequently than discretionary items.

Table 34: Household Expenditures

	Amount per Week (ZMW)	Count of Transactions per Week
Food	64.7	3.5
Basic Services	25.8	0.7
Discretionary Items	20.0	0.1
Household Items	23.2	0.6
Fuel	4.5	0.1
Special Events	3.3	0.1

Taking a closer look at respondents' basic service expenses shows that respondents spent the most per week on transport and the least on health. Their most common purchase, however, was airtime, grouped into "Communication," where respondents reported making an airtime purchase once almost every three weeks.

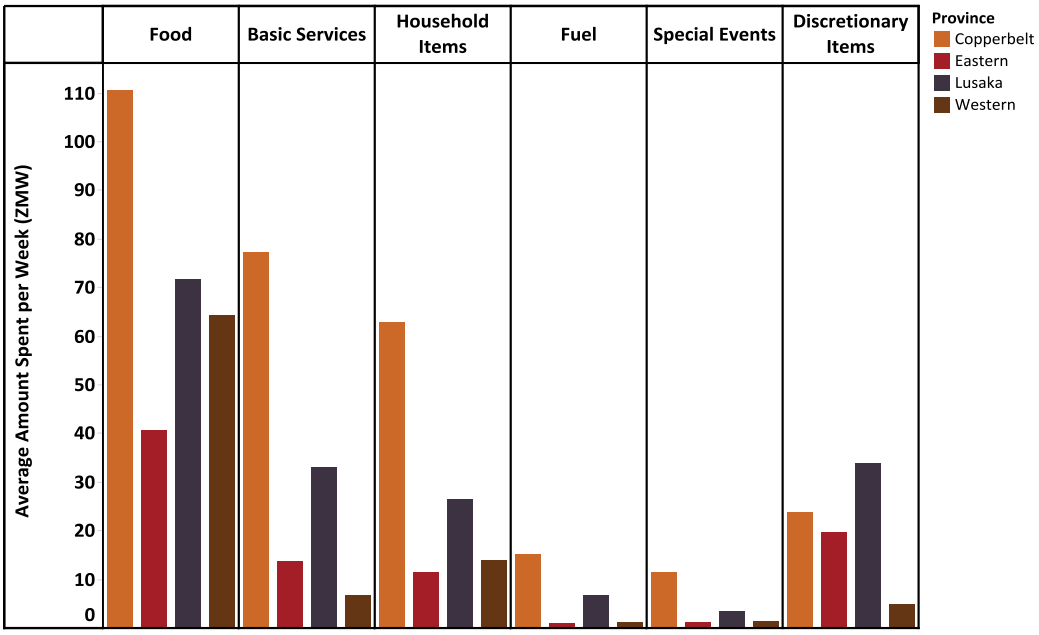
Table 35: Household Spending, Basic Services

	Amount per Week (ZMW)	Count of Transactions per Week
Transport	8.0	0.18
Communication	6.0	0.30
Service	4.8	0.10
Education	5.6	0.05
Health	1.4	0.03
Total	**25.8**	**0.66**

Building on our discussion on gender and income segments' household spending compositions, we took a similar look at what the different spending patterns were across the four provinces. We see that respondents in Copperbelt Province outspent the other provinces in every category except for discretionary items. This is due to respondents in this province earning greater amounts of income per week, on average. Thus, they were able to spend more in most categories. Eastern Province typically spent the least; though, this again was not true for discretionary items. This is due to respondents in this province spending more on agriculturally-related purchases which we classified as discretionary.

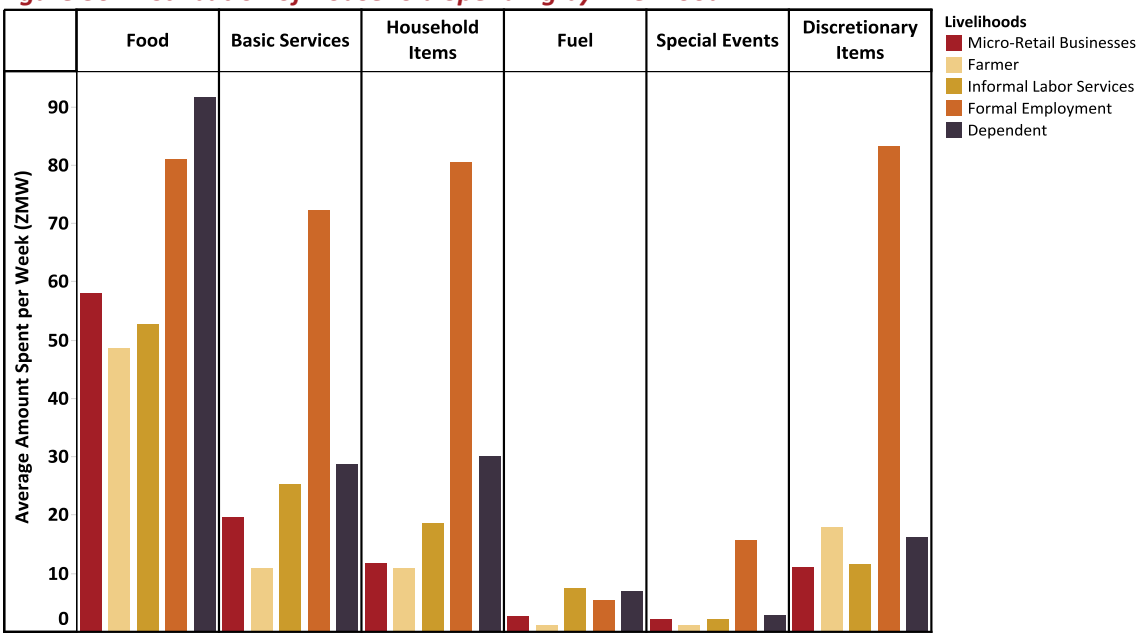
[16] Basic services are purchases for items such as education, transportation, health, airtime, and other service expenditures. Household items are items used within the household, such as soap, utensils, and candles, as well as clothing. Discretionary items are those that are not considered to be food, basic services, household items, fuel, or special events.

Figure 35: Distribution of Household Spending by Province



Reviewing the livelihoods' spending priorities, we see that dependents spent the most per week, on average, on food. This makes sense given that they often purchased the household's necessities. Formally-employed respondents spent the most on basic services, household items, special events, and discretionary items. This is due to their higher incomes that allowed them to spend more on these categories. Although farmers spent significantly less than formally employed respondents on discretionary items, they spent the second highest amount on this category. Again, this is due to the classification of agricultural items as being discretionary.

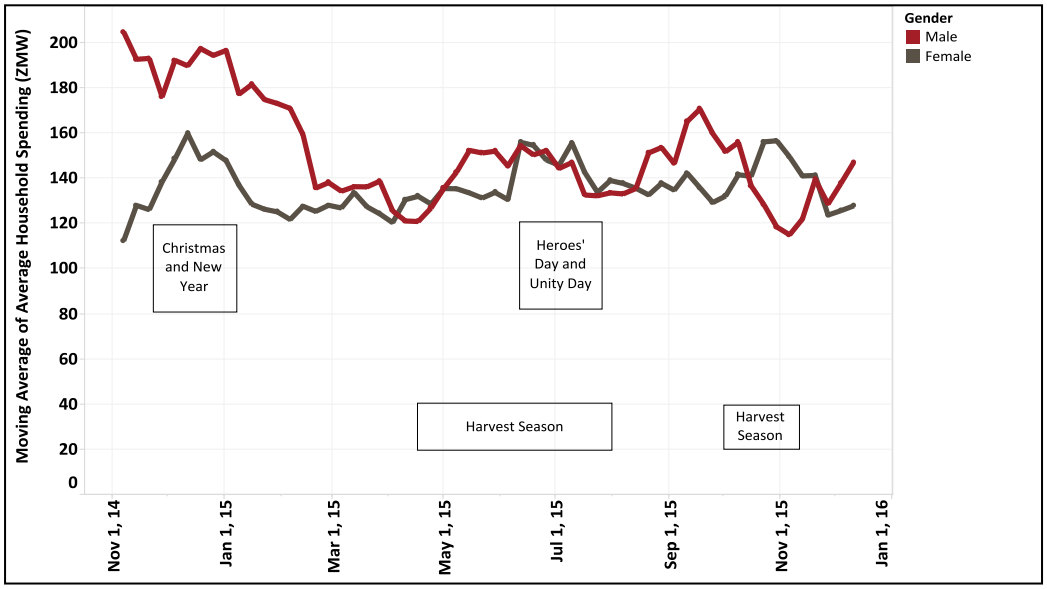
Figure 36: Distribution of Household Spending by Livelihood



A look into the seasonal spending of male and female respondents shows that both genders experienced similar trends in the spending throughout the year. For example, both men and women increased their spending leading up to the Christmas holidays and immediately after the hunger period up through the summer holidays. The only real difference between the genders' spending

behaviors occurred between October and November, around the second harvest season, when women slightly increased their spending from week to week while men did not.

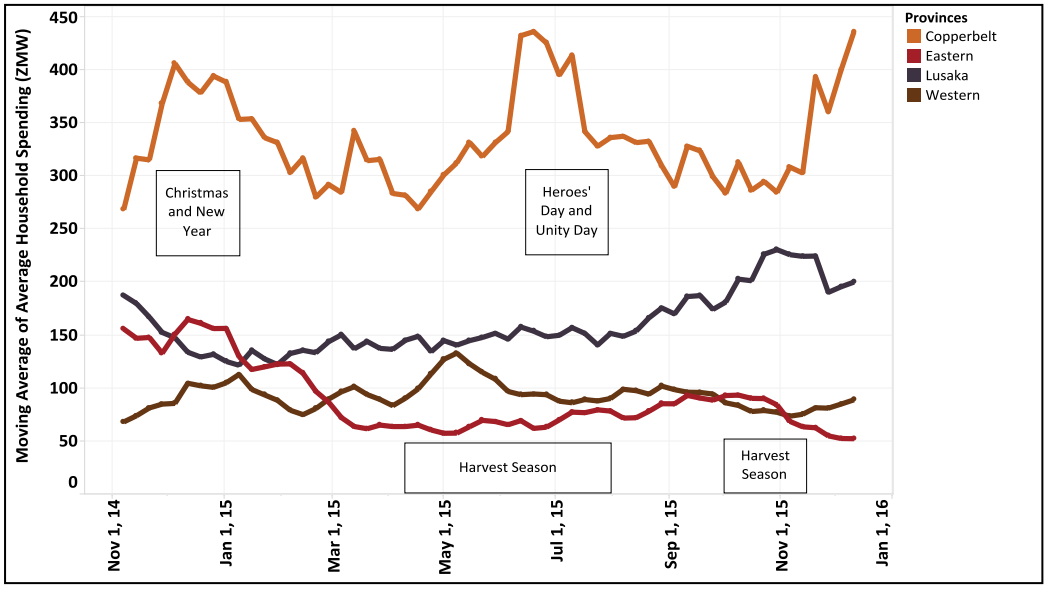
Figure 37: Household Spending Seasonality by Gender



Only respondents in Copperbelt Province displayed any kind of seasonal spending spikes upon reviewing the provincial data. These spikes included peaks around the Christmas and summer holidays and dips during the hunger season. Western Province also experienced a slight increase in spending around the harvest time immediately following the hunger season. Looking at Eastern Province and Lusaka Province, however, we did not see seasonal spending like in the other provinces. For Eastern Province, where we saw no spike in spending around harvest time, the likely explanation is that respondents held onto a greater proportion of their crops for consumption when compared to farmers in Western and Lusaka Provinces.[17] This limited the amount of money respondents could earn from their crops, reducing the amount they could spend later on in the study. Another factor affecting the provinces' spending was the depreciation of the kwacha against the dollar throughout 2015, resulting in inflation towards the latter half of the study. Whereas respondents in Lusaka Province were slightly better off than Eastern Province respondents were, they were more likely able to respond to the increased prices by slightly spending more. Respondents in Eastern Province, with their limited means, were more likely to spend less due to the higher prices and to rely more on their own subsistence.

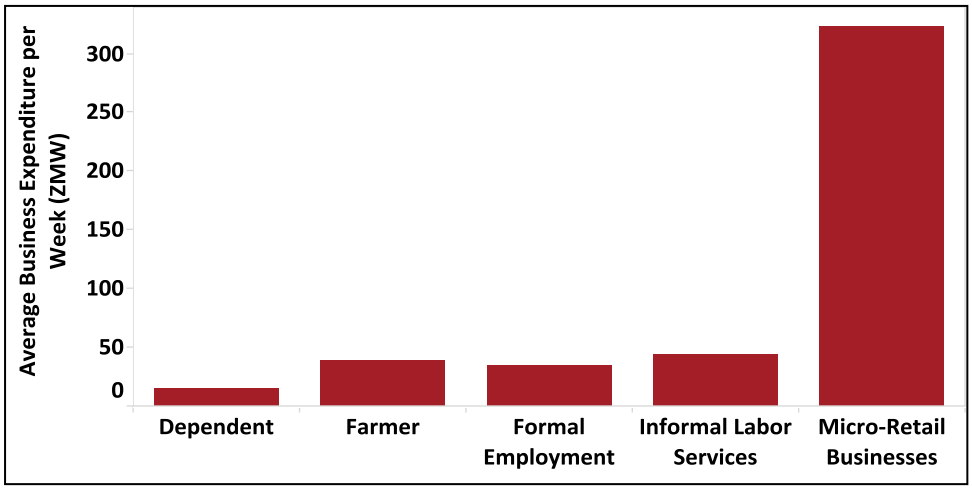
[17] Although a higher proportion of farmers in Copperbelt reported keeping their crops for consumption than in Eastern, the sample of farming households in Copperbelt was about one-tenth that of the sample in Eastern, leading us to exclude Copperbelt from this discussion on crop consumption.

Figure 38: Household Spending Seasonality by Province



In terms of business expenditures, we see that micro-retail business operators outspent the other livelihoods in this area. Dependents spent the least as their businesses only tended to be part-time and, therefore, required fewer and smaller purchases.

Figure 39: Average Weekly Business Expenditures



We also see slight differences in the spending habits of male and female micro-business owners. Though male micro-business owners spent almost twice as much per week as female micro-business owners did, women conducted almost twice as many business transactions per week as men did. Farmers and informal service workers had roughly similar business expenditure behavior regardless of gender.

Table 36: Business Expenditures by Gender[18]

Gender	Livelihood	Amount per Week (ZMW)	Count of Transactions per Week
Male	Micro-Retail Businesses	447.0	0.8
	Farmers	36.4	0.3
	Informal Labor Services	45.8	0.3
Female	Micro-Retail Businesses	231. 2	1.3
	Farmers	40.7	0.3
	Informal Labor Services	38.6	0.2

A similar look at business expenditures across the provinces shows that respondents in Eastern Province consistently spent the least on business transactions. Although micro-retail businesses in Copperbelt Province seem to have spent significant amounts, it should be noted that this figure is driven by one respondent in particular who consistently purchased thousands of kwacha worth of business items on a weekly basis. Micro-retail businesses also consistently conducted the greatest number of transactions, about one per week, across the four provinces. Farmers in Lusaka Province spent more than farmers in any other province spent and conducted a greater number of transactions than them as well.

