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**NIGERIA**

small firm  
DIARIES

# Financial Services

**HOW SMALL FIRMS IN NIGERIA MANAGE THEIR FINANCES**

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# Introduction

The Small Firm Diaries is a global research initiative to understand the role of low-income small firms in poverty reduction, and the barriers to growth and productivity of those firms that limit their contribution to local economies. The study uses financial diaries, a high frequency quantitative and qualitative data collection process. In each country, a team of locally-hired field researchers visited a sample of small business owners weekly for a year, gathering data about financial flows and the decisions behind those flows. From 2021 to 2023, the project was active in 7 countries: Colombia, Ethiopia, Kenya, Nigeria, Indonesia, Fiji, and Uganda. For more details on the study methodology, see *Methodology and Process: An Introduction to the Small Firm Diaries*.

In Nigeria, the project followed 161 small firms from August 2021 to August 2022. For the study, we defined small firms as having 1-20 non-family employees. The firms were spread between Lagos, Enugu, and Kisumu. Firms were selected from three industries: light manufacturing (40% of the sample), services (34%) and agri-processing (25%). Just over 40% of firms were owned by women, with another 12% co-owned by a man and woman. For more details on the sample and how it was selected, see *Nigeria Country Report: Data from the Small Firm Diaries*.

By tracking cash flows and listening to the small firm owners themselves, the Small Firm Diaries study offers insight into a segment of this population that has, until now, been little studied and little understood. The Small Firm Diaries occupies the space in between the high-level data of large, nationally-representative surveys and the focused data of individual business case studies. Our goal in this study was to inform policy and practice by a wide variety of actors: financial services providers, business support organizations, government policy makers, funders and other researchers can all use the data and findings of the Small Firm Diaries project to deeply understand and address challenges of small businesses in low- and middle-income communities.

In this brief on financial services, we review data from the Nigeria Small Firm Diaries on the firms' use of financial tools, including bank accounts, digital financial services, and credit. The data reported here was collected before the "cashless policy" implemented in early 2023<sup>1</sup> and is not intended to be representative of regional digital financial services adoption rates. The financial diaries methodology allows us to explore crucial areas of research on firms and financial access with a new level of detail, for example using high frequency data to identify patterns of accounts usage.

Updates to this brief and many additional reports and firm profiles using data from the Nigeria sample will be published at [smallfirmdiaries.org](https://smallfirmdiaries.org).

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<sup>1</sup> Timothy Obiezu, "Nigerians Uneasy About Central Bank's Restrictions on Cash Withdrawals," Voice of America, December 8, 2022, <https://www.voanews.com/a/nigerians-uneasy-about-central-bank-restrictions-on-cash-withdrawals/6868374.html>

# 1. Financial Services Overview

## SUMMARY

A major policy focus for the last decade has been bringing more people into the formal financial sector, spurred on by findings that half the world was “unbanked.”<sup>2</sup> Efforts to bring more people into the formal and regulated financial system, comprising both traditional banking and mobile money, have borne fruit in many parts of the world as shown in the 2021 Global Findex, which reports that the number of unbanked people has decreased by half in the last 10 years.

Most measures of “bankedness” focus on individuals or households, but these measures are generally perceived as a reasonable proxy for the kinds of (not fully formal) firms that operate in low-income neighborhoods. However, there is little actual data on the use of financial services by small firms.

In part this is because measuring the degree to which a person or firm is integrated into the banking and mobile money systems is difficult. Originally measurements of financial inclusion focused on owning an account at a regulated institution, or more recently with mobile money providers. Quickly, researchers realized that simply owning an account did not mean much. If the account is rarely or never used—as it turns out was true of a very large number of bank accounts that nominally were owned by poor households—that is not materially different from not having an account at all. More recently, measures of inclusion have attempted to incorporate measures of use, not just ownership.

A further complication in studying small firms' use of banking and mobile money is that many, if not most, of the small firms in low- and middle-income countries are informal and therefore may not have an account registered specifically to the firm. This does not necessarily mean that the firm is not a user of these financial services—it's possible that the firms use accounts registered to the owner as an individual rather than to the firm. That creates another measurement complication: a fundamental tenet of good business practice is separating business finances from household finances. If accounts are registered to an individual, it's impossible to use administrative data to determine how much of the usage is for a business (when it could plausibly range anywhere from 0 to 100% business use). Finally, a true measure of integration into the formal and regulated financial system is not meaningful without a view of how much of a firm's financial activity takes place outside these systems, using informal services, but especially how much the business relies on (physical) cash.

The financial diaries methodology provides solutions to many of these challenges in measuring the most basic questions about small firms' financial inclusion. The methodology attempts to record all of a participant's financial flows, regardless of what medium (e.g. bank transfer, a mobile money, or physical cash) or accounts (e.g. a bank account, mobile wallet, or cash box) are used. We're also able

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<sup>2</sup> Chaia et al., 2013

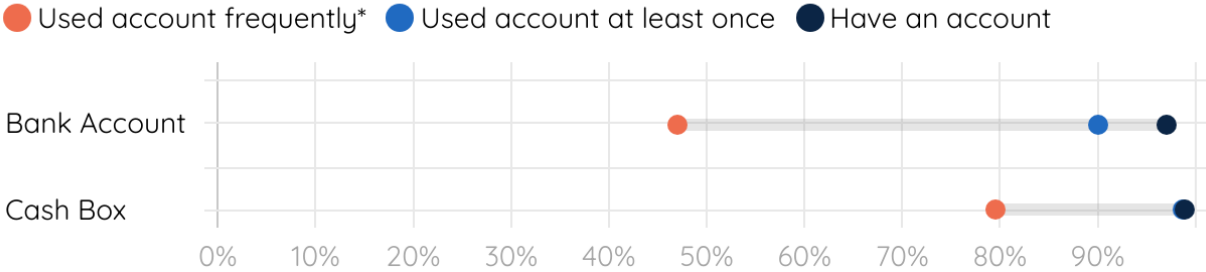
to separate the firm’s use of financial services from personal or household uses, by asking the owners to report only the transactions and financial services (formal or informal) for the firm. In one-off surveys, we also inquire about interest in, uses for, and satisfaction with different types of accounts. All of this data allows us to construct a novel measure not just of whether a firm is “banked” or “included” but the degree to which they are integrated into the formal and regulated financial system. Specifically, we use both account ownership and *percent of value of transactions through a bank account* to describe a firm’s integration into the banking system.

**BUSINESS ACCOUNT OWNERSHIP**

In this report, we focus on bank account ownership and usage specifically for business purposes. At the beginning of the Diaries, we asked each firm owner to list the accounts they used for the firm. As shown in Figure 1.1, almost 100% of our firms say that they own a bank account they use for the business, while the same proportion use a cash box for the business as well. Looking deeper not just at ownership, but those who used an account type at least once during the study, we see a small gap: 90% of all firms—7% less than firms that report owning an account—use their bank accounts at least once. When we look at firms that use a bank account for at least 25% of the value of their transactions during the study, the figure falls from 90% to below 50%. Considering the firms use of accounts from a different perspective shows that cash still is the dominant tool: 80% of firms used cash for more than 25% of the value of their transactions, compared to 47% of firms that use bank accounts for more than 25% of transaction value. Overall, while a high percentage of our firms report owning a bank account that they used for the business, a much smaller percentage made bank accounts central to their operations.

**FIGURE 1.1: BANK AND CASH ACCOUNT USE FOR BUSINESS PURPOSES**

In Nigeria, 97% of the small firm owners had a bank account. 90% used it at least once, and 47% used it frequently.

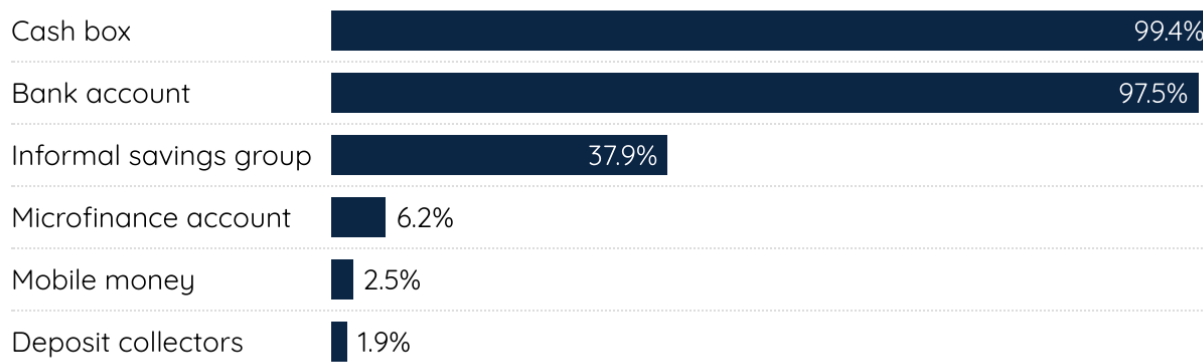


\*for 25% or more of transactions by value

Beyond bank and cash accounts other account types are less prevalent. About 40% say they have an account with informal savings groups; 6% with a microfinance institution, and 2% have an account with a mobile money provider (a mobile wallet) (Figure 1.2).

## FIGURE 1.2: SUMMARY OF ALL ACCOUNT TYPES REPORTED (FOR BUSINESS USE)

Percent of firms reporting at least one account per account type



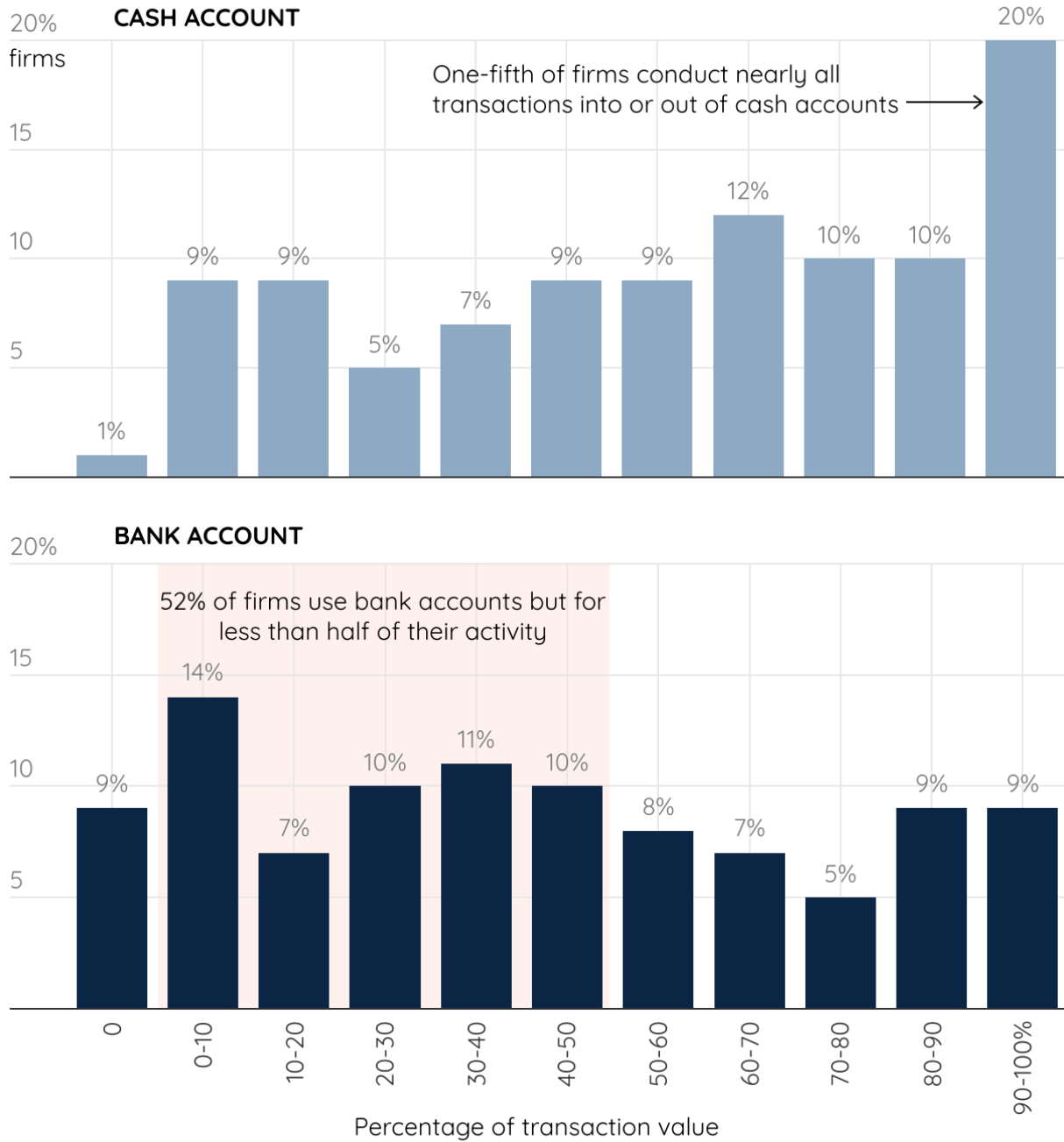
### BUSINESS ACCOUNT USAGE

Of the firms that do use their accounts, we can use the high frequency data gathered to see how important a bank account is in each firm's financial management. As our methodology allows firms to bundle small transactions, and most small transactions happen in cash, we choose to focus on value of cash flows instead of a count of transactions to avoid underestimating the role of cash.