Table 37: Business Expenditures by Province

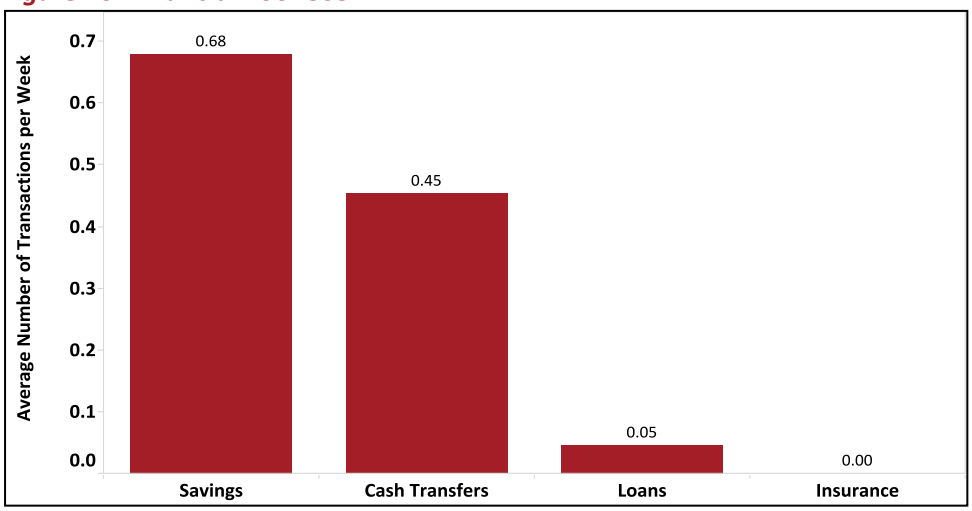
Province	Livelihood	Amount per Week (ZMW)	Count of Transactions per Week
Copperbelt	Micro-retail Businesses	2,616	1.68
	Farmers	79	0.32
	Informal Labor Services	37	0.18
Eastern	Micro-retail Businesses	141	0.97
	Farmers	37	0.30
	Informal Labor Services	18	0.17
Lusaka	Micro-retail Businesses	306	0.98
	Farmers	196	0.36
	Informal Labor Services	20	0.18
Western	Micro-retail Businesses	322	1.17
	Farmers	26	0.28
	Informal Labor Services	104	0.48

FINANCIAL TOOLS AND NETWORKS

Financial tools, as discussed in Chapter 2, are instruments used by respondents to conduct a financial transaction. This section focuses on three tools: savings, cash transfers, and loans. We omit discussion of a fourth tool, insurance, because, throughout the study, respondents reported conducting only three transactions using insurance, making the count per week an infinitesimal amount. Respondents also very rarely conducted transactions using loans and only did so once every five months. Instead, respondents overwhelmingly preferred to use savings and cash transfers. Respondents used a savings tool once every one and a half weeks, and they used cash transfers once every two weeks.

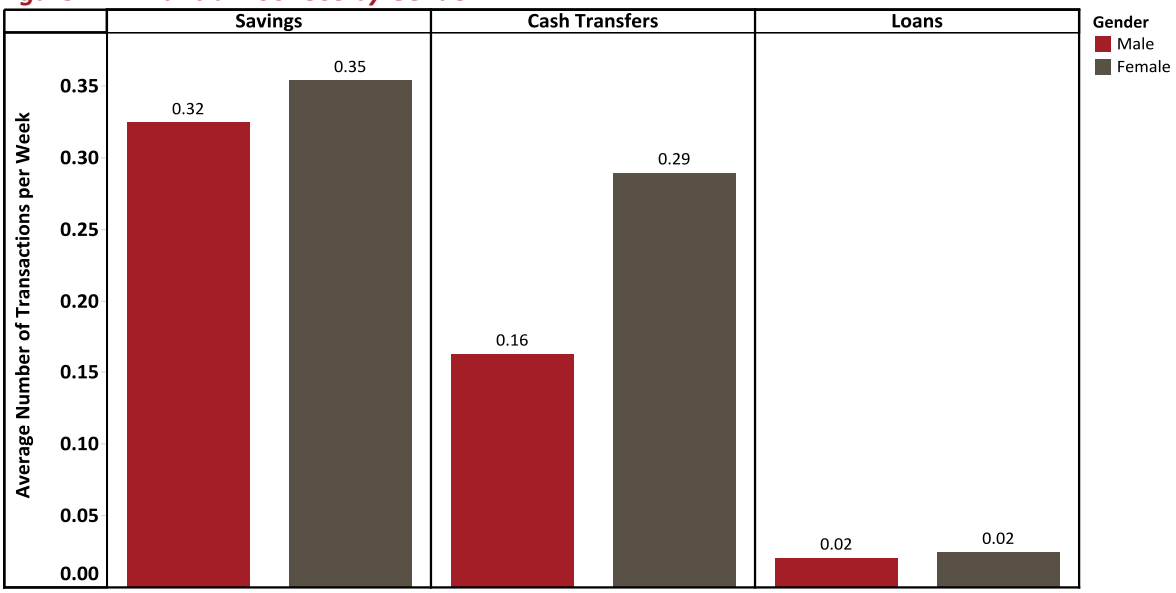
[18] Due to the limited business expenditures by dependents and formally employed workers, they were excluded from this section.

Figure 40: Financial Tool Use



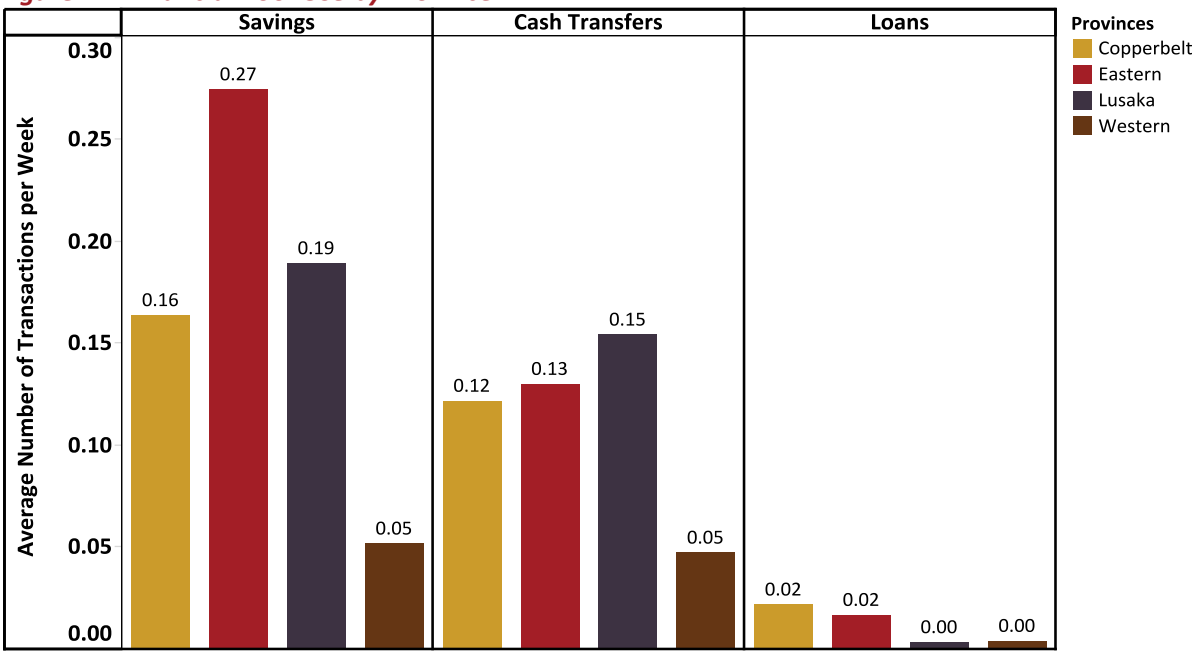
When comparing men's use of financial tools to women's use, the data reveal that women used savings and cash transfers slightly more often than men did. Both genders conducted financial transactions using loans at near equal and very low rates.

Figure 41: Financial Tool Use by Gender



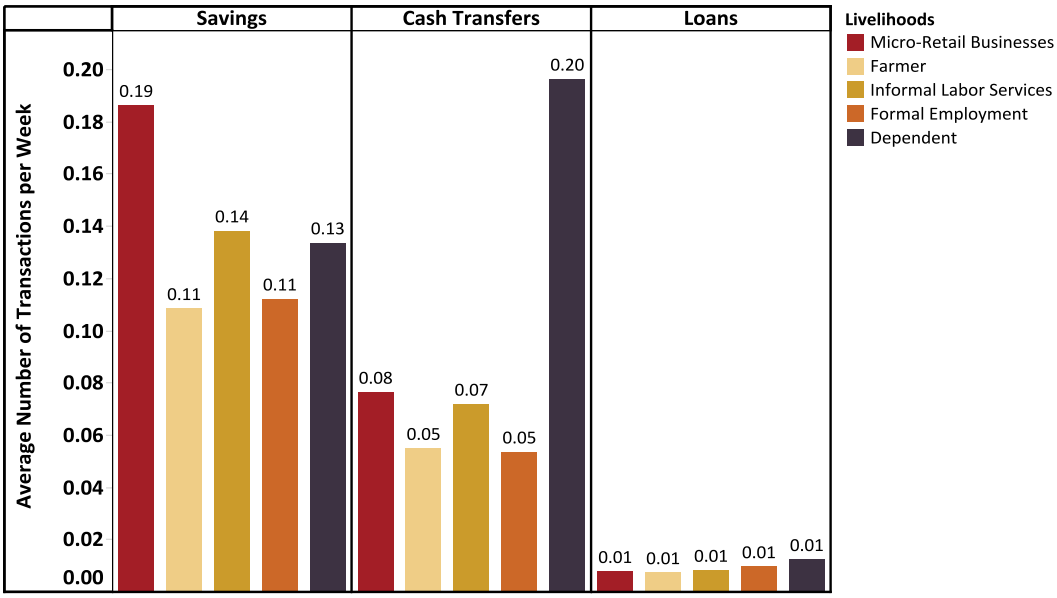
Taking a similar look at financial tool use across the provinces shows that respondents in Eastern Province used savings as a financial tool more often than the other provinces. Though respondents from Western Province appeared to use savings the least, this phenomenon is best explained as a difference in data collection as enumerators from Western Province had a more difficult time having respondents in this region report their home savings transactions. Respondents in Lusaka Province were slightly more likely than respondents in Eastern and Copperbelt Provinces were to conduct financial transactions using cash transfers. Respondents in Western Province were the least likely to use cash transfers. Last, respondents in Copperbelt Province were slightly more likely than respondents in Eastern Province were to conduct financial transactions using loans.

Figure 42: Financial Tool Use by Province



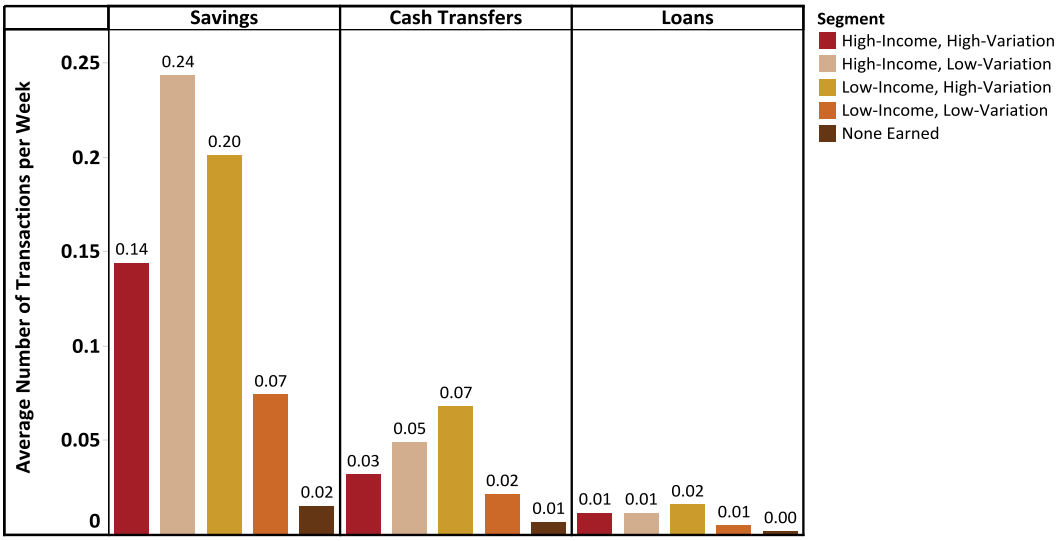
Micro-retail businesses used savings tools more frequently than the other four livelihoods. Dependents, not surprisingly, conducted financial transactions using cash transfers at a much greater rate than any other group. All five livelihood groups reported using loans at similar frequencies, though dependents reported doing this slightly more often than the other four groups did.

Figure 43: Financial Tool Use by Livelihood



Reviewing the income segments' use of financial tools reveals no significant trend in the groups' preferences for tools. Respondents in the high-income/low-variation segment reported using savings slightly more than the other three segments. Respondents in the low-income/high-variation group conducted cash transfers more frequently than the other segments did. This is due to the higher representation of dependents in this segment who relied on these transfers.

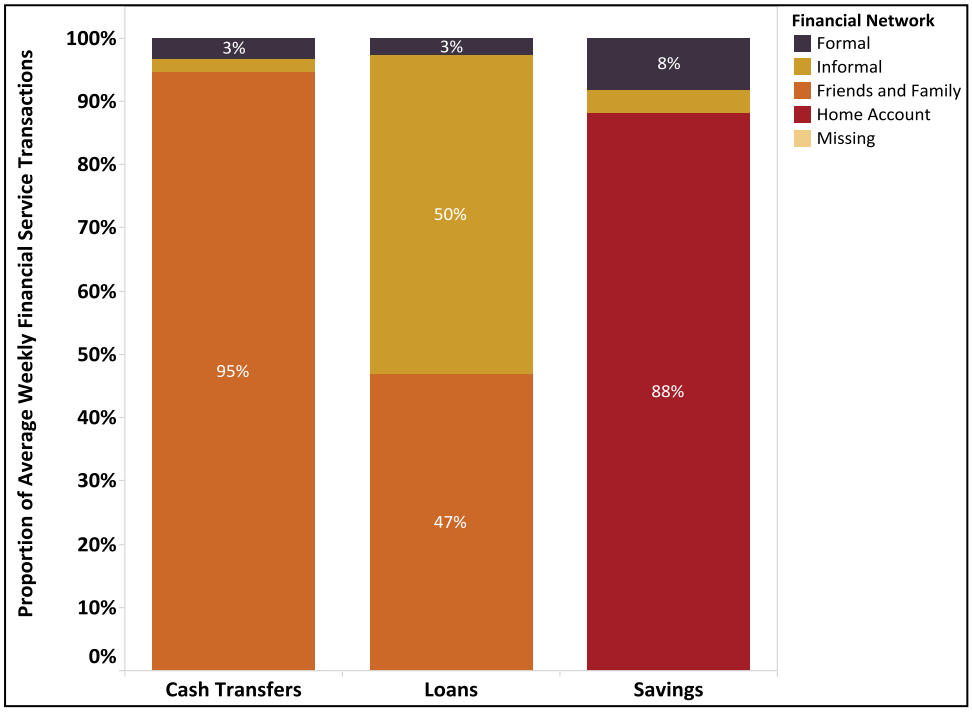
Figure 44: Financial Tool Use by Income Segment



In addition to understanding how often respondents used their financial tools, it is important to understand how they used these tools within their various financial networks (Figure 45). Again, due to the limited use of insurance, it was excluded from this discussion.

The data show that the respondents in our sample had a strong aversion to using financial tools provided by formal financial service providers (FSPs). If respondents did use a formal FSP, they were most likely to use it for saving; nevertheless, they only reported conducting eight percent of their savings transactions with a formal FSP. Respondents, instead, greatly preferred to save at home. As can be expected, friends and family were responsible for a vast majority of the cash transfers. For loans, respondents relied mostly on informal FSPs, though they also greatly relied on friends and family.

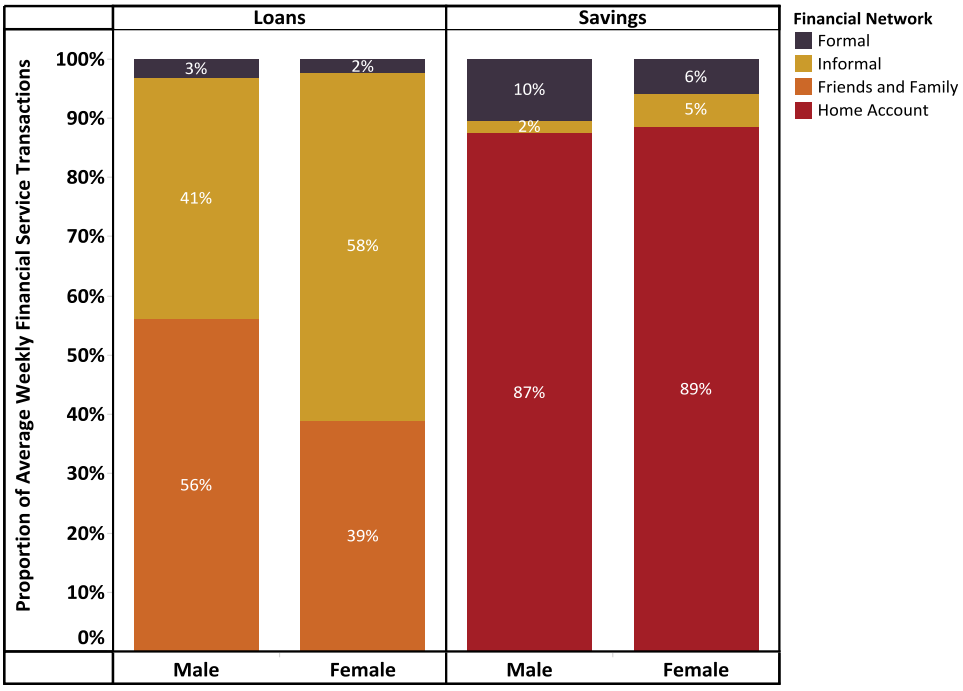
Figure 45: Financial Network Use by Financial Tool



Due to the obvious relationship between cash transfers and family and friends, we excluded them from the following discussion to avoid repetition.

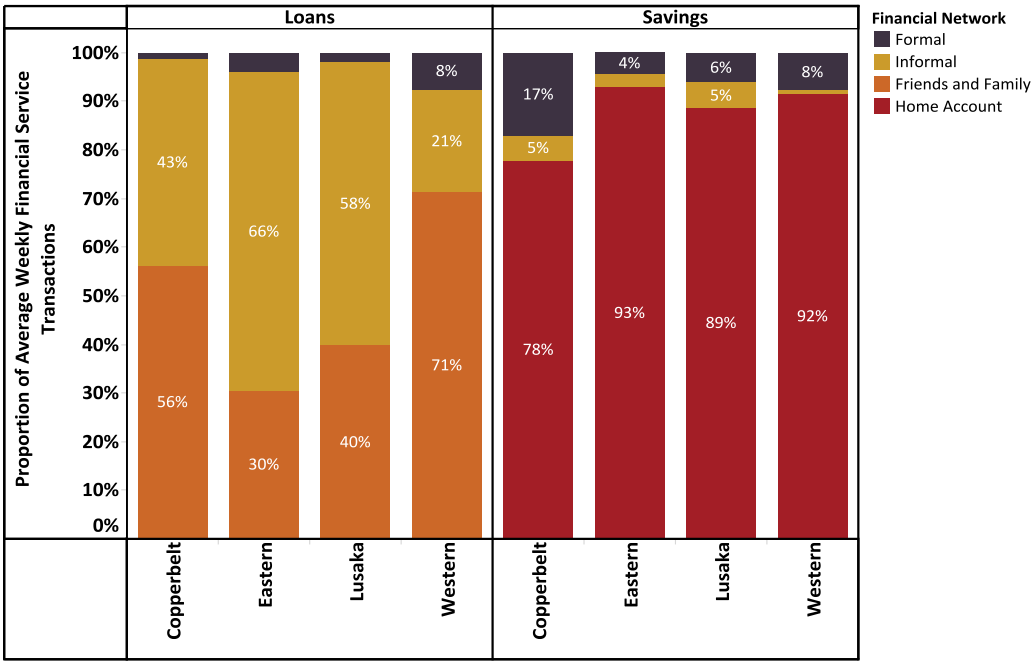
A look at how men and women used savings and loans reveals slight differences in their behaviors. Men, for example, were more likely to take out a loan from friends and family than women were, and women were more likely to take out a loan from an informal source than men were. As for savings, both genders greatly preferred saving at home. However, men were more likely to use formal savings than women were. This is due to the greater representation of men in the formal employment sector, which often required them to open and use a bank account in order to receive their salaries. Women, on the other hand, were more likely than men were to conduct savings transactions with informal networks like *chilimbas* and savings groups.

Figure 46: Financial Network Use by Financial Tool and Gender



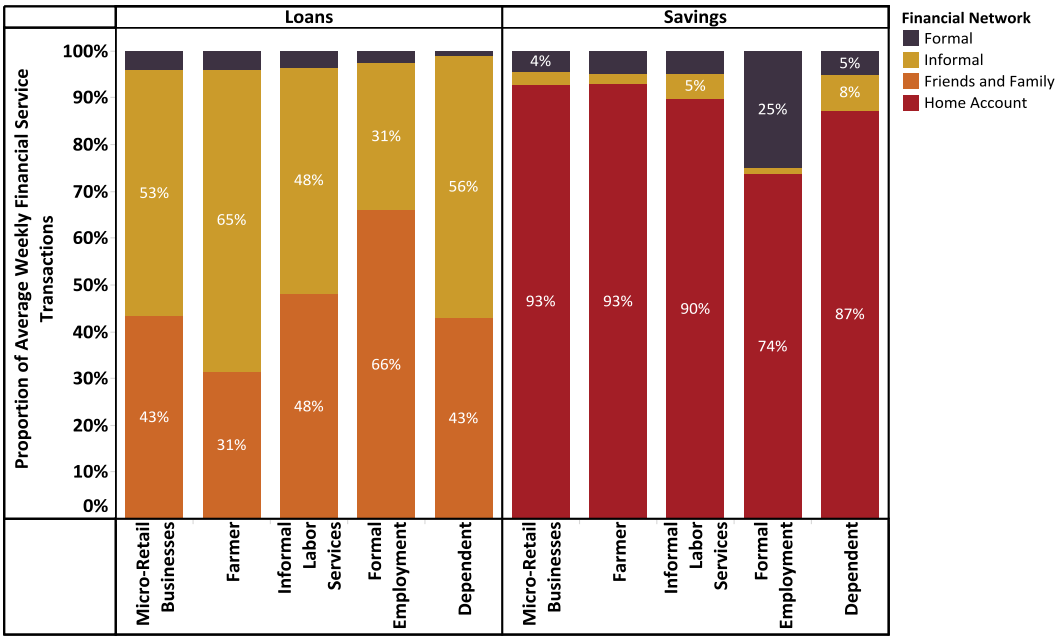
In Copperbelt and Western Provinces, respondents used friends and family most often when they needed to take out a loan, and in Eastern and Lusaka Provinces, respondents chose to use informal service providers when they needed a loan. Respondents in Copperbelt Province were more likely than the other provinces' respondents were to use formal FSPs for their savings transactions. Again, this is due to a high representation of formally employed workers who used bank accounts in order to receive their salaries.

Figure 47: Financial Network Use by Financial Tool and Province



Respondents in formal employment were the only livelihood group to report conducting a majority of their loan transactions with family and friends. The remaining groups preferred to use informal FSPs. The formally employed also used formal savings tools for a quarter of all of their savings transactions, five times as often as the other livelihood groups. Dependents were more likely than the other groups were to use informal savings tools.

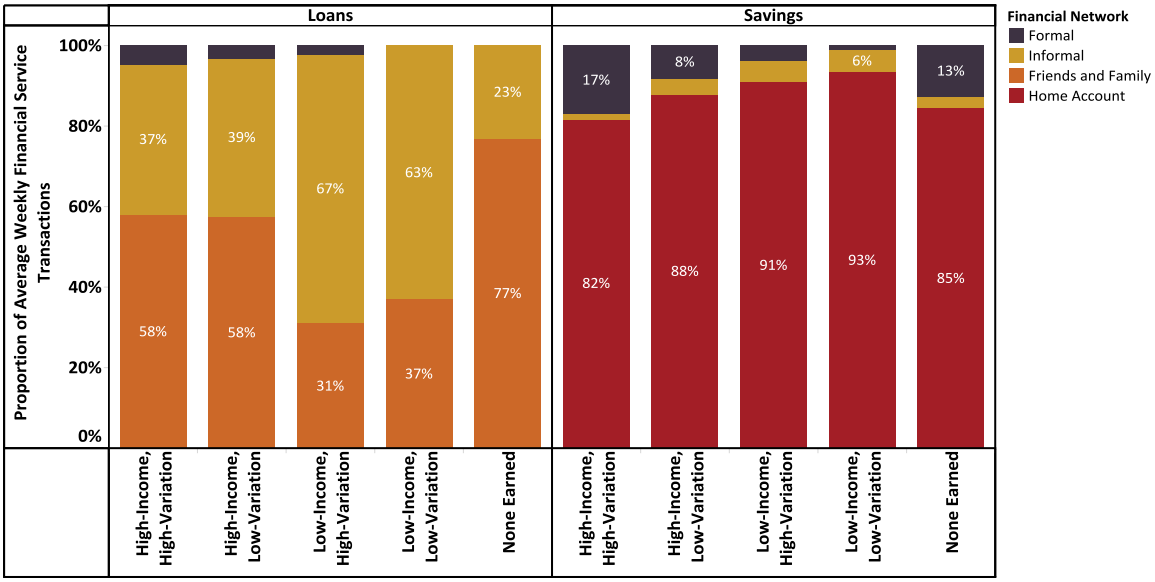
Figure 48: Financial Network Use by Financial Tool and Livelihood



In looking at financial tool and network use by the segments, we see slight behavioral. Respondents in the high-income categories were more likely to take out loans from friends and family than their low-income counterparts were. These segments instead relied on informal FSPs in order to receive loans. Additionally, high-income segments were much more likely than the low-income segments

were to use formal savings tools. All groups still greatly preferred to conduct their savings transactions at home, however.

Figure 49: Financial Network Use by Financial Tool and Income Segment



CASH FLOW MANAGEMENT

In Chapter 4, we discussed the correlation coefficients between income and spending between men and women as well as across the four segments. Building off this discussion, we also reviewed the correlation coefficients across the four provinces. We found few differences across the provinces, though Lusaka Province has a much lower coefficient than the other three provinces.

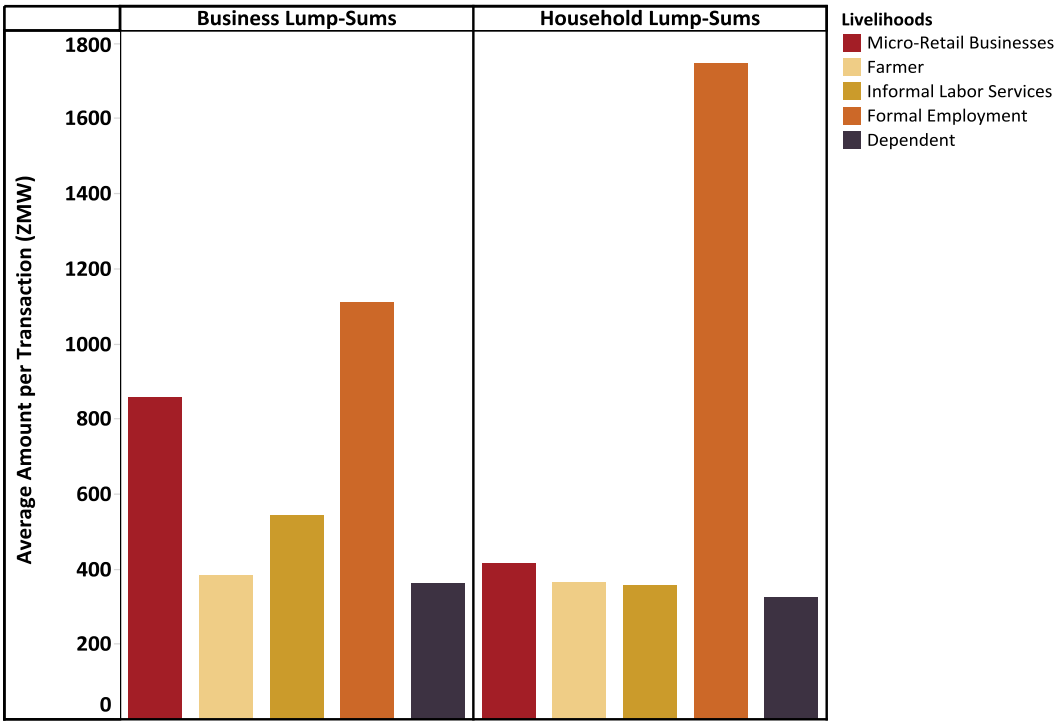
Table 38: Correlation between Income and Household Spending by Province