For each transaction recorded we ask the firm owner the value, the mechanism of the transfer (e.g. cash or bank transfer), and the type of account used. When we ask what account was used, we record the firm owner's perception of where the transaction originated (for an expense) or terminated (for income). For this reason it's important to note that not all transactions reported as into or from a bank account are made by bank transfer or at a branch, but may have been cash transactions deposited in a bank account. For example, when a customer pays in cash, and the firm deposits that cash into a bank account, the firm owner may still report the "account used" for the transaction as the bank account— even if the cash is stored in a cash box or till for several days before the deposit is made. From the firm owner's perspective it is salient that the payment ends up in the bank account, which reflects the value that the firm places on the bank account as a useful tool for storing or saving money, but it adds a layer of complexity in interpreting the "account type" and "transaction mechanism" data, which we will discuss in further detail in the next section.

To better understand how firms use and value bank accounts, in this report we look deeper into the cash flow data to categorize a firm's level of banking activity based on the value of its total transactions from or into a bank account. This analysis reveals a quite different picture of integration than measures of either ownership, or ownership and transaction alone. Figure 1.3 shows the percentage of transaction value going into or out of cash accounts (top) or bank accounts (bottom), revealing a wide distribution of banking activity across our sample.

**FIGURE 1.3: DISTRIBUTION OF BANKING ACTIVITY**



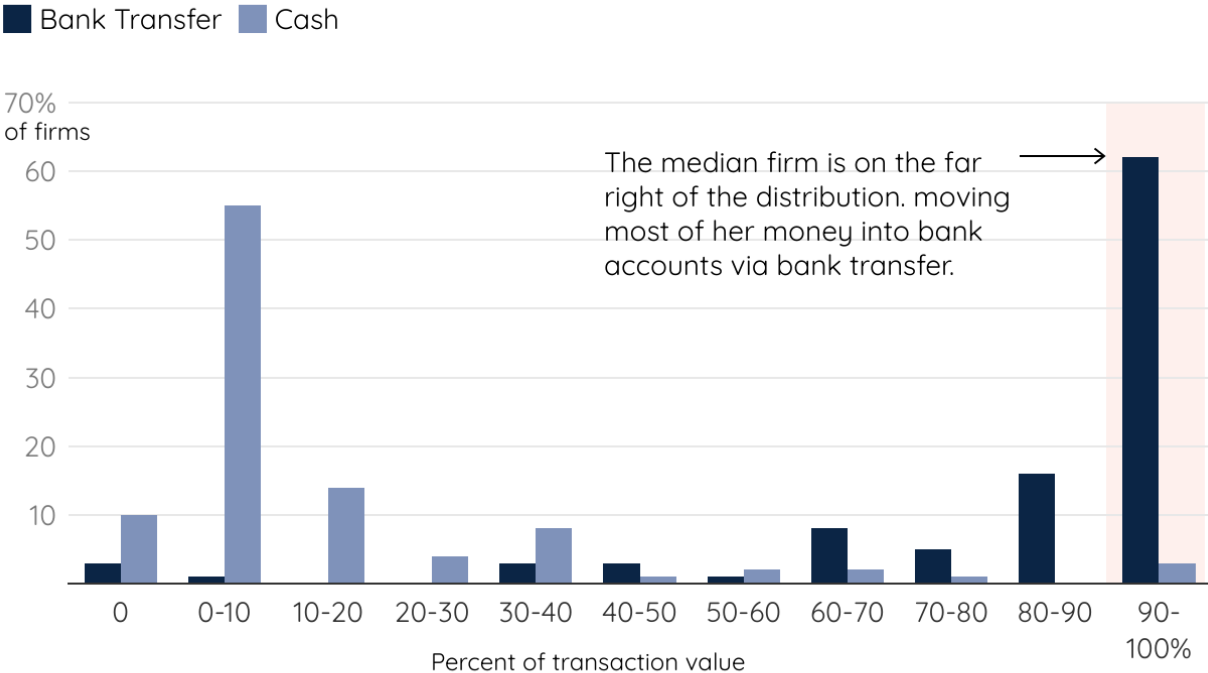
Understanding bank and cash account usage at this level of granularity allows us to make recommendations about how best to advance formal financial integration for this population—for instance, focusing efforts on the firms that are using formal finance but for less than half of their activity (about 52% of firms, as highlighted above in Figure 1.3) rather than on the small percentage of firms (9%) that don’t use a bank account at all.

# TRANSACTION MECHANISMS

In this report, we rely primarily on “account type” data for our analysis of financial integration. However, as noted, the downside of this data category is that we don’t know how the money was moved into or out of the bank account, whether by bank transfer or in cash. However, we did separately collect data on these “transaction mechanisms.”

Figure 1.4 maps the relationship between these two types of data—“account used” and “transaction mechanism”—to illustrate whether firm owners are moving money into and out of their bank accounts electronically using bank transfers, or manually in cash. The median firm in the Nigerian sample uses bank transfers for moving money into and out of her bank accounts for the vast majority (92%) of her total transaction value into those accounts. For most of the remainder of her transactions, she likely takes money that she receives in cash and carries it manually to a bank account or bank agent, which results in her reporting that the account used is a bank account, but that the transaction mechanism used is cash. This pattern illustrates that firms rely on banks for both storage and for the transfer mechanisms offered directly, apparently seeing high value in the built in transfer tools provided by banks. This comfort with bank transfers is likely to be a challenge for pure mobile money operators seeking to increase penetration in the small firm segment in Nigeria. By contrast, in Kenya and Indonesia, it is more common to see money moved into bank accounts via cash or mobile money, reflecting both a higher degree of comfort and familiarity with mobile money and with the interoperability of all three systems (cash, bank transfers, and mobile money).

**FIGURE 1.4: HOW FIRMS MOVE MONEY INTO AND OUT OF THEIR BANK ACCOUNTS**





Given our limited insight into the specific details of transaction types and the importance of having appropriate storage mechanisms for business capital, the remainder of the report focuses on the “accounts used” data point to analyze a firm’s level of banking integration.

## SEPARATION OF FINANCES

Separation of business and personal finances is a second key metric for understanding the financial lives of small firms. This fundamental business practice has been shown to be important to firm performance,<sup>3</sup> and is obviously important for understanding administrative data about small firms’ accounts. Nearly three quarters (74%) of our total sample, including firms that are unbanked, report keeping specific separate accounts for their business.<sup>4</sup> Banked firms report keeping separate finances at higher rates (78%) than unbanked firms (40%), but, returning to the theme of cash prevalence, even banked firms are more likely to have a cash box dedicated solely to their business (66%) than a bank account just for the firm (48%). Furthermore, the relationship between bankedness and separation of finances is not completely straightforward: among firms that do not separate their finances, bank account use is still common: 91% of those firms have a “mixed use” bank account, while 59% of firms that don’t separate finances have a “mixed use” cash box.

Size of firms (by revenue) doesn’t make a significant difference in the practice of separating finances: 81% of firms in our highest revenue segment separate finances, while 76% of those in the lowest tier of revenue segmentation do so.<sup>5</sup> Women and men firm owners report separating their finances at the same rate (76%).

We did not verify the legal status of the bank accounts firm owners report (e.g. whether the account is registered to the business or to the owner as an individual). However, we did ask owners about their registrations and their perceptions of whether the firm is formal. While requirements to register a business bank account vary across banks based on our review of bank websites, the most common requirements were a Corporate Affairs Commission Registration and a tax registration. While only 44% of the firms have a tax registration, 75% of firms have a Corporate Affairs Commission registration. Given this, we surmise that at least some of the accounts are not legally registered to the business, but to the owner. Firms with a CAC registration are more likely to be banked—95% of firms with a CAC registration are banked. Different patterns exist for perceived

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<sup>3</sup> McKenzie and Woodruff 2017

<sup>4</sup> Given that bank accounts used for business are likely not registered as official business accounts (see discussion of formalization in the Small Firm Diaries Nigeria Country Report), it may be harder to separate business and household finance without opening multiple accounts, which can then add to costs and fees. This suggests an opportunity for banks to make it easier for business customers to separate their finances and possibly lower barriers to opening business accounts.

<sup>5</sup> Firms are categorized based on median monthly revenue. The cutoffs are: Low: less than NGN 120,000; medium: NGN 120,000 to NGN 320,000; and high: NGN 320,000 to NGN 1 million. Firms with revenue above NGN 1 million are considered outliers. See Nigeria Country Data Overview.

formality. Firms that are heavy users of bank accounts are not more likely to perceive themselves as formal—42% of highly banked firms perceive themselves as formal, compared to 40% of unbanked firms.

## 2. A Deeper Look at Banking Integration

### SUMMARY

In this section we examine how firms differ across levels of banking integration. We begin with a categorization of firms based on how much they use their bank accounts. We then ask whether owner gender, firm sector, level of formalization, and firm size measured by revenue predict different levels of banking integration. We also examine whether firms use bank accounts differently for income versus expenses.

Unsurprisingly, there is a relationship between size of firm and banking integration—firms with higher revenues are banked at higher rates than unbanked firms. However, the relationship between *levels* of banking integration and size is less clear cut, as more integrated firms do not always earn more than less integrated firms.

Banked firms at all levels of integration use bank accounts for expenses and income equally. However, nearly half of employee payments remain in cash, even among banked firms, due to employee preferences. The exception is the most highly banked firms that use bank transfers for essentially all employee payments. More banked firms than unbanked firms separate their business and household finances. Men and women firm owners are unbanked at similar rates, but among firms that are banked, women firm owners have a higher proportion of highly integrated respondents. Across industries, agri-processing firms are more likely to be unbanked or be marginally integrated. Firms with a CAC registration are much more likely to be banked but having a CAC registration does not perfectly predict financial system integration, as partially integrated firms are more likely to have a registration than highly integrated firms.

### CATEGORIZING FIRMS' INTEGRATION

Our sample is not equally distributed and skews downward toward less integration (Figure 2.1). We use our categorization (highly integrated, partially integrated, marginally integrated and unbanked) to explore how levels of banking integration correlate with other measures, including key demographics, but also on formalization and credit access.