Province	Number of Observations	Correlation Coefficient
Copperbelt	2,308	0.27
Eastern	5,553	0.29
Lusaka	4,306	0.05
Western	4,343	0.21
Total	**16,510**	**0.12**

LUMP SUM PURCHASES

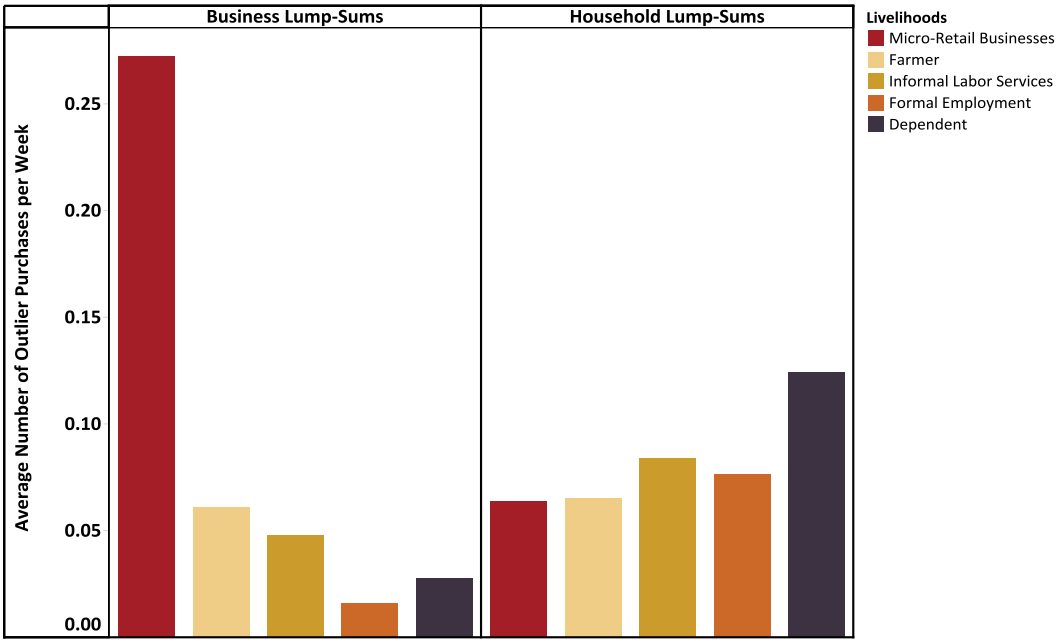
Building on Chapter 5's discussion on lump-sum expenditures, we can see that those in the formally employed sector spent the most, on average, on lump sums for both household and business purposes. Micro-retail businesses had the second highest average business lump-sum expenditures. The remaining livelihoods had roughly similar sizes for their lump-sum expenditures.

Figure 50: Average Size of Lump Sum Expenditures per Livelihood



A look at the average number of lump-sum purchases per week, however, reveals a slightly different story. Micro-retail businesses, as is expected, conducted a significantly greater number of business lump-sum expenditures per week than the other livelihoods, and formally employed workers conducted the least. Dependents conducted the greatest number of household lump-sum expenditures.

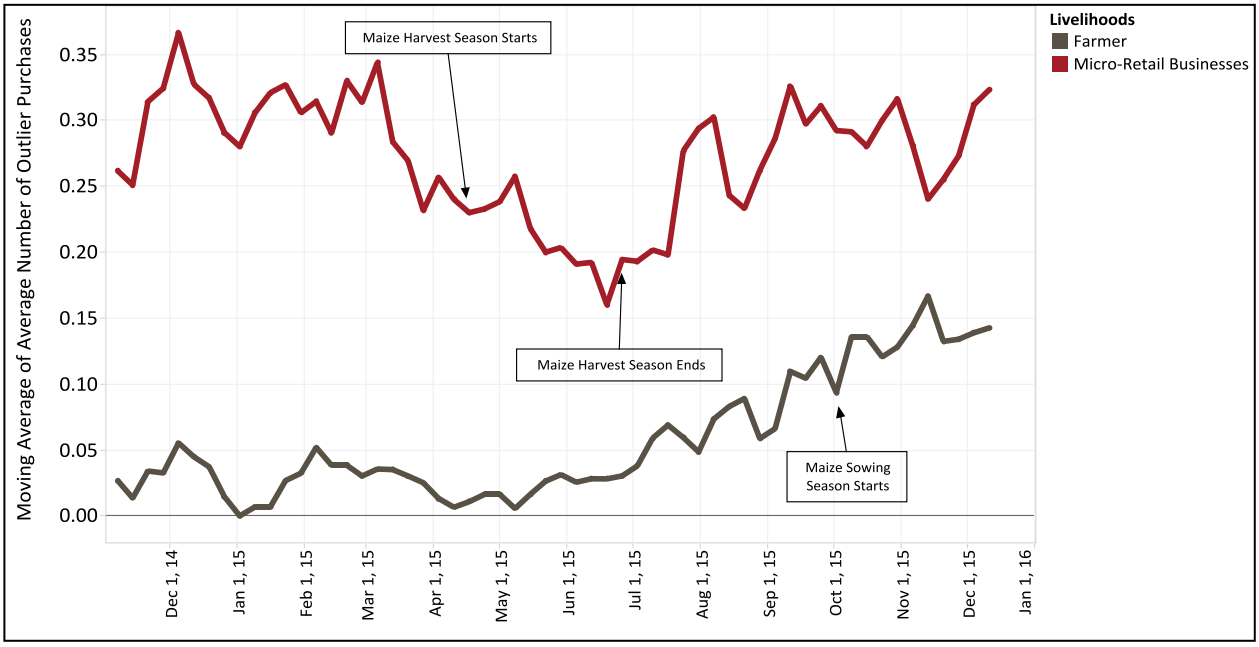
Figure 51: Average Number of Lump-Sum Expenditures per Week



Although a review of the seasonality of outliers for all livelihoods did not find any conclusive patterns for most livelihoods, some did experience seasonality. Farmers, for example, see a slight, steady rise of weekly average asset purchases heading towards the sowing season in October; this

trend continues through the sowing season. Micro-retail businesses, on the other hand, see a drop in their number of outlier purchases around the time of harvest season and the summer months when people are focused on farming.

Figure 52: Seasonality of Outlier Purchases for Micro-Retail Businesses and Farmers



CASE STUDIES

Chapter 3 explored the attitudes of respondents regarding FSPs and financial services, and Chapters 4 and 5 explored the ways in which respondents managed their cash flow and financed their lump sum and unexpected purchases. In this section, we will present seven stories that highlight some of the key themes discussed in these previous chapters.

One of the most significant themes seen in the following stories is the concept of financial exclusion. Despite many of these cases having interacted with an FSP, very few used them on a regular basis. Moses, for example, only made one deposit into his Zanaco Bank account after opening it, stating that it was inconvenient for him to make more deposits. Other factors contributing to respondents' limited FSP use, as discussed in length in Chapter 3, included a lack of information on what FSPs offer, a strong aversion to paying interest, a lack of trust in FSPs, and a strong preference for financing activities using either one's own means or financial support from the community. Together, these elements created an environment that discouraged individuals from turning to FSPs and instead caused them to rely on their own means and the support from their friends and family.

A second theme to come out of these stories is an aversion to risk, as mentioned in Chapter 3. Only one of the three micro-business operators in these cases preferred to sell goods on credit. The other two cases feared that selling on credit could lead to a loss in income rather than a gain in the market, and thus, they chose to sell their goods in cash. Similarly, the cases did not like the idea of taking out loans from people who were not friends or family as they did not want to pay interest. Furthermore, respondents chose not to use loans from FSPs out of fear that they would not be able to repay them on time.

One final theme that held true for most cases was the idea of household cohesion. Throughout the stories, there was an understanding between the respondents and their families that they would work together to support each other. Collins's wife, for example worked on the farm while he performed piecework so that they could support their family. Even Naomi, who began the study as a dependent, started a new business so that she could try and contribute to her household. The idea of a strong figurehead leading the household and making all financial decisions does not necessarily hold true in Zambia. Out of just these seven cases, only Liyelu reported that he did not consult other family members when making financial decisions. This suggests that, generally, respondents worked together with their household members to bring in income, purchase household necessities, and make financial decisions together.

Despite the limited success of FSPs in most of these stories, there were some noticeable exceptions. Nicholas, for example, valued the loan he received from Zambia National Building Society. He found that it gave him access to money he otherwise would not have, and it allowed him to purchase a car that he used to support his family following the loss of his mining job. Nicholas also used three different savings accounts, each with its own special purpose. Phalesy was another exception. Through her business with Cargill, she was able to perform in-kind loan transactions that granted her access to cotton seeds she could plant and harvest for a profit. Cargill also allowed her to repay the original in-kind loan with an in-kind repayment of 50kg of cotton. This made repaying Cargill easier as Phalesy could simply provide them with a share of her yield instead of having to come up with a large sum of money. These exceptions show that when individuals were aware of the services offered by FSPs and that they found the terms of those services to be agreeable, there was a greater chance that those individuals would take advantage of financial services and use them regularly.

CASE #1: MICRO-BUSINESS START-UP

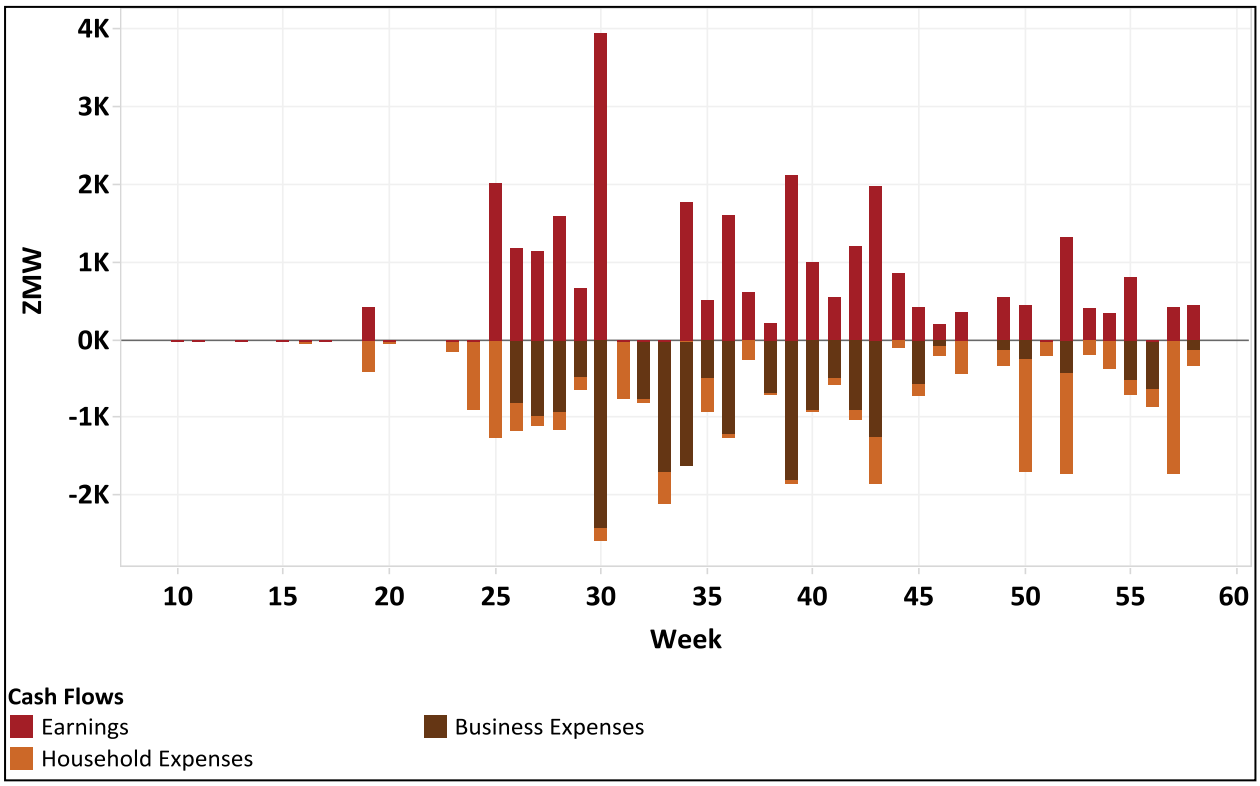
Naomi is a young businesswoman living with her husband, two young children, and another adult family member in a house they rent in Lusaka. They have limited assets, including a radio, DVD player, electric press, refrigerator, and some farming tools.

When the study began, Naomi was dependent on her husband, a grocer in town, to support her. Around April 2015, however, Naomi travelled to her family village for a personal matter. It was during this trip that she realized she could sell baobab fruits that grew near her village. She collected these fruit and carried them back to her home in Lusaka where she brewed them into a non-alcoholic drink and froze them to make popsicles. From the sale of these popsicles, Naomi earned ZMW 50, which she used to purchase more popsicles, called freezits. She continued to sell popsicles this way until she raised ZMW 110 in capital which she used, along with other home savings, to start-up her own door-to-door grocery business.

Cash Flow Management

Naomi carries most of the responsibility for managing the household's money. Instead of using a budget, she prefers to purchase household items on an as-need basis. When making large purchases or financial plans for the future, she includes her husband in the discussion; her husband is also responsible for paying the rent, and they share responsibility for paying utilities. Aside from the basic household necessities, she made weekly purchases of items like milk, butter, and cooking oil during the study as these were the items her customers requested each week.

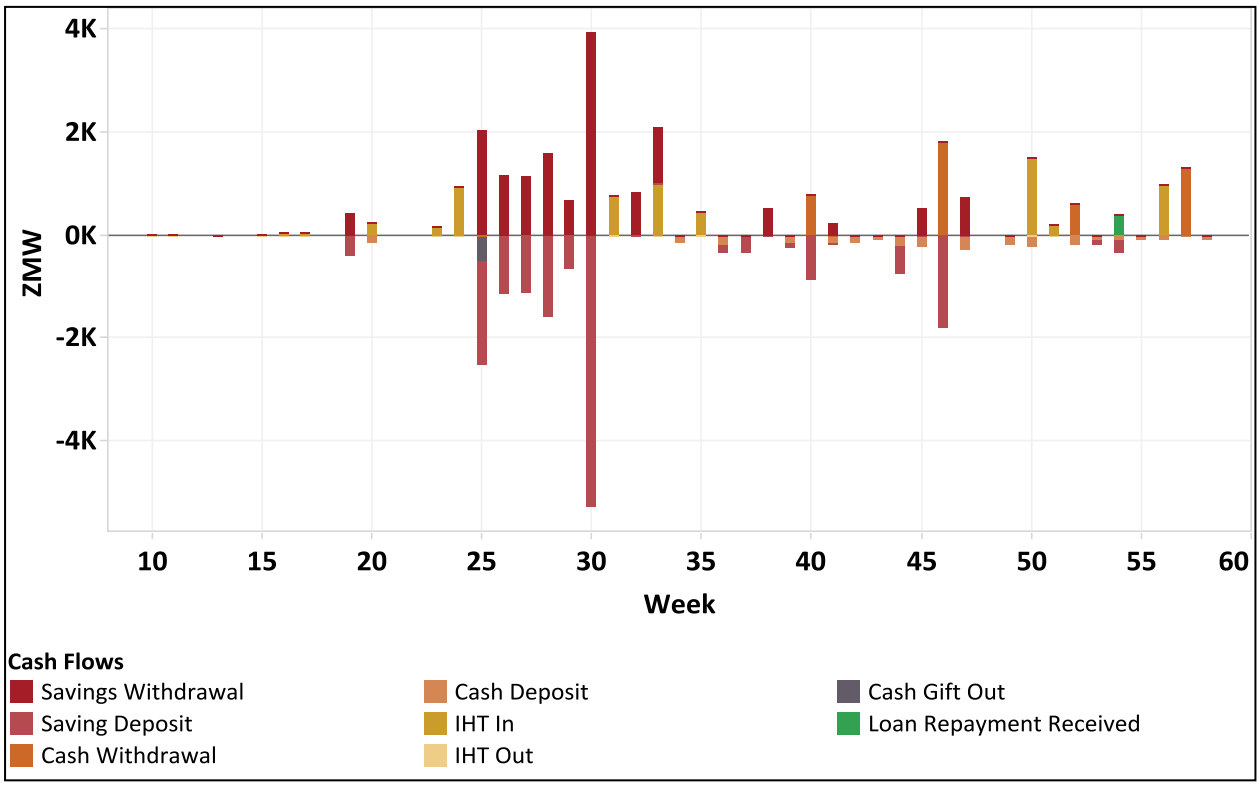
Figure 53: Naomi's Income and Spending



Savings, Cash Transfers, and Credit

Naomi regularly deposited into her home savings, though she also participated in a chilimba, first joining in week 20. However, this group quickly disintegrated, as members could not contribute. She then joined another chilimba in week 36 and began making regular weekly contributions. When receiving her payouts, she often examined her current situation before deciding how to use the money. For example, in week 46, she saved her payout at home, having no reason to spend the money; in week 57, she used it to help pay rent.

Figure 54: Naomi's Use of Financial Tools and Networks



Naomi also sends money to her family in the village when there is need. In weeks 25 and 34, for example, she sent ZMW 500 and ZMW 160 to her family using Zoona, a service she found to be fast and trustworthy. Apart from these services, she would occasionally sell her groceries on credit, thinking it gave her an advantage over other grocers in town. If customers were unable to pay their debt on time, she would take an item from their household as collateral until they repaid her.

Financing Risk Events and Lump Sums

Naomi thinks that savings are the best way to cover unexpected events so she does not have to owe any companies money. For example, she received her sick father in week 43 and brought him to the clinic for treatment. In order to cover these expenses, she relied on the money she had earned that week. In addition to using her own finances, Naomi says she would also turn to her parents for financial assistance as she felt they were the only people who could help her.

At the start of the study, Naomi relied mostly on her own home savings and business income in order to pay for lump-sum expenditures, such as her furniture purchase in week 25. Now a member of a chilimba, she is that she will be able to use it to save up for larger purchases; though, she says she is cautious, fearing that group members might not make their contributions, leaving her "stuck." She says that she is also aware of a local market group, which could lend money to her, allowing her to reach her goal of buying a plot at the market. However, she is hesitant of participating, as she is unaware of its terms and conditions, specifically interest rates.

CASE #2: SUCCESSFUL MICRO-BUSINESS

Moses is a young, successful grocer living in Kitwe in a home that he rents. He lived alone throughout most of the study, until he was married in the final weeks. When compared to other

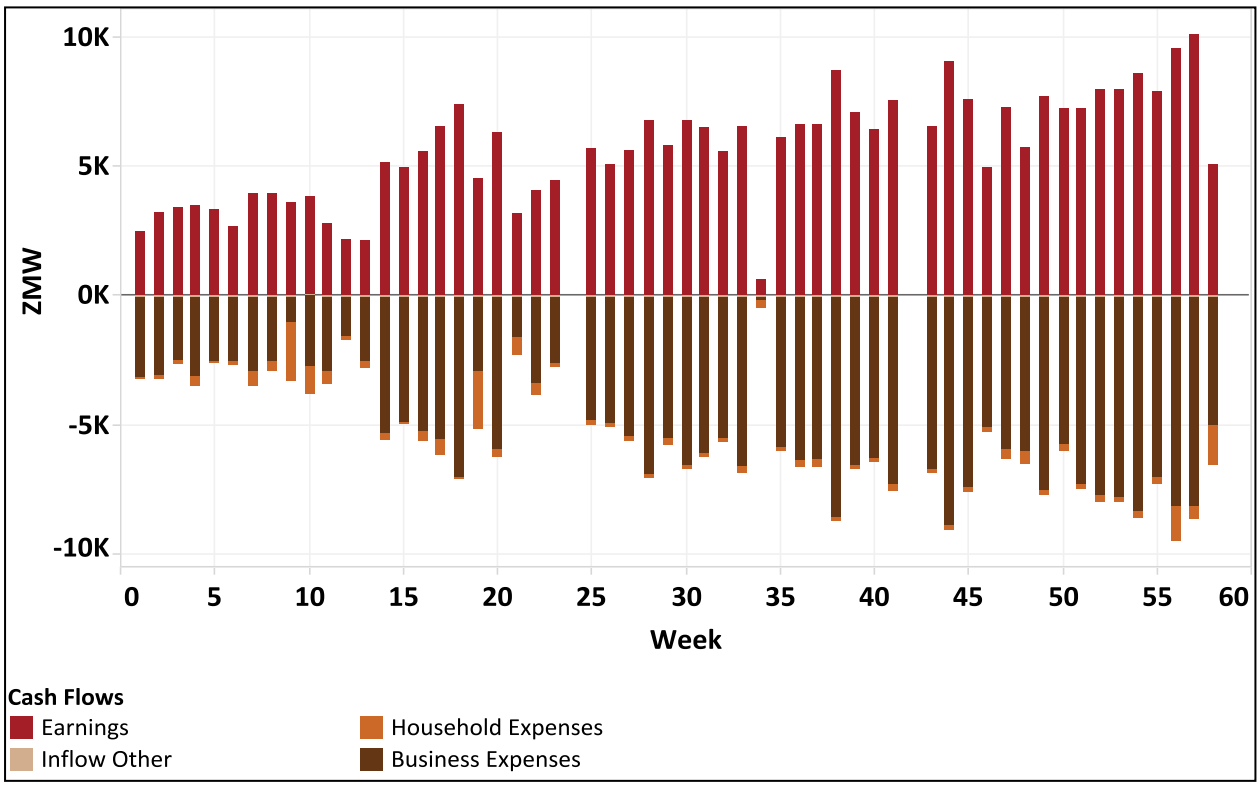
respondents in the study, Moses is fairly well off, owning a dwelling in Chipata as well as a radio, DVD player, fan, lamps, a mobile phone, refrigerator, and a satellite dish.

Moses used to work for several years in a small store in Lusaka, which inspired him to open his own grocery shop in Kitwe before the start of the study. He opened his shop in Kitwe along a main road so customers could reach him easily. He commonly sold food items, such as mealie meal and cooking oil, as well as airtime and other household items. Moses managed his shop alone, but his cousin supported him for a brief time.

Cash Flow Management

Moses held most of the responsibility for managing his household's finances during the study. However, after marrying his wife, she took over the responsibility of buying the household necessities. When making major purchases and financial decisions, he typically includes his new wife in the discussion. His household uses a budget, though they do not keep it written down. For his business, Moses typically keeps his money at home for a few days before converting it into new stock later in the week. In the data, we see that he made regular weekly stock purchases. He prefers to buy this way in order to maximize the number of hours he can keep his shop open and in order to reduce transportation costs. As seen by his income and spending flows, Moses' main priority for cash flow management was his business which accounted for a majority of his spending throughout the study.

Figure 55: Moses' Income and Spending

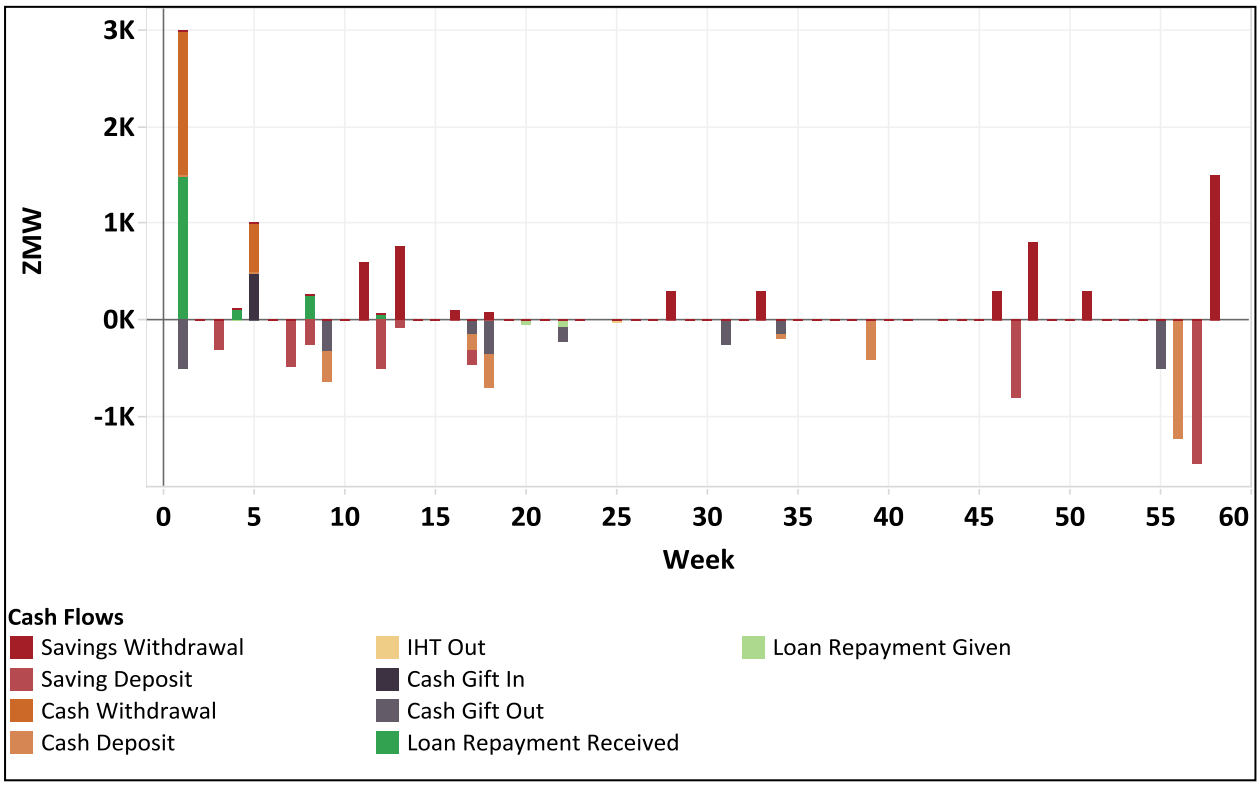


Savings, Cash Transfers, and Credit

Moses generally prefers to save at home, as he did throughout the study. Although he opened an account with Zanaco Bank in week 34, he only made one other deposit into the account in week 39, stating that the bank was too far away from his shop, and fearing that travelling to the bank would

result in a loss of income. Aside from Zanaco, Moses also used other FSPs, such as Zoona and SwiftCash, which allowed him to send and receive money from relatives and business associates. For example, in week 1, Moses received ZMW 1,500 through Zoona from someone he had previously loaned money to; he then subsequently withdrew this money, explaining why he had two large financial inflows for that week. He thinks that using these tools is a cost-effective way for him to send money long distances without accruing transportation costs. Moses allows his customers to purchase goods on credit, but only on rare occasions. For example, in week 3 he allowed his cousin to purchase goods worth ZMW 500 on credit, and this was the only instance he reported giving out on credit. He fears that customers would not clear their debt and would leave him with no way of collecting the money.

Figure 56: Moses' Use of Financial Tools and Networks



Financing Risk Events and Lump Sums

Around week 41, Moses fell ill and went to a local clinic for treatment, costing him ZMW 130 as well as affecting his ability to earn income at the time, seen in week 40. He financed this expense using his business income and home savings, his two preferred methods for financing emergencies. Occasionally, though, he says he would turn to family members or friends if he did not have the funds to pay for such events, as these people would provide him with cash gifts or interest-free loans.

Moses made several large, bulky business purchases during the study that he financed using his own income and home savings. However, he sometimes received money from friends and family to help pay for his merchandise, as he did in week 5 when his business associate sent him ZMW 500. Although Moses never received any loans during the study, he is aware that MFIs offer such services and would consider taking out a loan from an MFI in order to expand his business. In the meantime,

though, he prefers to take out loans from friends and family as these people do not charge interest and have flexible repayment schedules.