**FIGURE 2.1: LEVEL OF BANKING INTEGRATION**

<b>Level of banking integration</b>	<b>Definition</b>	<b>Percentage of firms</b>
High	More than 75% of transaction value into or from a bank account	20%
Partial	Between 25% and 74% of transaction value into or from a bank account	43%
Marginal	Less than 25% of transaction value into or from a bank account	27%
Unbanked	Do not report using a bank account	9%

## REVENUE AND GROWTH

In general, bank account use is correlated with higher revenues. Highly integrated firms have higher median monthly revenues (NGN 478,000) than partially (NGN 238,000) or marginally integrated firms (NGN 221,000), while the few unbanked firms have significantly lower median monthly revenues (NGN 145,000). However, there is still a large overlap in the distribution of median monthly revenues across all levels of financial integration. Clearly, then, there is an opportunity to significantly increase the banking integration of firms at all levels of the revenue distribution.

**FIGURE 2.2: REVENUE PARAMETERS BY LEVEL OF BANKING INTEGRATION**

	<b>Minimum (NGN)</b>	<b>Median (NGN)</b>	<b>Maximum (NGN)</b>	<b>Median CV</b>
High	39,650	477,950	4,475,700	0.44
Partial	27,500	238,268	54,724,595	0.42
Marginal	24,250	221,000	2,337,185	0.38
Unbanked	17,975	145,750	1,120,500	0.44

We also examined the relationship between banking integration and growth. Measuring growth (by revenue or operating margin) is a challenge in the Small Firm Diaries because, as described in the *Nigeria Country Data Overview* in detail, we see a large amount of month-to-month volatility in revenues and margins for the firms. Comparing first month to last month revenues or margins is highly influenced by unusually high or low months, for instance. To best measure whether a firm is growing, we try to assess the overall direction of change, while accounting for month-to-month volatility. To do so we use the slope for the best linear fit for monthly operating margin. We create this line by regressing monthly margins to find the best match, as if monthly margins were more consistent. We then classify any firm with a positive slope as a “grower” and those with negative slopes as “non-growers.” To read more about our growth measurements refer to the aspirations and growth section (Section 9) of the *Nigeria Country Data Overview*. Most firms were clustered around slightly negative or slightly positive slopes, so the difference between a growing and non-growing firm is often small in terms of monthly revenue.

We find no strong pattern between growth and banking integration. As shown in Figure 2.3, only 55% of our highly integrated firms are growers, compared to 60% of unbanked firms.

**FIGURE 2.3: LEVEL OF BANKING INTEGRATION AND FIRM GROWTH**

<b>Level of integration</b>	<b>Grower</b>	<b>Non-grower</b>
High	55%	45%
Partial	51%	49%
Marginal	53%	47%
Unbanked	60%	40%

## **BANK ACCOUNT USE PATTERNS**

We also looked at what types of transactions the firms made to and from each account across levels of banking integration, summarized in Figure 2.4. Highly integrated firms used their bank accounts to receive the majority of their revenues and expenses, and to pay employees. Partially integrated firms were more balanced between bank account and cash for all three types of transactions, while marginally integrated firms slanted heavily towards cash. likely to use cash in each of these three categories. primarily used cash to pay for expenses and employees, as well as receive payments from customers. However, partially integrated firms are slightly more likely to use their bank accounts to receive revenue than pay for expenses or employees.

## FIGURE 2.4: HOW FIRMS HANDLE THREE DIFFERENT TYPES OF TRANSACTIONS

Table shows the median percent of transaction value into or out of each account type

Level of Banking Integration	Revenues		Expenses		Emp Pymnts	
	Bank Account	Cash Box	Bank Account	Cash Box	Bank Account	Cash Box
High	87%	9%	90%	9%	92%	8%
Partial	41%	45%	51%	46%	31%	69%
Marginal	9%	83%	7%	89%	0%	99%

Diving deeper on major expense categories in Figure 2.5 we find that, on the median, firms are more likely to pay all their expense types from cash boxes, with rent and raw materials being slightly less likely to be paid in cash.

## FIGURE 2.5: HOW SMALL FIRMS PAY FOR MAJOR EXPENSES

Median percentage of transactions by value



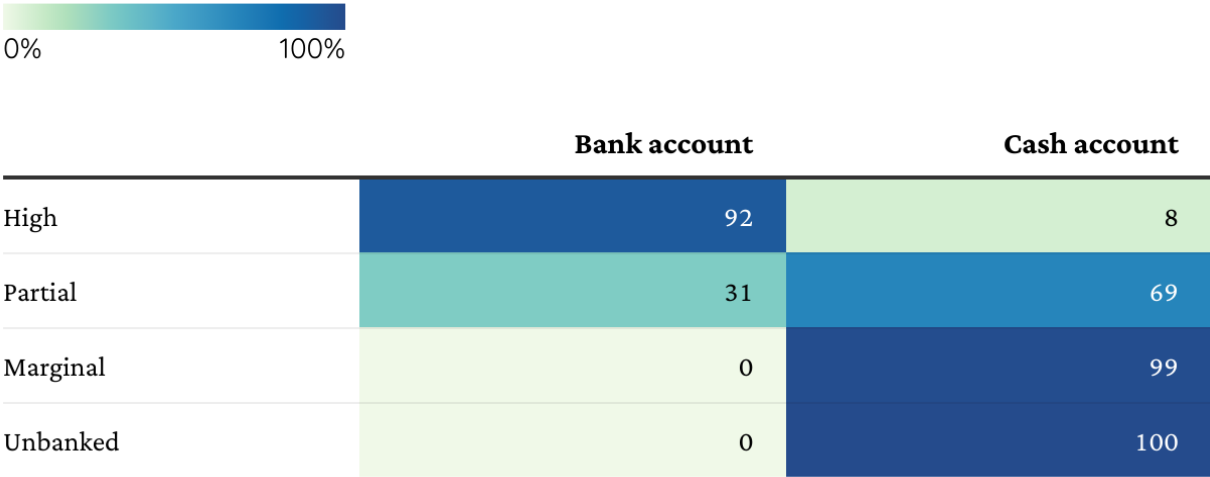
	Bank account	Cash account
Raw materials	37	63
Rent	27	73
Fuel	0	100
Taxes	0	100
Utility Costs	0	100

As there is a global effort to increase adoption of digital financial tools by encouraging employee payments via digital financial services (DFS), we looked specifically at the use of types of accounts for employee payments and how common cash is. By total value, 51% of all payments to employees

are made in cash, similar to the proportion from bank accounts (48%). However, when we look at the use of cash for employee payments by the level of banking integration, we find that while highly integrated firms essentially never use cash to pay their employees, firms at all other levels of banking integration use cash for the vast majority of their employee payments.

**FIGURE 2.6: ACCOUNTS USED TO PAY EMPLOYEES**

Median percentage of transaction value by account type



Percentage of gross employee payments by account type



When we asked firm owners about their payments to employees, we heard that this pattern of paying employees in cash is often linked to employee preference. Though we do not have complete data on employee preference, many firms shared that their form of payment was based on the needs or wants of the workers.

Interestingly, firms seem to have the power and willingness to dictate to customers how they pay, but not to push employees into their preferred forms of payment. A male firm owner who produces fish feed in Lagos told us that he set up an account in order to accommodate customers who wanted to pay him via mobile app. In recent years his customers have transitioned more and more towards electronic payment methods, and now only around 20% of transactions occur in cash. Meanwhile, he determines how he pays his employees. He does not personally prefer to use mobile banking for his business, expressing fear that if he were to lose his phone he would lose access to that money.

He offers his employees the option of being paid in cash or bank transfer; if they choose the latter he goes to the bank in person to make the transfer.

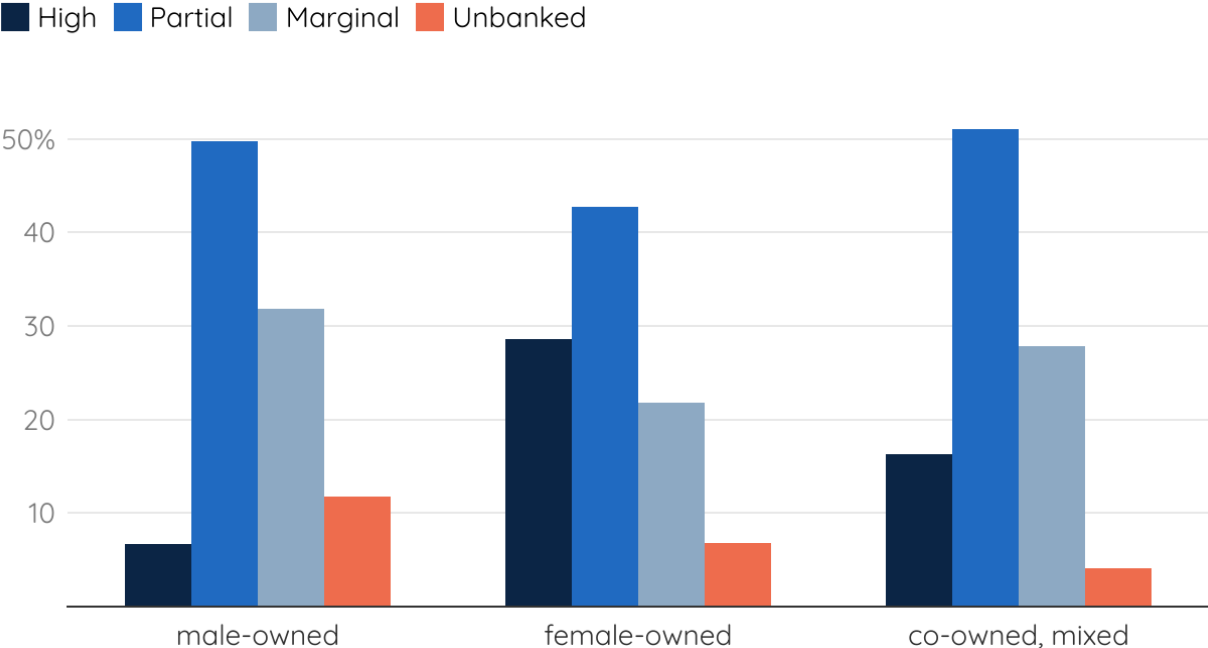
## INTEGRATION AND FIRM/OWNER CHARACTERISTICS

### Gender

Female and male firm owners were unbanked at a similar rate: 8% of women firm owners did not have business bank accounts, compared to 12% of male firm owners. Among the firms that do have accounts, women firm owners are a little more likely to be integrated respondents: 28% vs. 14% of men.

Female firm owners and male firm owners use their bank accounts at a similar frequency—looking only at the subsample of firm owners with bank accounts, the median woman-owned firm conducts 45% of total transactions into or out of bank accounts (measured by value of those transactions). The corresponding figure for the median men-owned firm is 40%.

**FIGURE 2.7: BANKING INTEGRATION LEVEL AND OWNER GENDER**

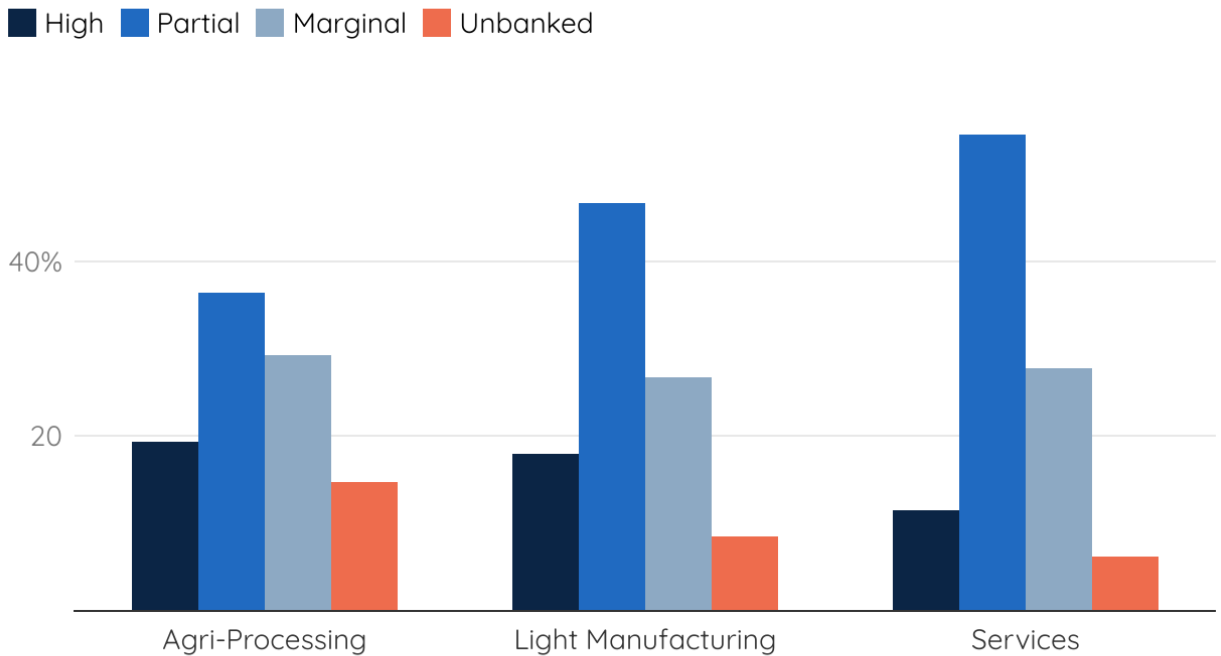


### Industry

Firms in different industries are similarly distributed across levels of banking integration. The median percent of value flowing through a bank account is similar across industries, 35%, 45%, and 42% for agri-processing firms, light manufacturing firms, and services firms respectively

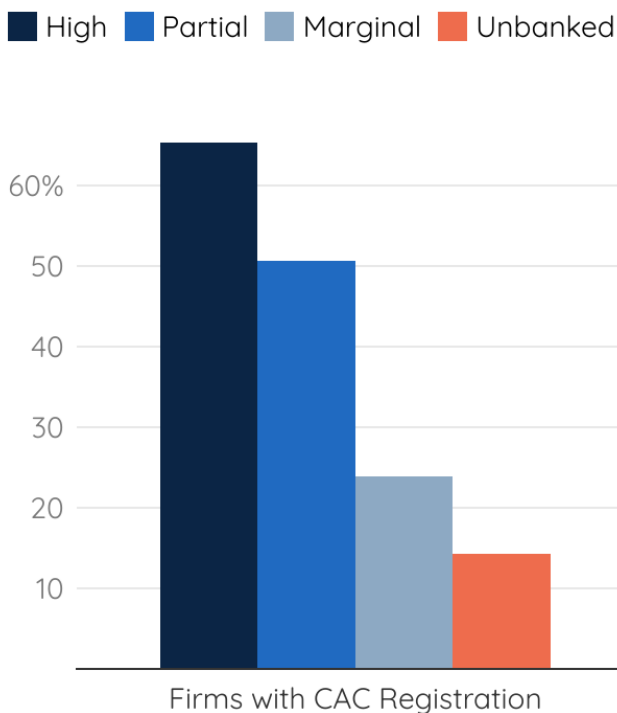


**FIGURE 2.8: BANKING INTEGRATION LEVEL AND INDUSTRY**



**Formality**

**FIGURE 2.9: BANKING INTEGRATION LEVEL AND FORMALITY**

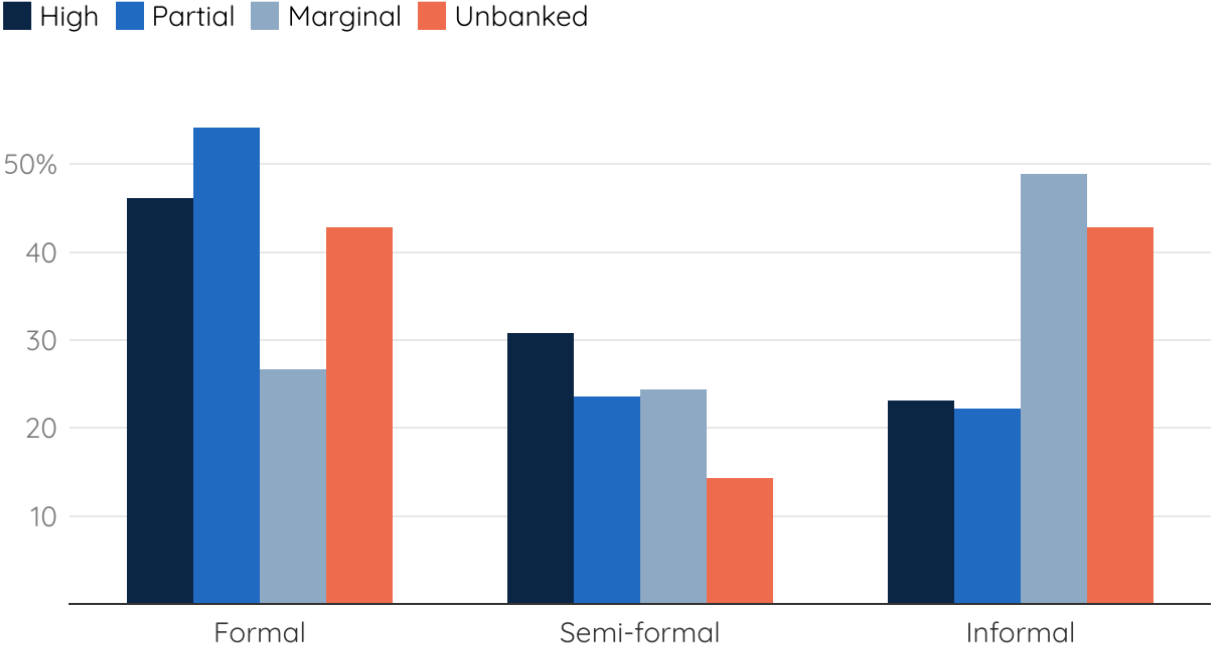


While requirements to register a business bank account vary across banks based on our review of bank websites, the most common requirements were a Corporate Affairs Commission Registration and a tax registration. Only 44% of the firms have a tax registration but 75% of firms have Corporate Affairs Commission registration.

Looking at formalization, we find that, while firms with a CAC registration are much more likely to be banked, having a CAC registration does not perfectly predict financial system integration, as partially integrated firms are more likely to have a registration than highly integrated firms. Similarly, we did not find a close correlation between level of integration with the firms’ own perceptions of their formality.

Figure 2.10 shows no clear correlation between level of banking integration and the firms' own perceived level of formality.

**FIGURE 2.10: BANKING INTEGRATION LEVEL AND FORMALITY SELF-PERCEPTION**



### 3. Exploring DFS Adoption and Usage

#### SUMMARY

The innovation of mobile money and its rapid adoption by low-income households in Bangladesh and Kenya created a wave of enthusiasm that digital financial services could be the pathway to financial inclusion—and significant benefits—for formerly financially excluded populations around the world. Over the last decade, while mobile money has spread to more than 50 countries, it's become clear that East Africa and South Asia are outliers rather than templates for the rest of the world.

That is in part because many different types of service providers quickly recognized the potential uncovered by mobile money's rapid growth in a few countries. The term digital financial services, or DFS, was coined to recognize that there were many ways and many potential providers of services that could compete with or replace physical cash that were unlike the specific providers and mechanisms in Kenya and Bangladesh. Here and in other Small Firm Diaries reports we use the term “mobile money” or “mobile wallet” *only* for payment accounts accessed through a mobile phone.<sup>6</sup> We use digital financial services as an umbrella term that includes banking and payments services delivered through the internet (which may be accessed via a smartphone or a PC), banking apps accessed via a mobile phone, and what might be called “traditional” alternatives to cash like credit cards and debit cards that allow non-cash payments (as opposed to being used for withdrawing physical cash from an ATM). However, the distinctions between the terms, which are often used interchangeably, make conducting research difficult as users don't always make clear cut distinctions between types of services, mechanisms/modes of delivery, or service provider. A further complication is that some of our questions about technology and DFS use may have been interpreted by firms to include any use, not just use for business purposes. As a result, while we offer our own categorizations and statistics, throughout this section we try to be clear about the exact questions we asked in case others would interpret the responses differently.

Digital financial services continue to offer significant possibilities for bringing households and firms into, or further into, the formal financial system. DFS also potentially enables business models for delivering financial services to customers who have been viewed as too expensive or unprofitable to serve by financial services providers. Thus, a key area of investigation for the Small Firm Diaries was the extent to which the small firms used DFS, the reasons they did or didn't use DFS, and the factors that might induce them to use DFS more.

In summary, we find that the small firms in the study were generally proficient users of technology and had high reported usage of digital financial services.

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<sup>6</sup> The IMF defines mobile money as “a pay-as-you-go digital medium of exchange and store of value using mobile money accounts, facilitated by a network of mobile money agents.” (IMF Financial Access Survey)

## HOW DO FIRMS USE TECHNOLOGY FOR BUSINESS?

Smartphones are important tools for the majority of businesses in our Nigerian sample. Over 70% of our firms use a smartphone for their business. A higher percentage of men use a smartphone for business than women—80% vs. 61%. Unbanked and marginally integrated firms have lower smartphone adoption rates than highly and partially banked firms (64% vs. 80%).

Of the 74% of firms that use a smartphone for business, payments are the most common use, followed by banking and marketing (see Figure 3.1). Use of technology varies along with level of banking integration. 74% of highly integrated firms and 83% of partially integrated firms report using a smartphone/computer for business purposes, compared to 64% of unbanked firms (though below we’ll also look at a few unbanked firms that use mobile money extensively). Of the highly integrated firms using technology, all use a smartphone for payments and/or banking.

**FIGURE 3.1: BUSINESS USES FOR SMARTPHONES**

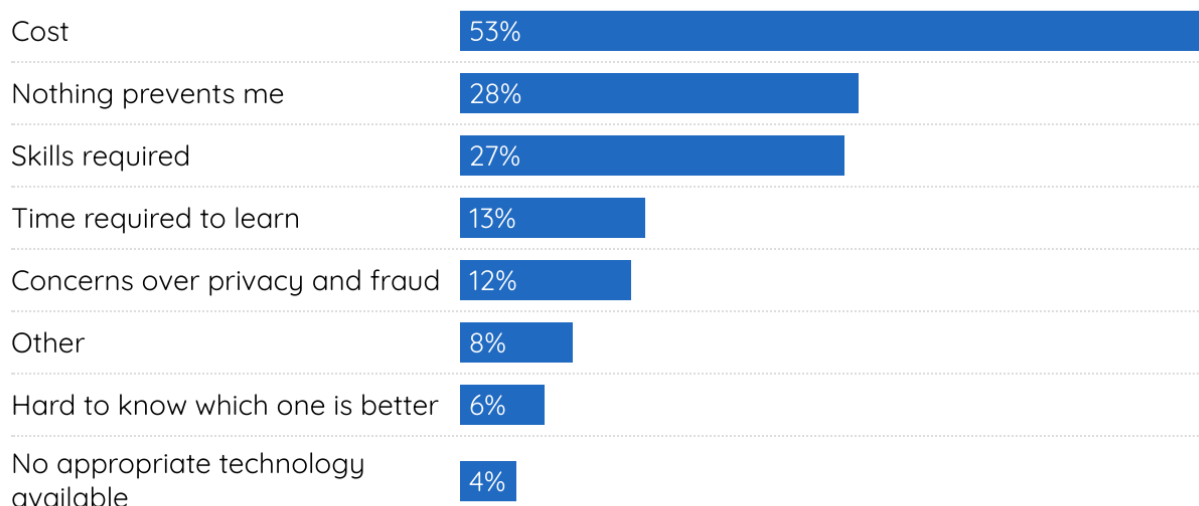
Among firms that use smartphones



In a separate survey on attitudes towards and adoption of technology, we asked firms what prevents them from using technology broadly (Figure 3.2). Over half of firms reported cost as a barrier to using technology, while only a quarter reported a skills barrier. Interestingly, given Nigeria’s global reputation as a source of financial scams, only 12% of firms reported concerns over privacy and fraud.