CASE #3: FAILED MICRO-BUSINESS

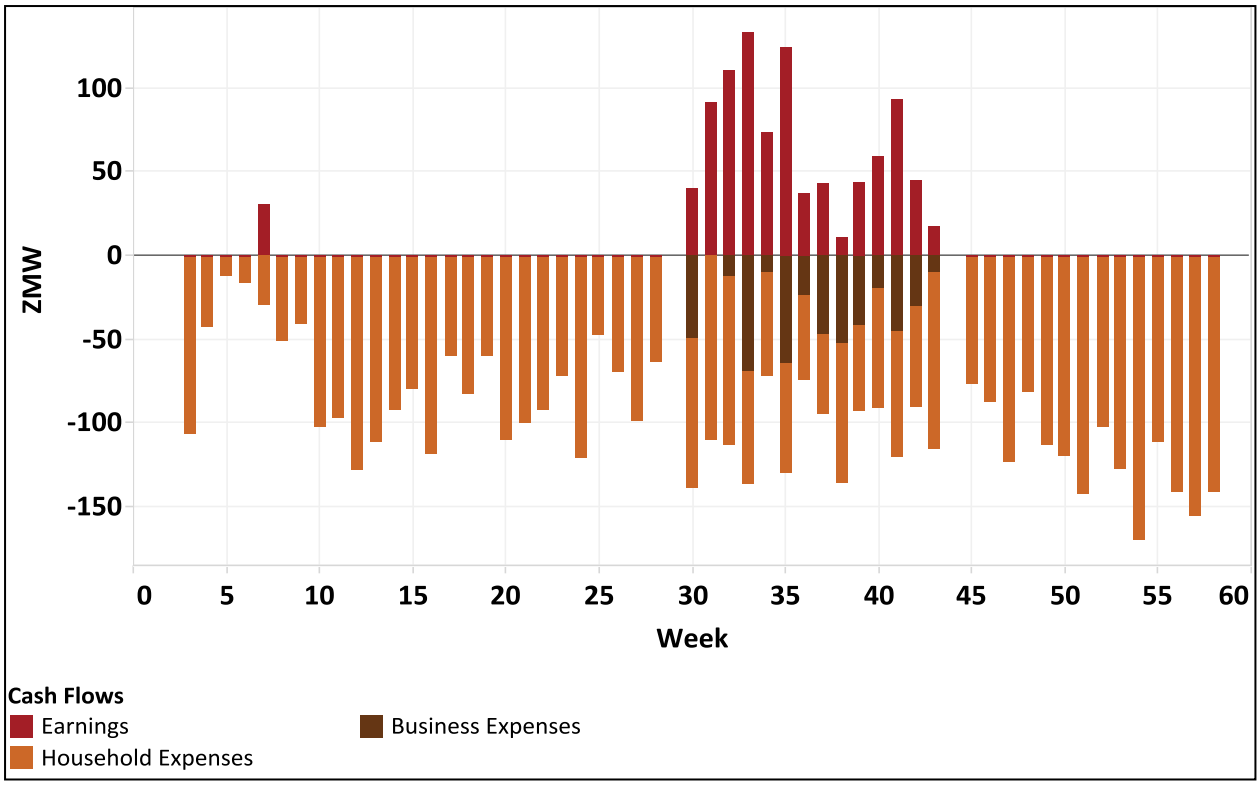
Martha started the Diaries as a dependent, living with her children and her brother's family in a home they owned in Kitwe. Her husband was working in another town, away from the family. The household had very limited assets, owning lamps, a mobile phone, and some farming tools.

In week 30, Martha and her brother had a dispute, causing him to take his family and leave Martha and her kids behind. After his departure, Martha asked her sister for ZMW 100 that, along with three bags of charcoal her husband bought her, she used to start a new small business. In addition to selling charcoal, Martha also began selling popcorn and would sell her goods by the roadside near her home. The pressure of supporting her kids, however, caused Martha to use up most of her capital to buy household necessities, eventually causing her business to go under around week 45.

Cash Flow Management

Before her brother left, Martha was responsible for making most of the household purchases. She would receive money from her brother weekly, and would take this money to buy food, charcoal, and other household items. When she had leftover money, she would save a small portion at home.

Figure 57: Martha's Income and Spending

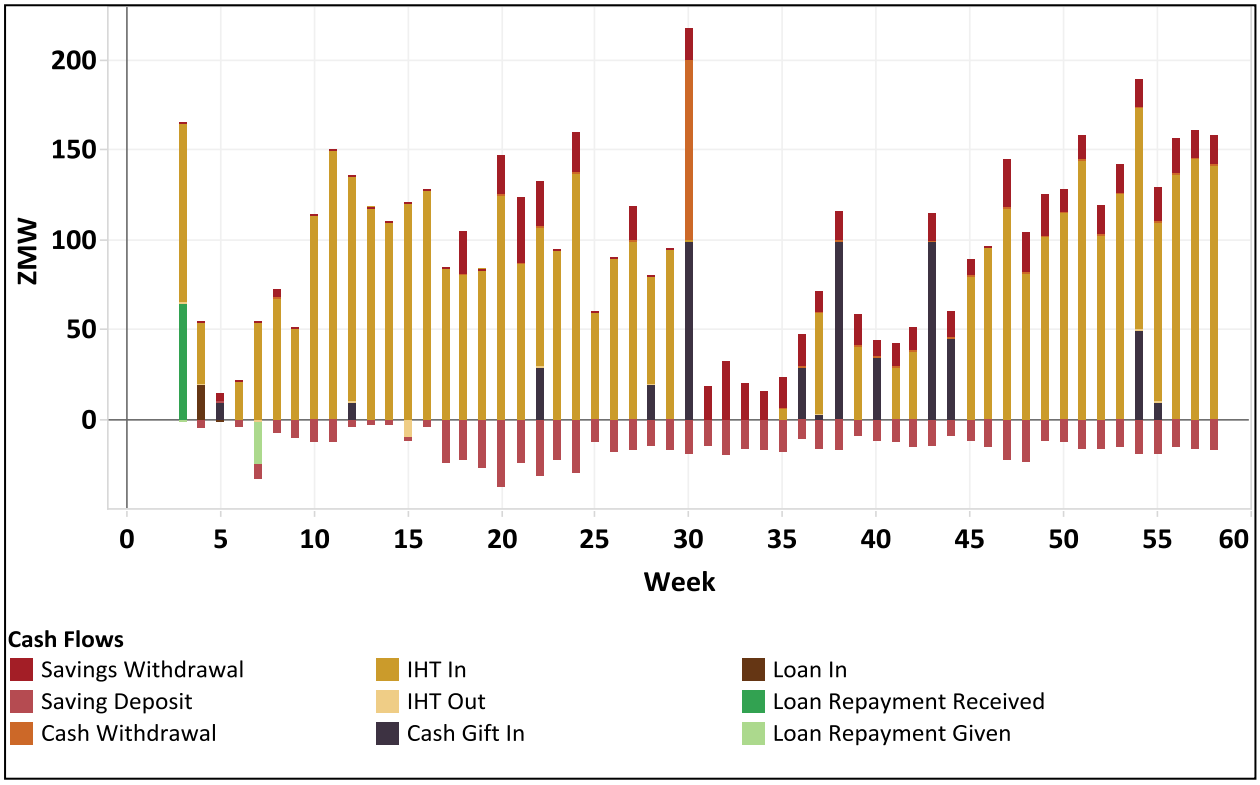


Once her brother left, her life became tough as she now had the responsibility of looking after her family on her own. She started her new businesses of selling popcorn and charcoal to try and mitigate this pressure, but she did not reinvest enough of her capital back into her business, choosing instead to buy household necessities for her family. In week 45, Martha reported that her business had gone under, but it was also around this time that her husband returned and began providing her with financial support.

Savings, Cash Transfers, and Loans

Martha spent a majority of the study dependent on either her brother or her husband for financial assistance. The only exception was for the brief period after her brother left when she was operating her business. Throughout the study, Martha regularly made small deposits into her home savings, though she would also take out money on almost a weekly basis. Her only interaction with an FSP was in week 30 when she received ZMW 100 to help start her new businesses. Apart from this one encounter, she did not use FSPs due to a lack of information about them.

Figure 58: Martha's Use of Financial Tools and Networks



Martha took out one loan from her friend early in the study to help purchase food. She thinks borrowing from friends as best as friends do not charge high interest rates like local moneylenders do. The irony of this is that Martha is also a moneylender, occasionally loaning money to community members, and she says that she charges 50 percent interest per month on her loans. In week 3, we saw that this provided her a relatively decent sum of ZMW 65 when a borrower repaid one of her loans.

Financing Risk Events and Lump Sums

In times of emergencies, Martha says she would turn to family and friends for financial assistance, as she did in week 30 when she asked her sister for financial assistance. However, she does not always think that family and friends are reliable given that they might not have the money to support her. Instead, she prefers to turn to her church for support as it has helped her in the past by giving her food and clothes following the birth of her youngest child prior to the study.

Martha only made a few, small lump-sum purchases during the study for her charcoal and popcorn businesses. She financed her initial costs using the money she received from her sister in week 30 and financed the rest using her own business income. She preferred to use her own money so that

she did not have to rely on relatives who might let her down, but she says she would turn to them if she had no other choice.

CASE #4: FARMER WITH MULTIPLE INCOME SOURCES

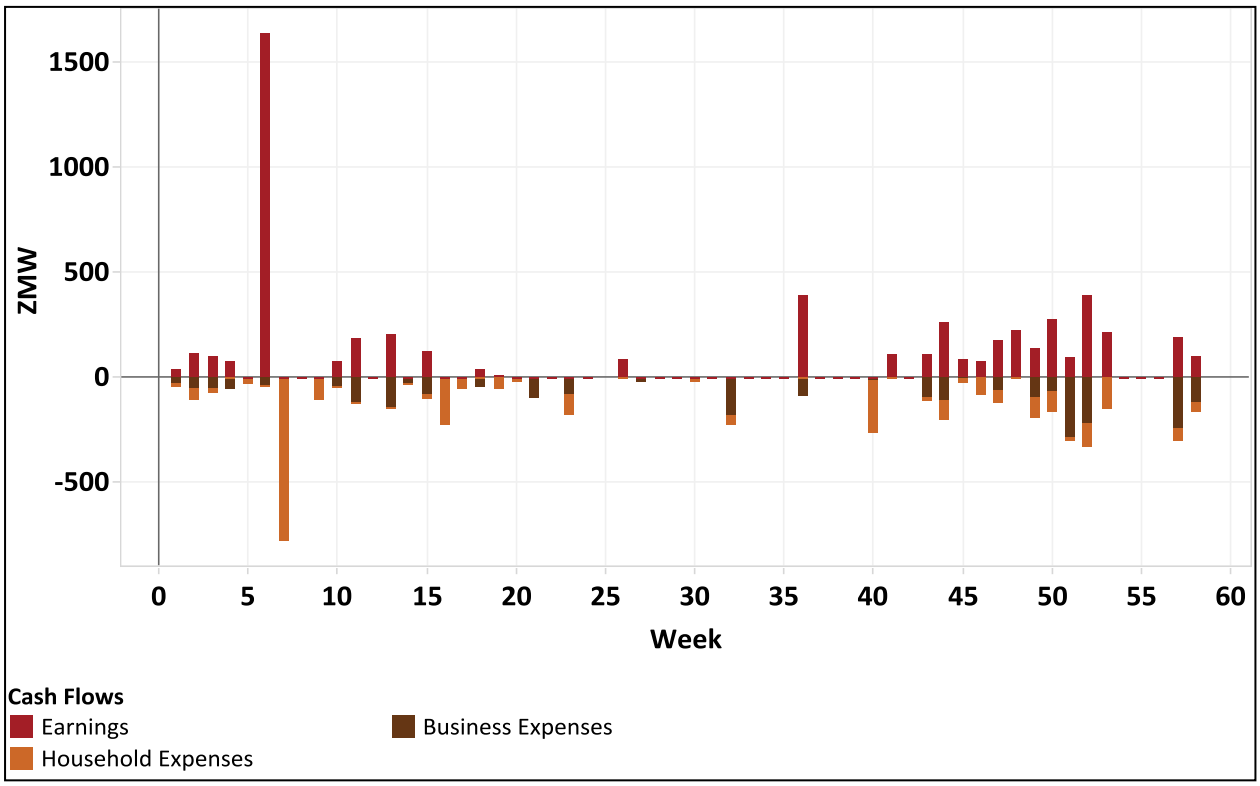
Phalesy is a farmer and businesswoman living with her three young kids and four other adult family members. They reside in a small village outside Chipata in a small home they built. Her family has some assets, such as lamps, a mobile phone, chickens, goats, cows, and some farming tools.

Phalsey primarily focuses on her farm, growing maize, sunflowers, tomatoes, vegetables, and cotton. Additionally, though, she runs a small side business of selling cooked meat within the village. She manages these activities herself, though her children would help her from time to time. Despite her income being irregular, she is able to pool these various sources and save her profits in order to finance her household and business spending year long.

Cash Flow Management

Phalesy holds most of the responsibility regarding household purchases and finances, only consulting her family when it comes to making major purchases. She is careful with her finances and writes a budget every five to six months to help manage her household and business expenditures. Typically, when she has leftover money, she saves it at home in order to purchase inputs for her farm or supplies for her business. However, she also saved some money in case emergencies arise. This behavior was best seen following her large maize sale in week 6 where she sold 23 bags of maize to the Food Reserve Agency for over ZMW 1,500. Immediately after making this sale, Phalesy used some of the money to buy cement and a solar inverter for the household, and she deposited the remainder into her home savings where she periodically withdrew it to cover household expenses. For managing the cash flow of her livelihoods, Phalesy has two approaches. For farming, she plans far in advance, after clearing her field from the last harvest, and for her meat selling business, her strategy is more reactionary, only purchasing inputs when what she had run out. This explains her infrequent business expenditures throughout the study.

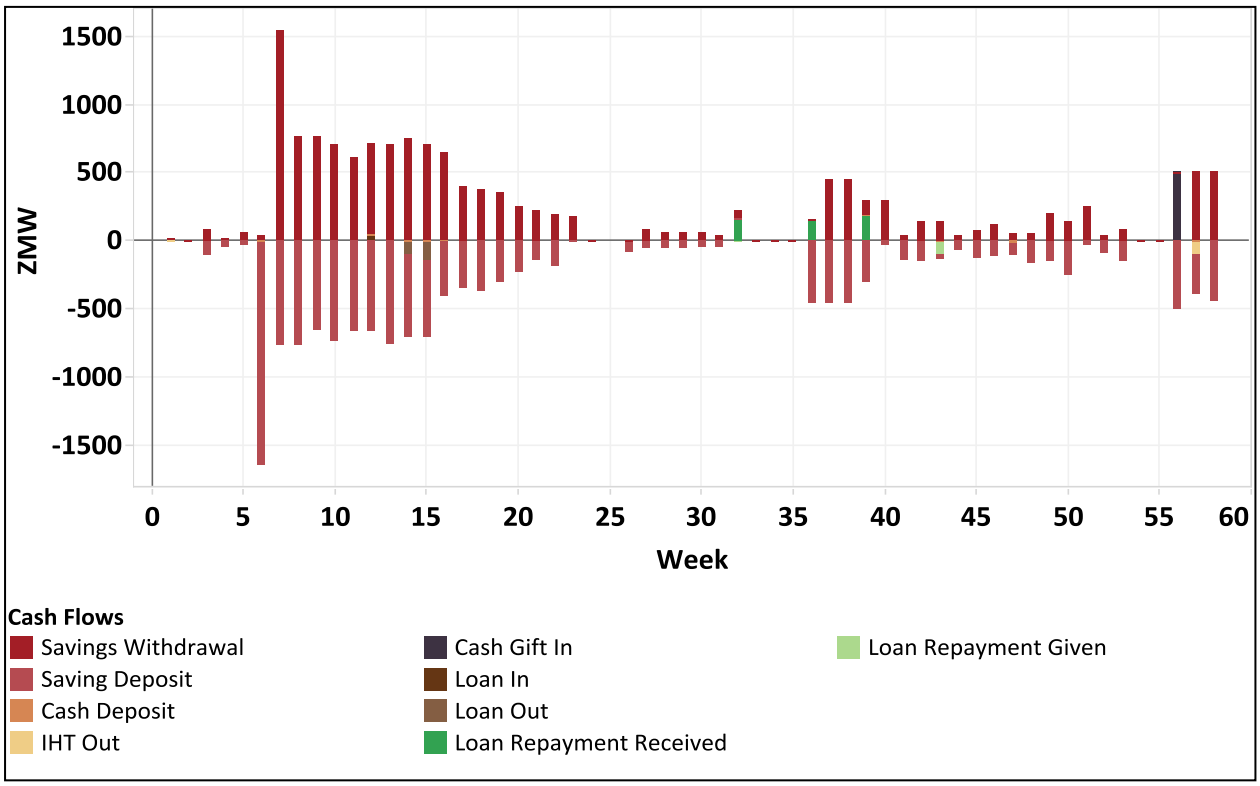
Figure 59: Phalesy's Income and Spending



Savings and Loans

Phalesy's most used financial tool was her home savings, which she would regularly make withdrawals from and deposits into. She was also a member of a savings group comprised of her friends and neighbors. The group offered flexibility on the amount and frequency of deposits that members could make, and it allowed members to take out loans for low interest rates. The issue with the group, however, was that so many members had taken out loans and not repaid them, and Phalsey had been unable to collect any of the money she had been saving with the group because of this.