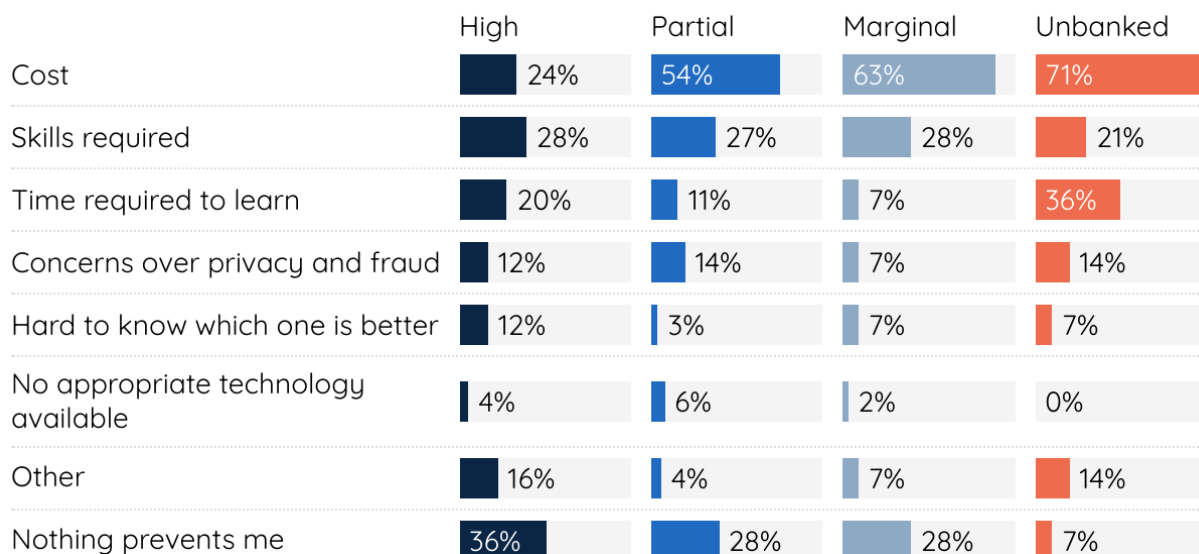
### FIGURE 3.2: BARRIERS TO TECHNOLOGY ADOPTION

What prevents you from using technology?



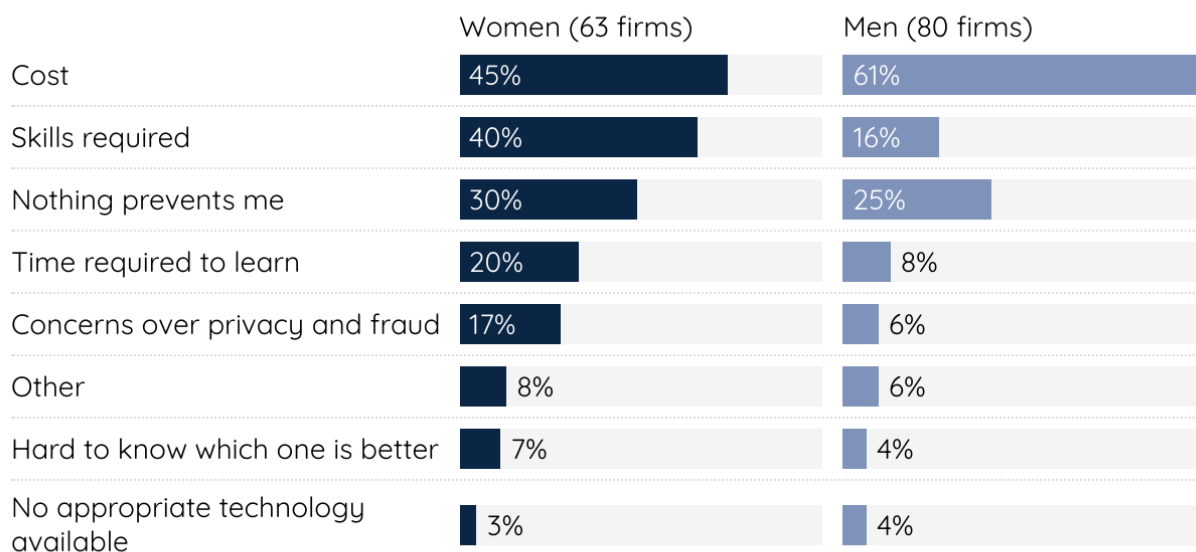
Cost was the most prevalent barrier across levels of banking integration. Unbanked firms are much more likely to report time required to learn how to use and set up smartphones as a barrier than other firms. Finally, banked firms were much more likely than unbanked firms to state that nothing prevents them from adopting the technology (Figure 3.3).

### FIGURE 3.3: BARRIERS TO TECHNOLOGY ADOPTION BY LEVEL OF BANKING INTEGRATION



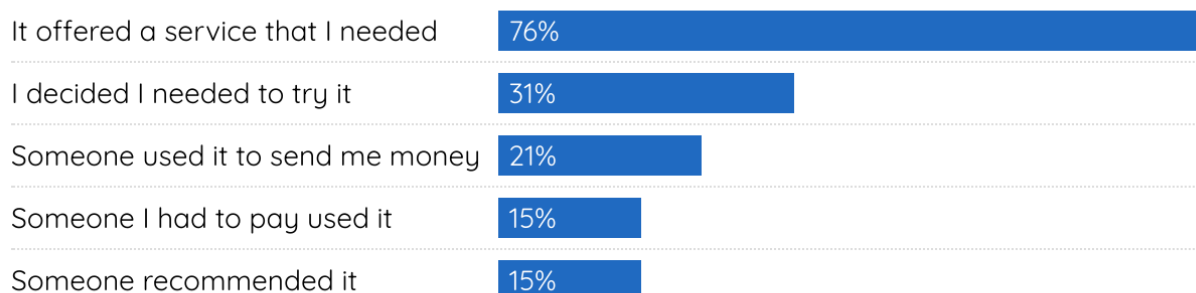
As shown in Figure 3.4, women were also more likely than men to report skills and time required to learn as barriers to adoption (40% of women as opposed to 15% of men). While men were more likely to report cost as a barrier.

**FIGURE 3.4: BARRIERS TO TECHNOLOGY ADOPTION BY FIRM OWNER GENDER**



We also asked the firms that used a smartphone for business purposes why they had begun using the tool. The survey allowed firms to report multiple reasons for uptake, which some chose to do. However, the most common reason by far was that smartphones offered a service that the respondent needed to continue conducting business. The next most common response was that they decided they needed to try it, which might suggest that the sheer popularity of smartphone usage begets itself by making it more difficult to operate without one.

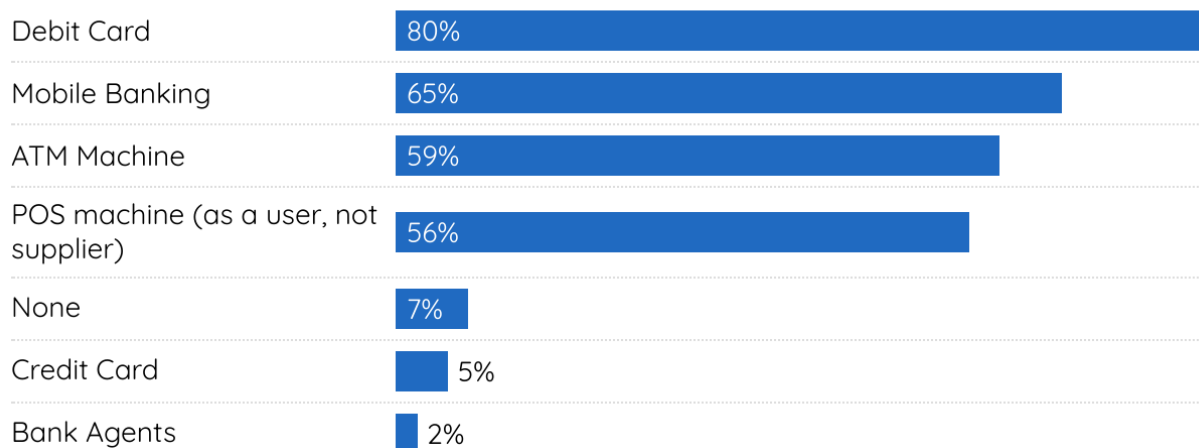
**FIGURE 3.5: REASON FOR UPTAKE OF SMARTPHONE**



In addition to questions about general technology usage, we ask all firms about what forms of digital financial services they use—not just for business, and regardless of whether they report using a smartphone for business. There is a wide disparity between tools: Point-of-sale (POS) terminals and credit cards, staples of the move away from cash in high-income countries, are much less in use than mobile banking and debit cards (Figure 3.6). Notably, the use of mobile banking is exponentially higher than bank agents, but debit card usage still outweighs mobile banking.

### FIGURE 3.6: USE OF DIGITAL FINANCIAL SERVICES

Percentage of firm owners reporting experience with specific DFS, whether for personal or business use

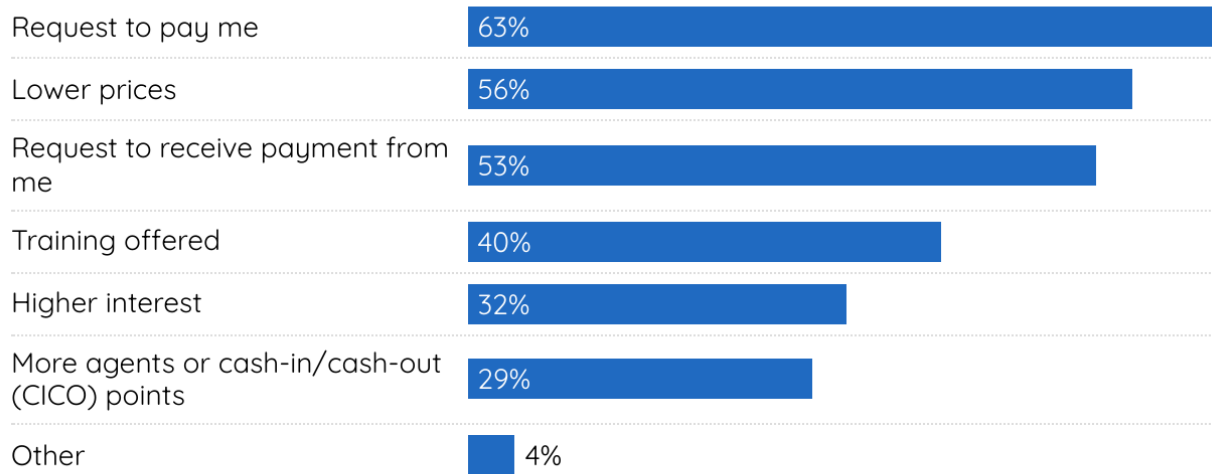


We also ask users of DFS, as reported in the question above, what challenges they've experienced. Over half of our sample of DFS users reported experiencing issues with the services. The most common issue, reported by 60% of firms, was money arriving late, followed by loss of access (30%) and missing money (30%). Challenges reported were similar regardless of banking integration level.

Challenges aside, the firms in our study saw advantages in using digital financial tools, among them greater security, more convenience, access to advertising channels, and better record keeping. A partner-owned carpentry firm in Enugu receives customers at their store front for same-day purchases and also accepts larger orders which they produce in a workshop and deliver by truck. They said that they preferred mobile phone payments from in-person customers because it makes the transaction smoother and for bulk order customers because it allows them to do business over the phone without having to meet in person multiple times. They also pay suppliers through mobile money which allows them to source materials from a wider range of suppliers since they do not have to physically go to the location to pay cash or to a bank to make a transfer.

In a set of questions on attitudes towards and adoption of technology, we asked firm owners what changes to digital payments services, specifically, would increase their use (Figure 3.7). A request to receive a payment was the most common reason; over half of firms reported that lower prices would increase their use. Answers did not vary significantly by level of banking integration.

**FIGURE 3.7: REASONS TO USE DIGITAL PAYMENTS MORE**





## 4. Credit Access

### SUMMARY

When thinking about helping small businesses thrive, policymakers—taking a cue from the message of the microcredit revolution—have generally focused on access to credit as a key intervention. After 40 years, however, the results of increasing credit access to microenterprises has been decidedly mixed. On the one hand, it’s clear that there is demand for credit, that microenterprises can be good credit risks, and that there is a business model for providing microcredit at scale in developing countries with minimal subsidy.<sup>7</sup> On the other hand, the promise of microcredit as a stepping stone to growth has proven false. The majority of borrowers do not grow their microenterprises, and few if any borrowers seem to “graduate” to larger loans at more commercial banks (though it’s important to note that this is in part because of opposing pressures on MFIs—the borrowers capable of graduation are the borrowers that are most profitable for the MFIs and key to their sustainability).<sup>8</sup> In the Small Firm Diaries we were eager to understand the credit access, needs and behaviors of small firms. Were these firms “graduates” of microfinance programs? Did they have access to credit at all? If so, where was the credit coming from? How big of a barrier was credit access to their growth and aspirations? The answers to these questions turned out to be surprising, especially given what we saw in terms of the number of firms that were partially or highly integrated into the banking system.

In our sample, we see little relationship between the level of banking system integration and credit usage. Firms that are only marginally integrated borrow from banks at similar rates to those that are more integrated. Still, credit usage for the business is relatively low: only 46% of our sample in Nigeria had at least one active loan for their firm during the study period. While men and women use credit at similar rates, we found differences in credit usages across industry and revenue level: a smaller percent of agri-processing firms use credit than other industries, and firms with higher revenues are more likely to have used credit. Suppliers, friends, and family are the most common loan sources, only 9% of firms that used credit borrowed from a commercial bank.

Firms say they want or use credit to make investments or expand stock, and cite cost as the most important barrier. Very few firms across both genders report needing loans constantly or often. At the same time, the firms are an important *source* of credit: roughly a two-thirds of firms (and 93% of firms that engage in any form of supply chain finance) *give customers credit*.

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<sup>7</sup> It’s important to note two caveats: subsidy is still prevalent in microfinance, though often hidden by being delivered via below-market-rate capital to MFIs, especially for MFIs that serve the most excluded populations; much larger subsidies are necessary as countries become wealthier as the “soft” costs of serving marginalized customers rise much faster than profit margins. See Cull and Morduch 2018 and Klein and Ogden 2023 (forthcoming) respectively.

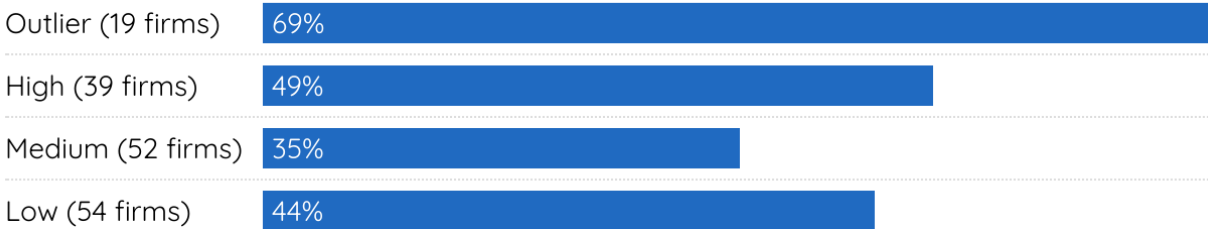
<sup>8</sup> See Banerjee, Karlan and Zinman 2015, Meager 2019, Rigol and Roth 2021

But perhaps the most important finding from the Small Firm Diaries in terms of credit access is that working capital, or liquidity management credit is the most pressing need for many firms. So while we see firms saying they want credit to invest, we most commonly see them making large purchases<sup>9</sup> in raw materials, which we consider a liquidity need as opposed to an investment in increased productivity, such as more sophisticated equipment. We also see firms note that access to finance is a barrier to their success; but we see many of these firms also say they rarely or never need loans. We interpret this mismatch generally as a statement about the need for tools specifically designed to manage liquidity rather than a need for the types and cost of loan products currently available in the market.

**CREDIT ACCESS AND SOURCES**

Half (46%) of our firms reported holding a loan of any kind during the study (including loans that were active at the start of the study and new loans taken during the study).<sup>10</sup> A similar proportion of our women and men firm owners took loans (45% vs 47% respectively). However, women business owners, on the median, took lower value loans than men—NGN 57,000 compared to NGN 93,000. There were some differences across industries: agri-processing firms were most likely to take a loan (56%), compared to 49% for light manufacturing firms, and 37% of services firms. Agri-processing firms took higher value loans (NGN 340,000 at the median) than services or light manufacturing firms (NGN 100,000 and NGN 30,000 respectively). As shown in Figure 4.1, firms with higher revenues were more likely to have taken loans during the study (see the *Nigeria Country Data Overview* published at [www.smallfirmdiaries.org/nigeria](http://www.smallfirmdiaries.org/nigeria) for a description of these revenue categories). This relationship might suggest that loans are more likely to be granted to firms with proven track records of business success or that higher revenue firms feel more confident of having capital on hand to pay back loans.

**FIGURE 4.1: FIRMS WITH A LOAN BY REVENUE CATEGORY**



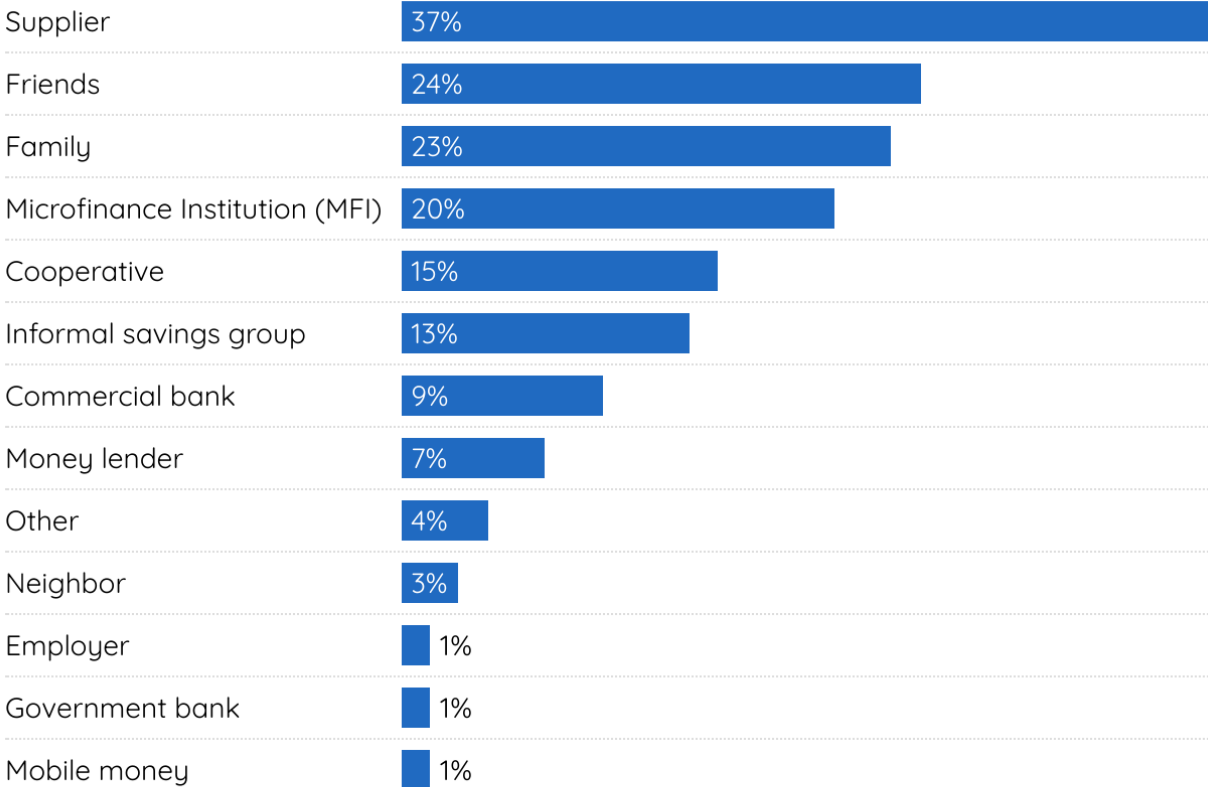
<sup>9</sup> We define large purchases as single expenses of an amount larger than three times the standard deviation above the mean of single expenses for the given firm.

<sup>10</sup> For comparison purposes, Global Findex 2021 finds that 7% of Nigerians over age 15 have borrowed from a formal financial institution or mobile money provider, while 54% have borrowed from any source.

Suppliers, friends, and family are the most common loan sources in Nigeria (see Figure 4.2). Many firms (40%) rely on more than one source of credit. For example, 72% of firms with a loan from an MFI also have a loan from an informal source.

**FIGURE 4.2: BUSINESS LOAN SOURCES**

Of the subset of firms that report having a loan (46%), percent of firms reporting loans from each source type



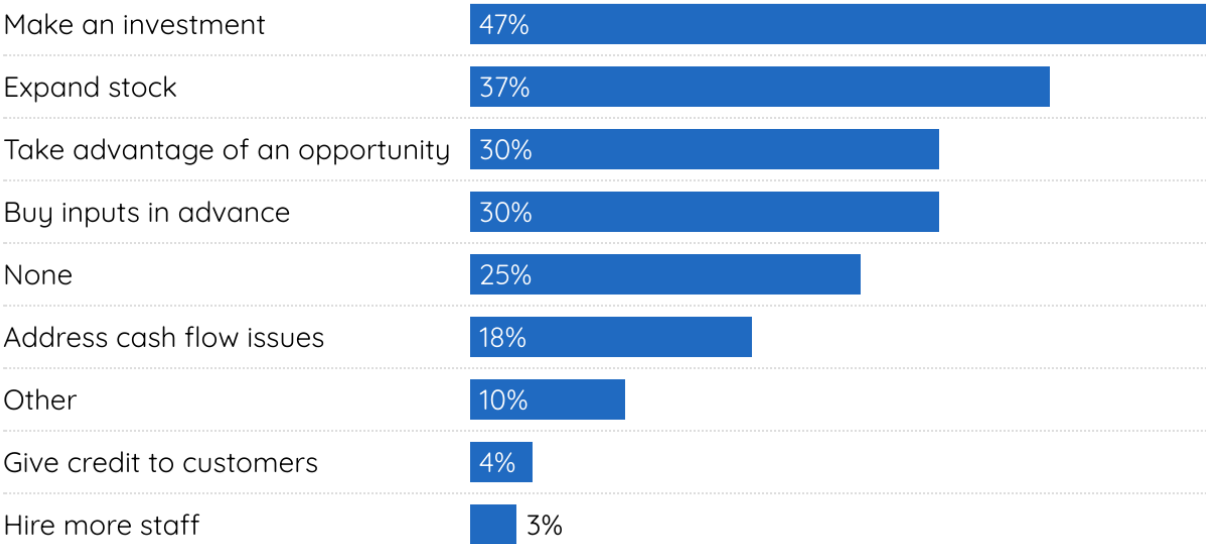
**CREDIT USE**

During the study, we asked firm owners what they use or would want to use a loan for, with a variety of options. The answer choices were not mutually exclusive: firm owners could choose multiple responses. The most popular response, as shown in Figure 4.3, was “make an investment,” followed by “expand stock.”