Figure 60: Phalesy's Use of Financial Tools and Networks



Before the study started, Phalesy took out an in-kind loan from Cargill that provided her with cotton seeds. In week 36, she repaid this loan by providing Cargill with 50kg of cotton that she had produced from its seeds, and she sold another 135kg to it as well. She likes the arrangement that Cargill offers, saying that the loan process was generally easy and that it provided her with access to cotton seeds she otherwise could not attain. Apart from her in-kind deals with Cargill, Phalesy sometimes provided cash-based loans to friends and family, as she did in weeks 14 and 15, but would not charge interest when doing this.

Financing Risk Events and Lump Sums

In times of unexpected crises, Phalesy believes that the village provides the support one would need in order to help finance emergencies. After the loss of her mother in week 55, for example, she received financial support from her friends and family, allowing her to pay for her mother's funeral. If need be, she says she would also consider taking out a loan from friends or family.

Phalesy made lump-sum purchases for items such as cement (ZMW 246), a goat (ZMW 200), and fertilizer (ZMW 230) during the study. For the most part, she financed these purchases using her own home savings, which she believes is the best way to pay for large expenses. Although she is aware of organizations like VisionFund that offer loans to farmers, she does not trust their services and says she is uncomfortable acquiring a loan from them. This is because, according to Phalesy, organizations like VisionFund require recipients to take out loans in groups, something she is not comfortable doing. Additionally, she worries that their repayment periods are too short and that she would not be able to repay on time.

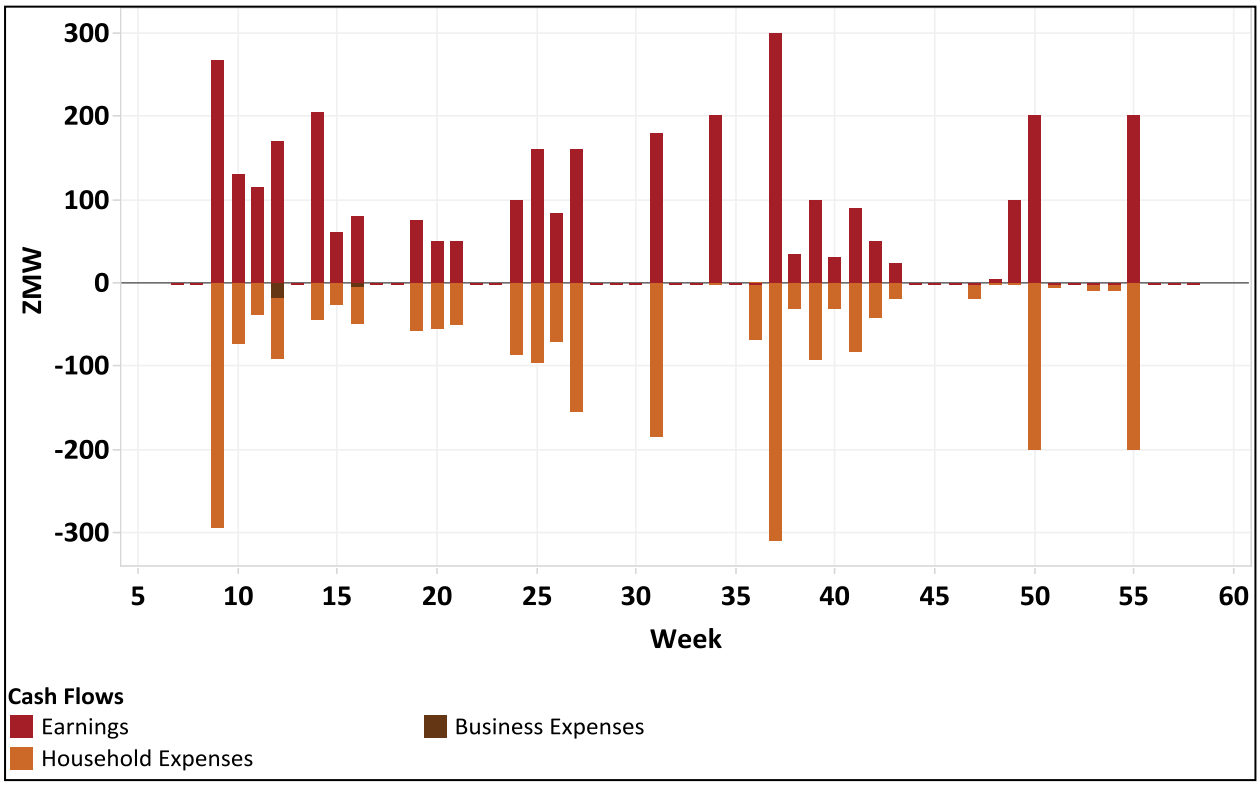
CASE #5: FARMER WITH FEWER INCOME SOURCES

Liyelu lives with his wife and children in a house they built in a village outside Mongu. He is a farmer who grows cabbage, tomatoes, and other vegetable crops, using the rivers nearby as a water source. He works alone on his farm for a majority of the year, but says he would allow piece workers to help if the harvest was too much for him alone. His crop sales provided him with a somewhat steady stream of income, though he did have several weeks where he earned no income and relied on goods he had stored away. No one else in his household works; this means that Liyelu's harvests are the only source of income for the household.

Cash Flow Management

Liyelu is responsible for making all financial decisions in the household, stating that he does not trust his own wife and children with his money and prefers not to discuss these matters with them. He uses a budget to manage his household's day-to-day expenses, though he does not write it down and it changes from month to month. If he has leftover money at the end of the day from his vegetable sales and household purchases, he says that he saves it in case of emergencies.

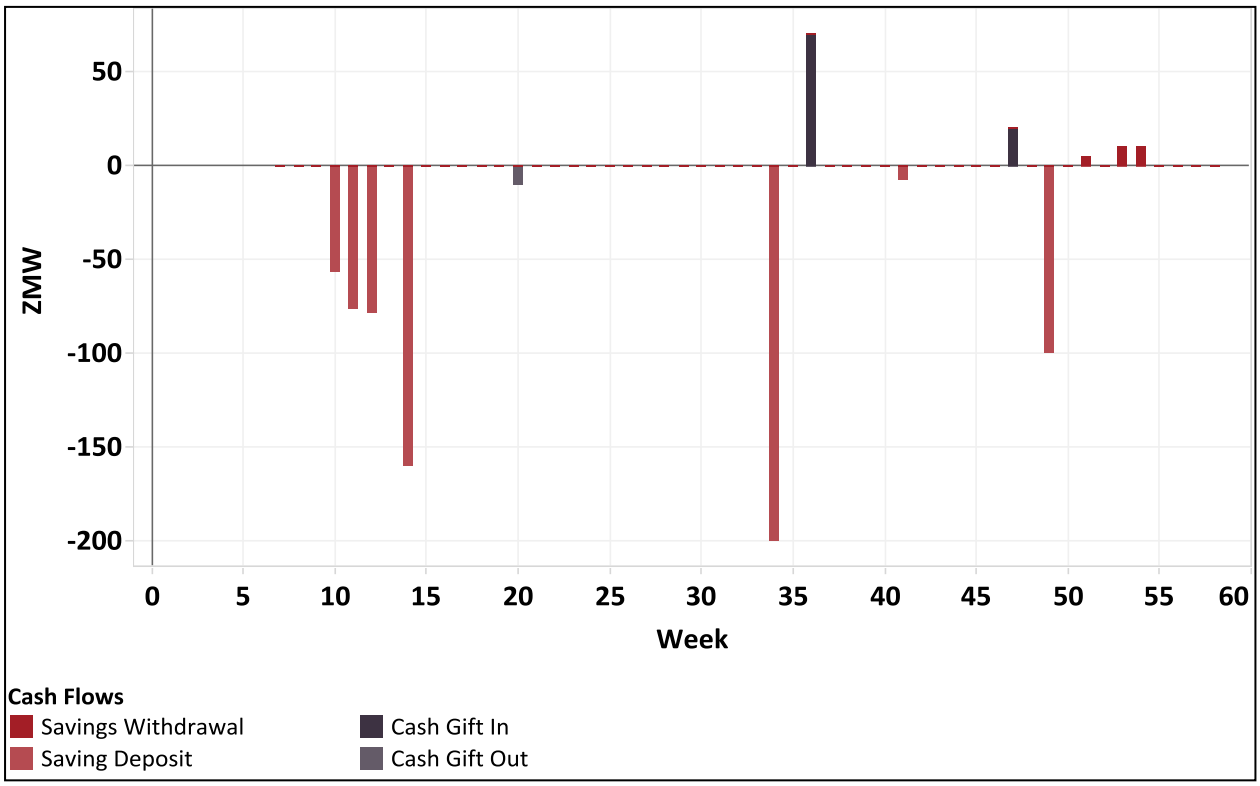
Figure 61: Liyelu's Income and Spending



Savings, Cash Transfers, and FSP Aversion

Liyelu had very limited use of financial tools, predominantly saving at home. He occasionally gave or received money to/from his friends when someone was in need, and he gives this money as a gift that the receiving party need not repay. Apart from these few instances, Liyelu expressed a strong aversion to using any service provided by an FSP. Specifically, he says that he does not trust them and fears that they will "just [bring] people problems" as they are forced to focus on repaying the FSP and "might not concentrate on their farm work and harvest more." He also fears that FSPs would seize his property if he failed to repay them on time.

Figure 62: Liyelu's Use of Financial Tools and Networks



Financing Risk Events

Liyelu prefers to rely on his own savings and income to pay for emergencies. In week 55, for example, his sister fell ill and in order to save her life, he used his income to hire a car to take her to the hospital for medical treatment. He also says that he would turn to friends in his community during emergencies as they are generally willing to help in times of crisis. If he were to use a financial service to help finance unexpected expenses, he says he would prefer to receive a loan from the community rather than any FSP.

CASE #6: SKILLED SERVICE WORKER

Nicholas is a young businessman who lives with his family in Kitwe. His household is generally well-off, residing in a building made of concrete and owning electronics such as a TV, DVD player, electric iron, and mobile phone.

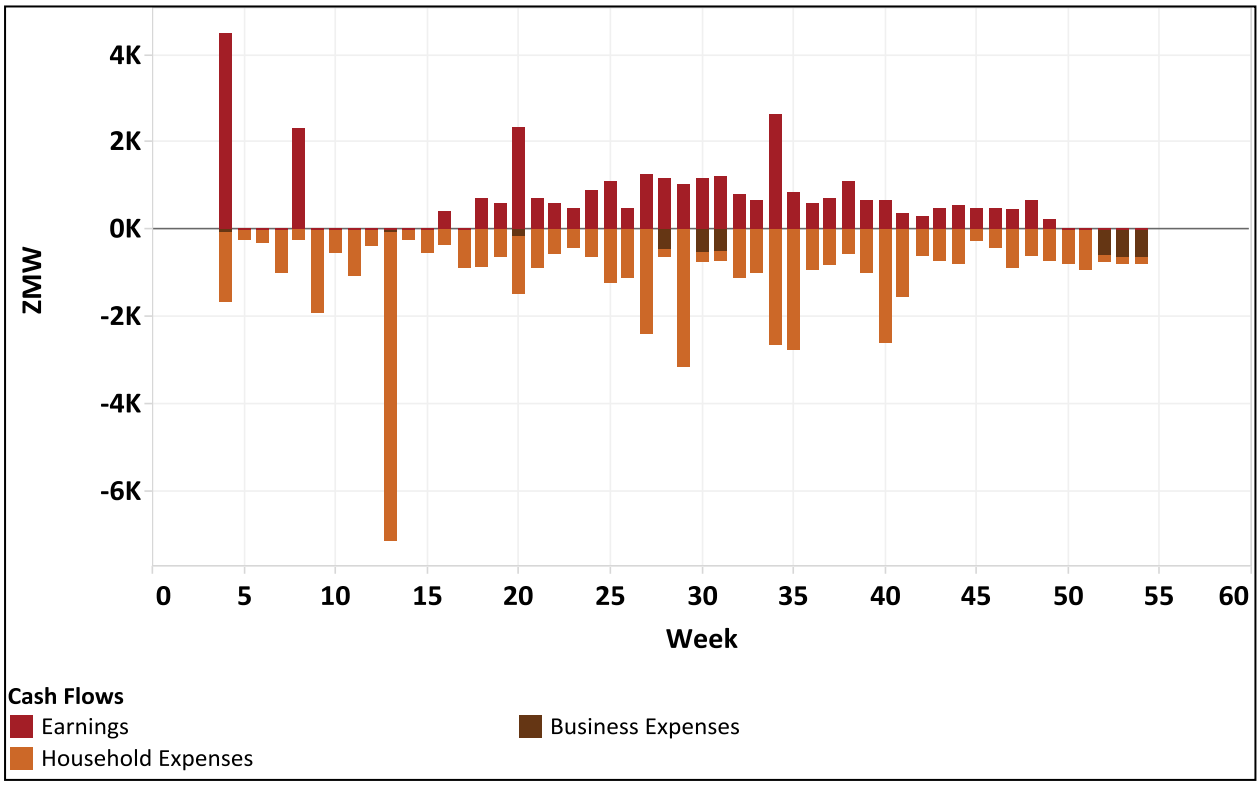
At the start of the Financial Diaries, Nicholas was working for the mines as a dump truck operator. As the mines scaled down their operations though, he lost his job and began working as a taxi cab driver around week 16. He would typically work between 15:00 and 22:00, driving around the town center and residential areas looking for customers. He is not the only income earner in the household though; his wife also works as a dump truck operator for the mines.