Because “make an investment” was the most common choice, and yet we observed in interviews that many firms were hesitant to make large purchases we might traditionally think of as business investments, like equipment or machinery, we wanted to better understand what firm owners intended in this answer choice. To do this we looked first at the assets purchases reported by small firm owners (27% of firms reported buying new assets during the study), and second, we looked through all recorded expenses to find the largest purchases and categorized those according to type. We found that reported asset purchases were indeed likely to be new machinery for their business

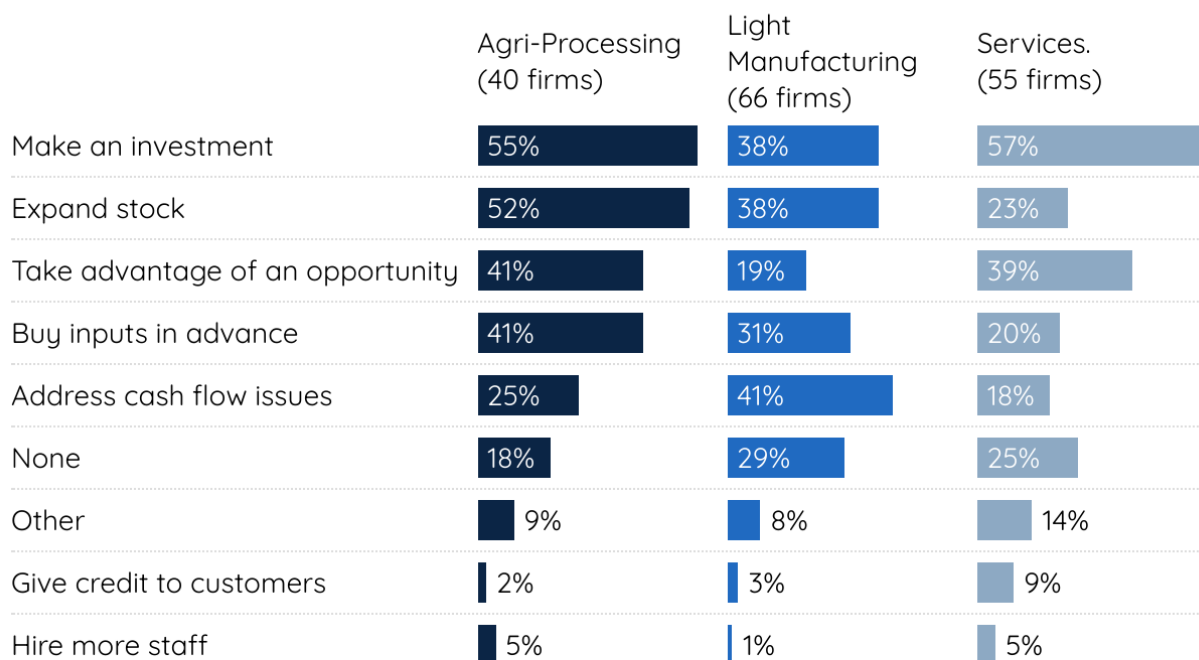
(60% of those firms that purchased new assets bought new machinery) or an electrical appliance (12%.) However, when we looked for large purchases (which we defined as single expenses larger than three times the standard deviation above the mean of single expenses for a given firm), we saw that the vast majority were for raw materials or inventory (61% of large purchases, made by 67% of all firms). For context, only 26% of firms that made large purchases reported these as purchases of an asset. This analysis of the data leads us to believe that some significant portion of the firms that say they want to use loans to “make an investment” in fact would want to use loans to buy raw materials or inventory. We interpret the answers to this question to show that firms in the Nigerian sample desire to use loans for day-to-day liquidity (or working capital), as well as for capital investments.

**FIGURE 4.3: DESIRED USES FOR LOANS**



Responses to this question did not differ much by sector. Both service sector and agri-processing firms’ top choice (and the second most popular option among light manufacturing firms) was to make an investment. Light manufacturing firms were half as likely as service-sector or agri-processing firms to want to take advantage of an opportunity. Finally, by far, the least popular option across all three sectors was to hire more workers. (Figure 4.4)

**FIGURE 4.4: DESIRED USES FOR LOANS BY INDUSTRY**



Moreover, when asked in a separate survey about desired future investments in general, firms followed a specific pattern, with 47% of firms reporting they want to invest in expanding stock, compared to 53% in a productive machine. When asked what was preventing them from making these future investments, a lack of capital was the predominant answer by far— reported by 84% of firms, compared to 7% or less for any other category (Figure 4.5). Of the 83 firms that reported wanting to invest in productive machines, 92% of them reported lack of capital as a barrier. However, of those 76 firms, only 40 reported constantly or even occasionally needing a loan.

**FIGURE 4.5: REPORTED BARRIERS TO FUTURE INVESTMENTS**

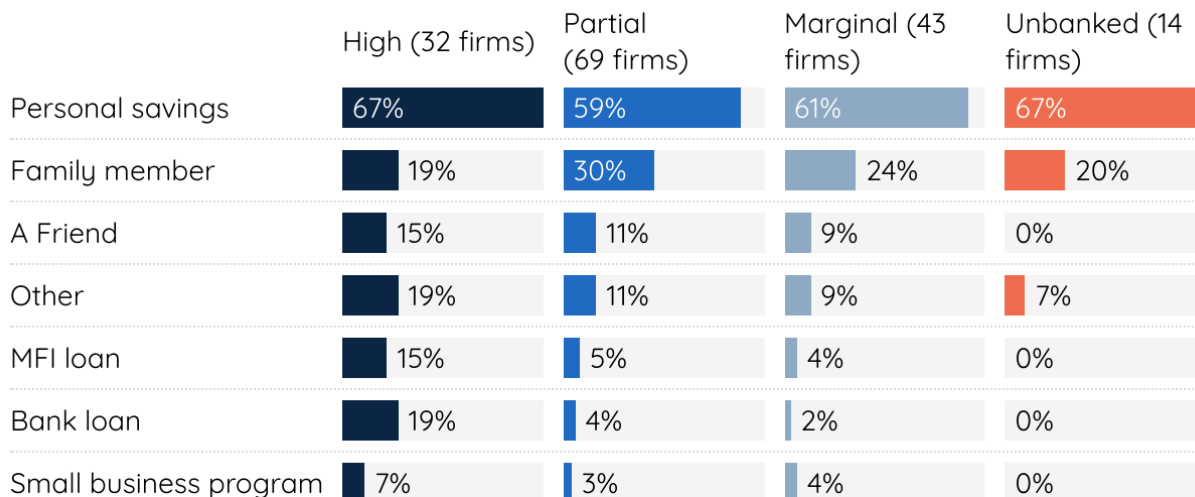


## START-UP CAPITAL

Just as the majority (54%) of firms did not report having a loan during the study, most firms also did not use any form of credit to start their businesses. In comparison, using data from India on microfinance borrowing, Banerjee et al calculate about one-third of borrowers are “gung ho

entrepreneurs” who grow their business with microcredit while the remaining two-thirds either do not grow or never start an enterprise. Regardless of level of financial integration, the majority of firm owners used their own savings for start-up capital—similar to rates seen among small business start-ups in the United States.<sup>11</sup>

**FIGURE 4.6: SOURCES OF START-UP CAPITAL BY LEVEL OF BANKING ACTIVITY**



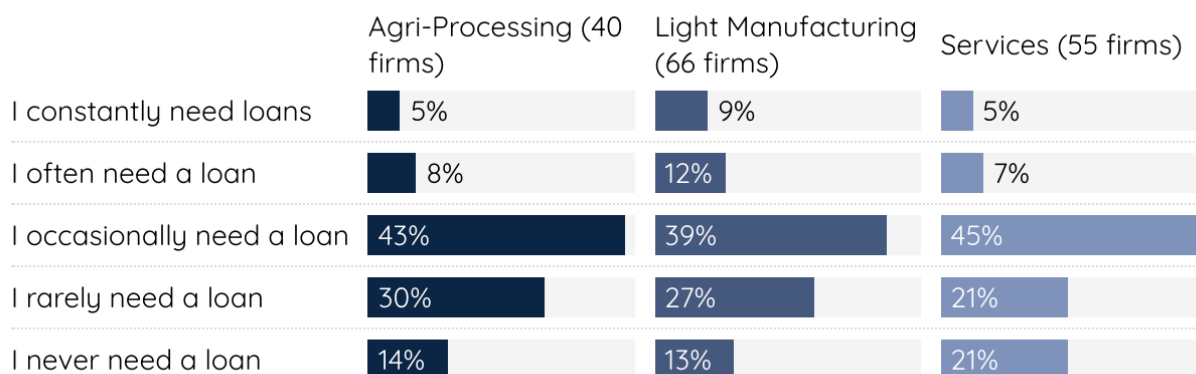
Moreover, taking a loan during the study does not predict whether a given firm was likely to have used loans for start-up capital: 60% of loan-takers during the study used personal savings to open their businesses.

### WHAT DRIVES CREDIT USAGE?

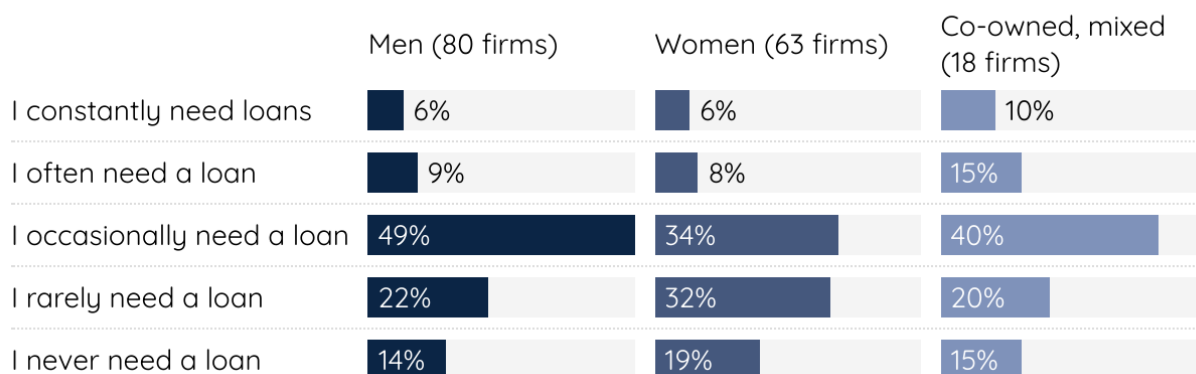
The majority of firms in the Nigerian sample report relatively low desire to actively use credit, with more than three-fourths responding that they occasionally, rarely, or never need for a loan. We don’t see large differences across industries or gender in appetite for loans (Figures 4.7 and 4.8).

<sup>11</sup> For a discussion of how the typical small firm in the US is financed, see Chapter 5 in Shane, Scott, *The Illusions of Entrepreneurship*.