Cash Flow Management

Nicholas shares the responsibility of managing household finances with his wife. While she is responsible for purchasing household necessities like food, they make other financial decisions together and share the responsibility for paying bills such as rent, school fees, and utilities. Together, they have a budget they use to cover day-to-day expenses on a monthly basis, but they do not write it down. Nicholas would save his leftover money either at home or at the bank for safekeeping.

Despite making weekly fuel purchases for his car, Nicholas does not consider these business purchases as he "did not consider operating a taxi as a business, but just something he did to cover household expenses."

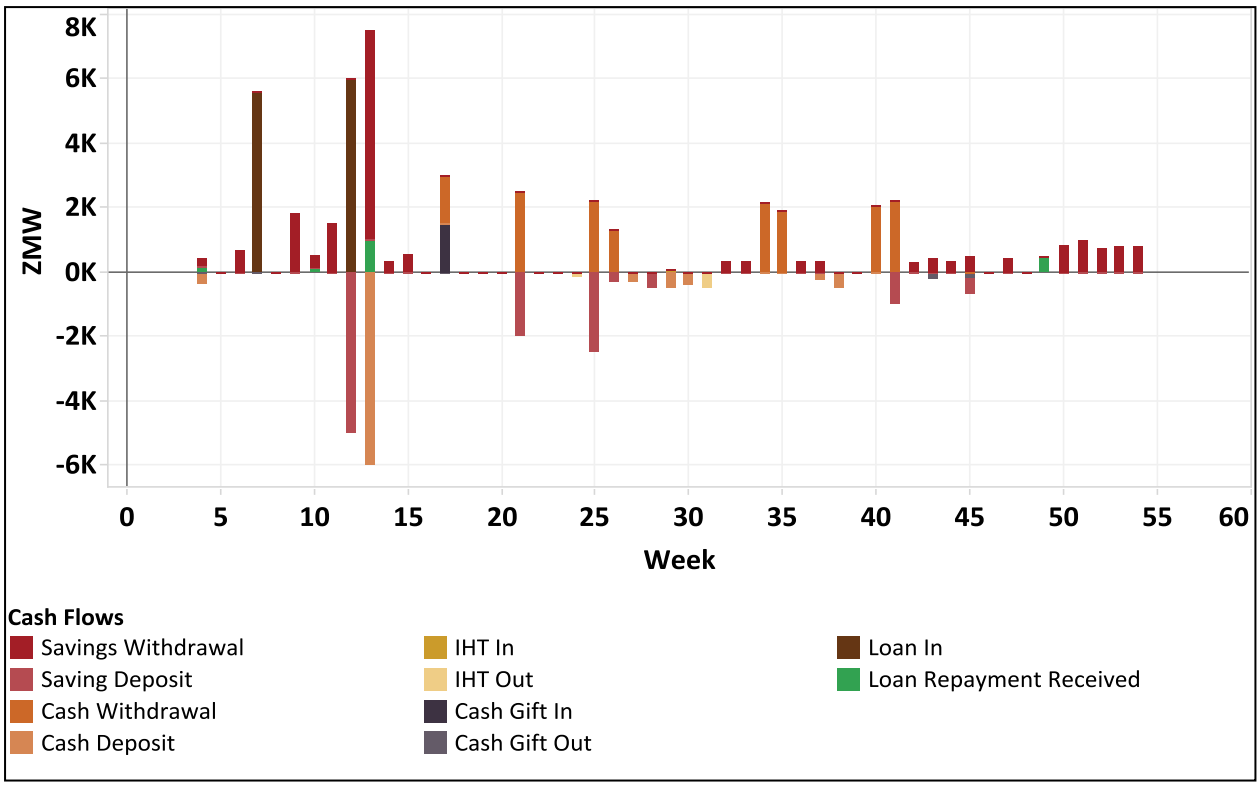
Figure 63: Nicholas' Income and Spending



Savings, Cash Transfers, and Loans

Nicholas' most used savings tool was his home savings, but he also used three separate savings accounts: one with Zanaco Bank, one with Zambia National Building Society (ZNBS), and one with MTN. He opened his ZNBS account in order to receive his salary from when he was working at the mines, and he opened an account with Zanaco in order to do most of his savings. He also used his MTN account to save for small, unexpected events, and he likes MTN because the outlets are "everywhere," making it easy to access his money when needed. He occasionally gave and received money to/from his family members and friends. For his household members, they usually exchange money when someone is sick or when something vital needs to be purchased, and for non-household members, they exchange money in times of funerals or weddings.

Figure 64: Nicholas' Use of Financial Tools and Networks



Nicholas took out two loans during the study, one from his old employer in week 7 and one from ZNBS in week 12. Immediately after taking out the loan in week 12, he deposited it at home, and withdrew it the following week to purchase the car he now drives for his taxi business. He thinks that taking out loans from his employer and from ZNBS was easy as he did not have to fill out too much paper work and was offered much more agreeable repayment terms than if he had gone to a local moneylender.

Financing Risk Events and Lump Sums

Nicholas experienced very few emergencies during the study, and the ones he did experience, such as his nephew's death, he was able to finance using his own income and savings. In weeks 25 and 26, he had to take his car in for routine maintenance, which he was also able to finance using his business income and savings from his two bank accounts account. He prefers to pull money from multiple sources in case one source fails, explaining his use of three savings accounts.

Nicholas also reported making several lump-sum payments during the study for rent and his car. He financed his rent payments using his own savings, something he now says he is glad he had so that he did not have to borrow. Nicholas paid for his car, on the other hand, using the loan he received from ZNBS. He liked taking out a loan from ZNBS as it gave him the opportunity to purchase his car without having to save up money for a long time. Additionally, he enjoyed ZNBS's low interest rates and repayment plan, which it spread across many months, making it easier for him to repay. Because of this positive experience, he would consider taking out a loan from ZNBS again.

CASE #7: UNSKILLED SERVICE WORKER

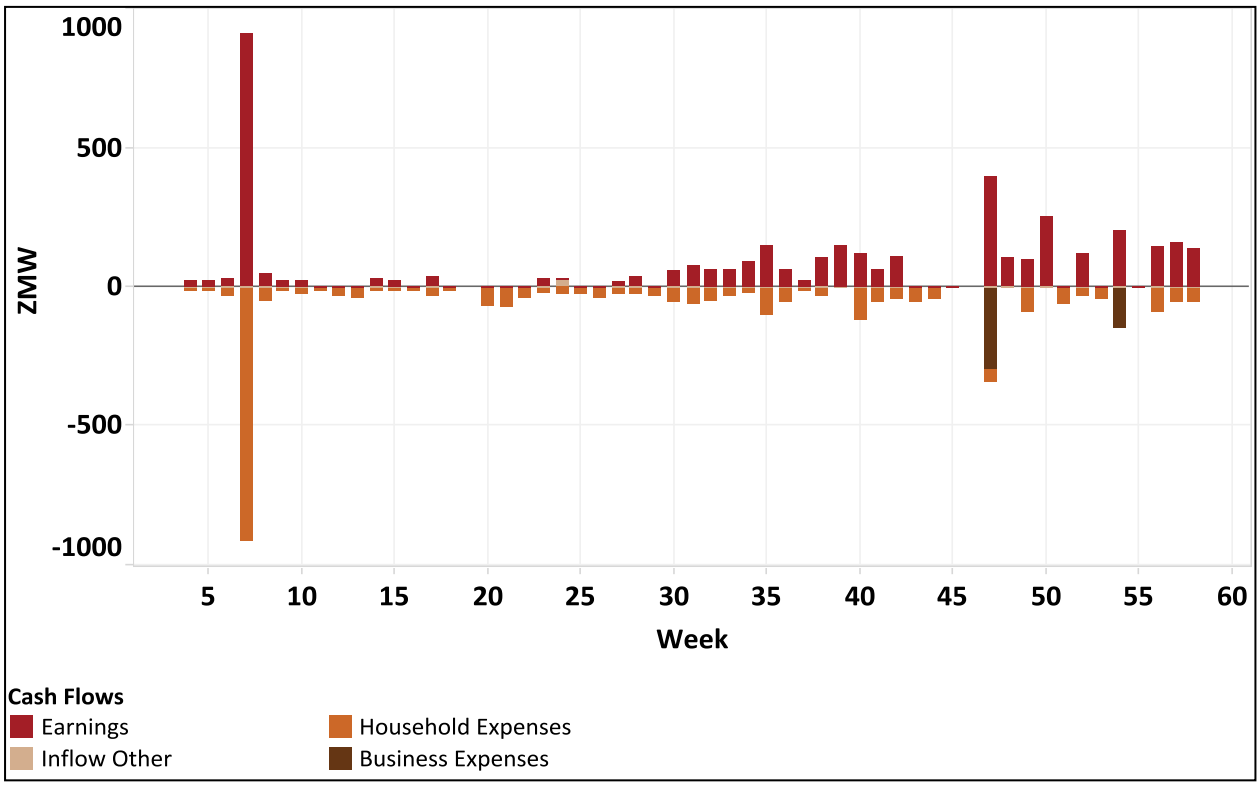
Collins lives with his wife, four small children, and three other adult family members in a dwelling they own in a village outside Chipata. They own a limited number of assets, including a radio, lamps, chickens, pigs, goats, and farming tools.

The family has a farm on their land where they grow maize, groundnuts, and sunflowers. Collins shares the responsibility of working on the farm with his wife who manages the field while he is out working. Collins was normally busy conducting piece work, laboring in people's fields and mending their broken roofs. He performed these jobs on almost a weekly basis, working for anyone who would agree to hire him. Although he did not always make very large sums of money from his jobs, they provided him with a regular stream of income.

Cash Flow Management

Collins describes himself as being the only income-generating member of the household, despite his wife's support with the farm. His wife is generally responsible for buying household necessities, but on all other financial matters, they make decisions jointly. The main priorities for the household include farming inputs, food, and basic household items, and once they met these needs, Collins takes any leftover money he might have and saves it at home for future use. The household has a written budget that only applies to costly items, and it does not cover day-to-day expenses. He typically starts saving for his next farming cycle immediately after selling his products from the current one. We saw this twice in the data. First, in week 7, when Collins performed a large piecework job earning ZMW 910, he used almost all of his income for that week to purchase fertilizer, costing him ZMW 880. The timing of this purchase was around mid-December, just around the time of sowing season for maize growers. Additionally, we saw two other large agricultural purchases, one in week 47 for fertilizer and one in week 54 for seeds. Again, the timing of these purchases was before the sowing season for maize.

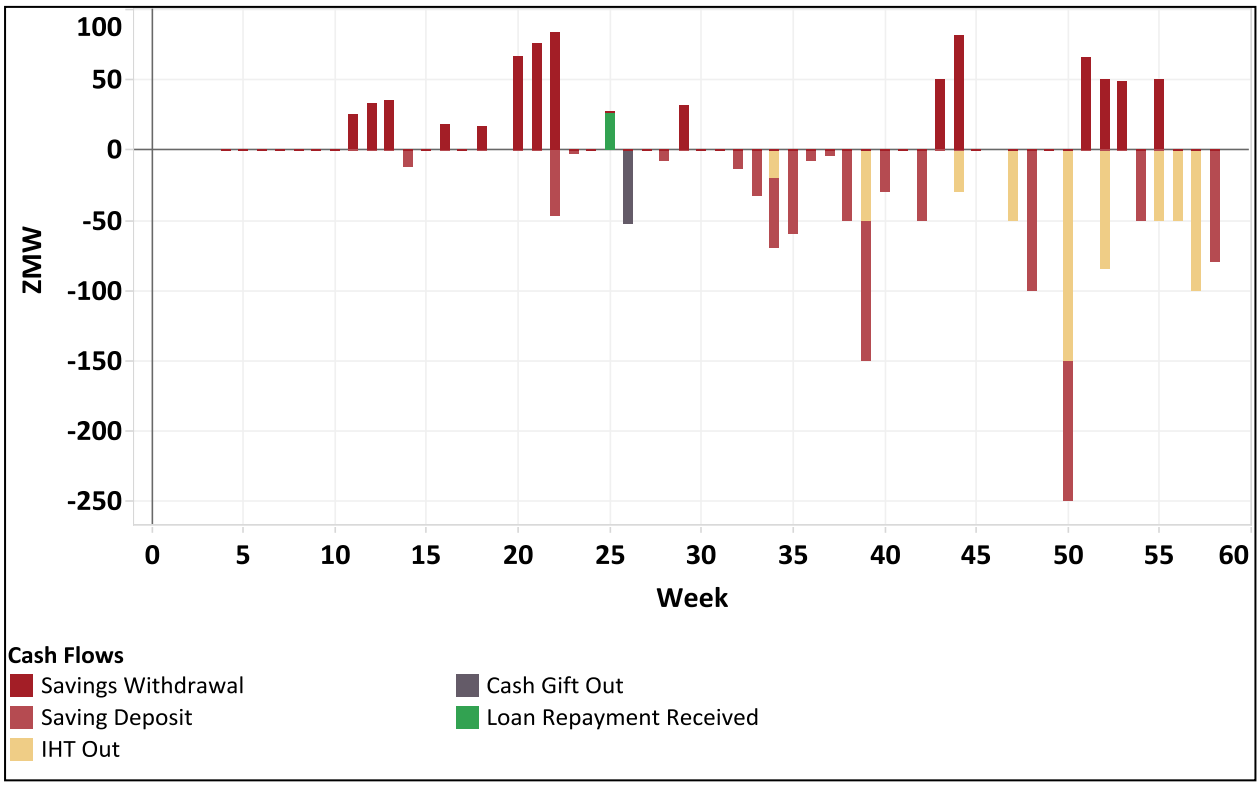
Figure 65: Collins' Income and Spending



Savings, Cash Transfers, and Loans

Collins' most used financial tool was his home savings. He also frequently provided cash transfers to his wife who would take his money to buy household necessities, and he once gave money to his son as a gift in week 26. In week 25, Collins received a loan repayment from a borrower who repaid him ZMW 28. Collins says that this was from a village member whom he had loaned money to when he was having financial problems. Generally, Collins says that villagers loan money on occasion, choosing only to do so when someone is having a financial crisis. Apart from these financial tools, Collins did not use any other financial services as the only other FSPs that he is familiar with are local moneylenders, and he would not want to receive a loan from them due to the high interest that they charge.

Figure 66: Collins' Use of Financial Tools and Networks



Financing Risk Events and Lump Sums

Collins says that he relies on either his home savings or his friends and family for support during emergencies. When he does not have the money saved up, he says he would turn to friends and relatives for assistance, thinking that these people had empathy and would be willing to help him without charging him interest.

Collins also made two lump-sum purchases for fertilizer during the study. For each of these purchases, he financed them using money he had earned while doing piece work. He considers this the best way to pay for large expenses; though, he admits that he is not familiar with any other financial services that could help him finance large expenses.