**FIGURE 4.7: DESIRE FOR LOANS BY INDUSTRY**

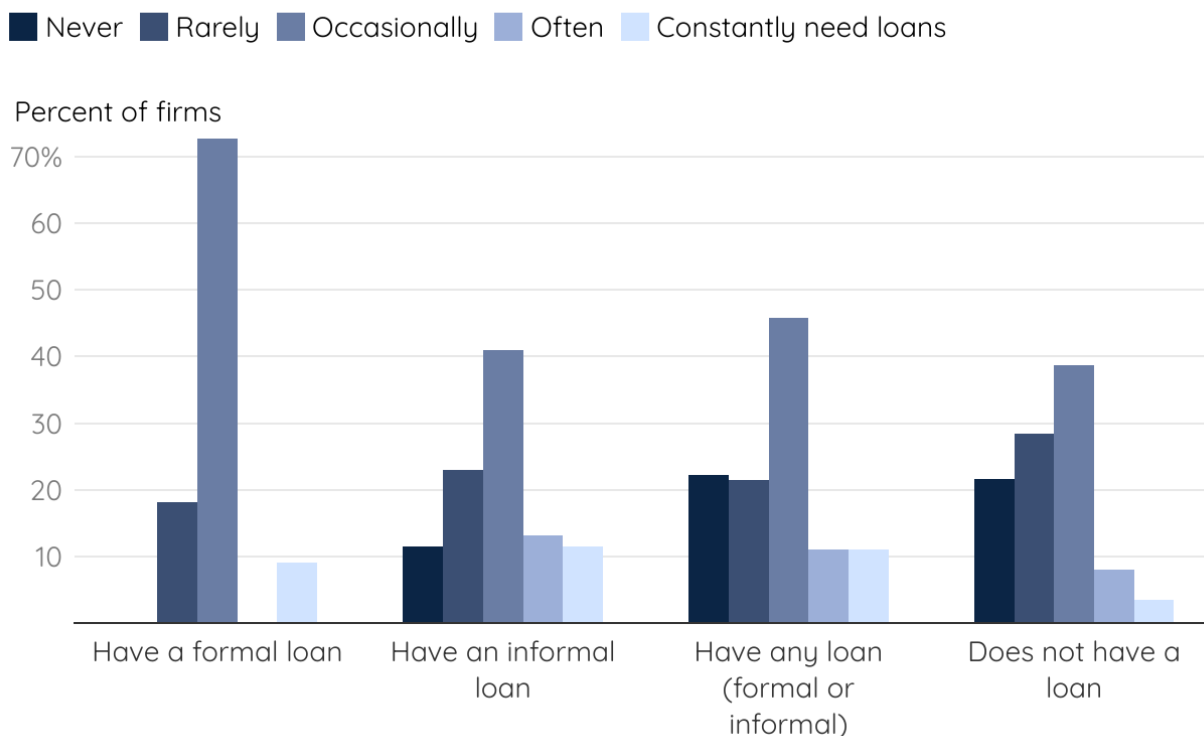


**FIGURE 4.8: DESIRE FOR LOANS BY OWNER GENDER**



There is, however, some mismatch between desire for credit and reported use of credit. For instance, about 10% of firms with a formal loan say they never need a loan (Figure 4.9). Meanwhile, of firms that do not report a current loan, 39% report occasionally needing a loan. It is very possible that this pattern is explained best by lenders making accurate judgments of the firms’ credit risk—the firms that constantly need loans are firms that are riskier and find it harder to be approved; while the firms that “never” need a loan, don’t need a loan because they can generally self-finance, which makes them more attractive customers for lenders. This interpretation is supported by the fact that there isn’t a correlation between “constantly needing” loans with firms that are growers; in other words, the firms that constantly need loans don’t need them to fund rapid growth (which would make them more attractive to lenders).

**FIGURE 4.9: REPORTED DESIRE FOR LOANS COMPARED TO ACTUAL LOANS TAKEN**

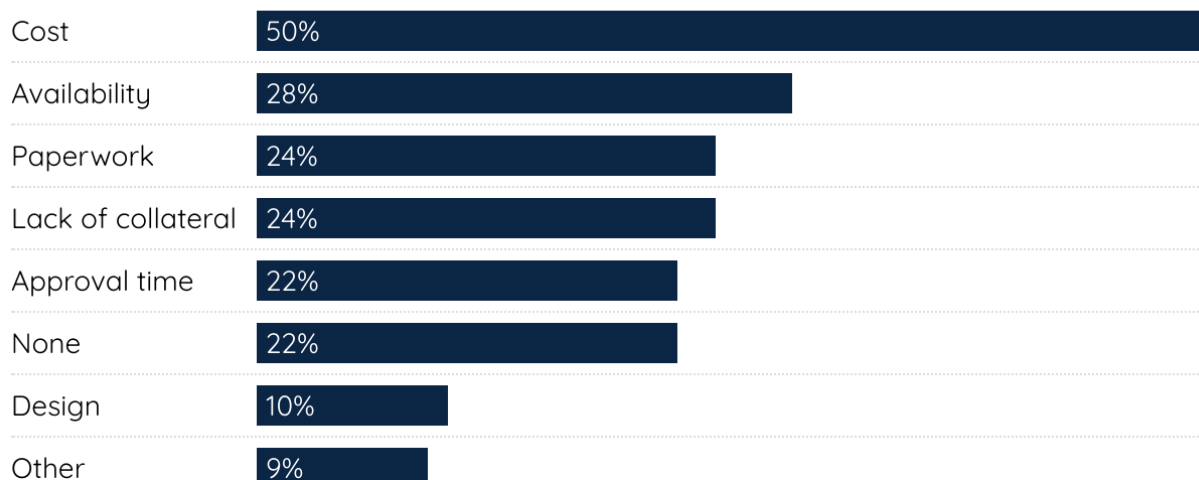


### WHAT ARE THE BARRIERS TO CREDIT ACCESS?

Firms most frequently cited cost as the reason they were unable to access the credit they wanted (see Figure 4.10). Notably, issues at the forefront of policy design, such as lack of collateral, availability, and design were reported half as often, or less (by 28%, 24%, and 10% of firms respectively). Regardless of loans taken, firm owner gender, or industry, cost was the main barrier cited, followed by availability.



**FIGURE 4.10: PERCEIVED BARRIERS TO ACCESSING CREDIT**



## **FIRMS DESCRIBE THEIR STRUGGLES WITH CREDIT**

In qualitative interviews, when asked about their experiences with loans, respondents most consistently mentioned concern about the cost of a loan and apprehension that if they did get a loan they might not be able to keep up with the payments—they might be digging themselves into a financial hole too deep to dig out of.

High interest rates and payback periods are primary reasons that some firm owners tend towards informal or cooperative loans when they are an option. In Kaduna we heard several examples of firms turning to community cooperatives; for example, a young woman who owns a greenhouse and landscaping business. She explained that she often needs to purchase inputs before she has made enough money to cover their cost. She found bank loans not flexible enough to meet her needs for short term loans so she turned to a local cooperative of people who she already knew well. She explained that the cooperative provides a crucial source of capital for her business quickly when she needs it. She said that knowing the other cooperative members well encourages her to maintain a good reputation; and she knows prompt repayment will ensure she has access to the loan again when she needs it.

In addition to looking at firms' perceptions of barriers to credit, we examined other firm characteristics—whether firms classify themselves as formal or informal, and level of banking integration—to see which firms were less likely to use credit.

Firms that regard themselves as formal are more likely to have loans: 49% of formal firms and 47% of semi-formal firms have a loan of any kind, compared to 33% of informal firms. However, self-perceived formality does not predict whether a firm is likely to seek out loans from formal or informal sources. For example, 11% of both formal and informal firms with loans have a loan from a commercial bank (just 4 and 2 firms respectively), while 25% of formal and 18% of informal firms with loans have borrowed from family. MFIs were the most common loan source for informal firms

(35% of informal firms with loans), while suppliers were the most common loan source for formal firms (39% of formal firms with loans). This suggests that formal firms that may have access to institutional sources of credit still rely on informal credit due to issues with credit product design, cost or other barriers noted above. Of note, follow-up work among small firms in Colombia after the study there had ended corroborates the credit product design hypothesis: firms report using formal credit for asset purchases while relying on informal credit for liquidity and working capital.

We also found that, while a higher percentage of banked firms have loans than unbanked firms. Credit usage does not increase with level of banking integration—44% of marginally integrated firms have loans compared to 39% of highly integrated firms. They also use “formal” credit tools at similar rates: 7% of both highly integrated and marginally integrated firms have a loan from a commercial bank.

## SUPPLY CHAIN FINANCE

Given what we see of firms’ interest in using credit for working capital and liquidity management, understanding the opaque domain of supply chain finance for small firms is particularly interesting. Supply chain finance is highly evolved in many high-income countries, with formal contracts, secondary markets for receivables, and more recently an explosion of “buy now, pay later” services for both consumers and small businesses. Where firms and contracts are less formal, supply chain finance is even more informal and hard to see. We attempt to get a complete picture of supply chain finance as it illuminates the tools, challenges and opportunities around working capital and liquidity management for small firms. We define supply chain finance broadly, including both financial flows and tacit or in-kind transfers (in other words, the lack of a financial flow) regardless of whether they are between firm and supplier, or firm and customer. Using this general definition, we find that about 65% of our firms use supply chain finance.

Looking deeper than the general category of supply chain finance, we can separate out the use into two categories: giving credit and receiving credit. Based on the struggles with liquidity that firms face it is at first glance surprising that the firms give credit—transferring liquidity to customers—more than they receive it (Figure 4.11). However we surmise that the firms are serving low-income customers who may have even greater liquidity challenges than they do.<sup>12</sup> Thus, while these firms are liquidity constrained they are providing a lot of liquidity to their customers and play a very large role in the financial lives of low-income households and neighborhoods. Overall use of supply chain finance is fairly similar across industries, but light manufacturing firms receive less credit than agri-processing or services.

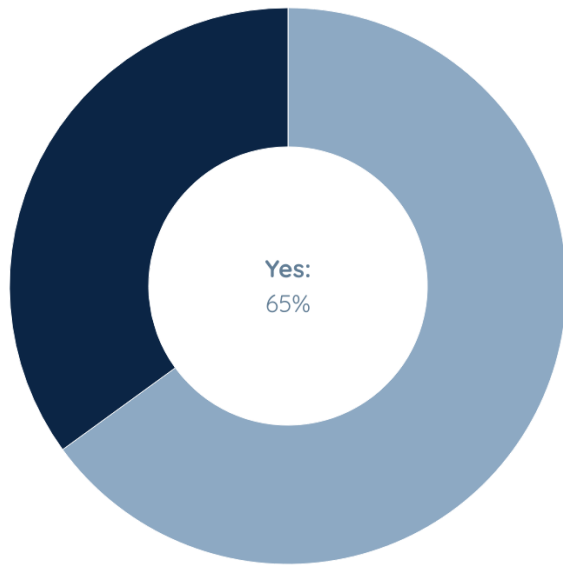
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<sup>12</sup> The extreme liquidity challenges and volatility that low-income households face are documented in the books *Portfolios of the Poor* and *The Financial Diaries*.

**FIGURE 4.11: USE OF SUPPLY CHAIN FINANCE**

Does your firm use supply chain finance?

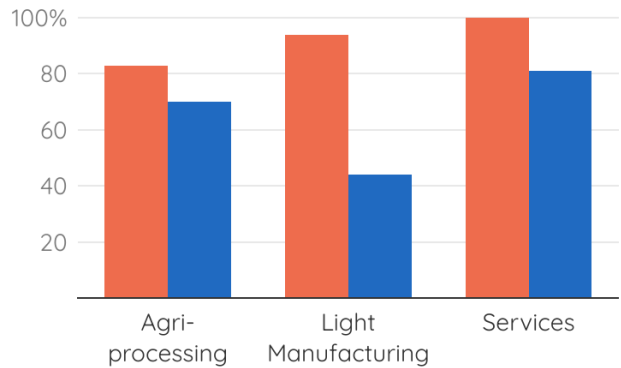
■ Yes ■ No



**TYPE OF SUPPLY CHAIN FINANCE USED, BY INDUSTRY**

What type of supply chain finance do you use?\*

■ Giving credit ■ Getting credit

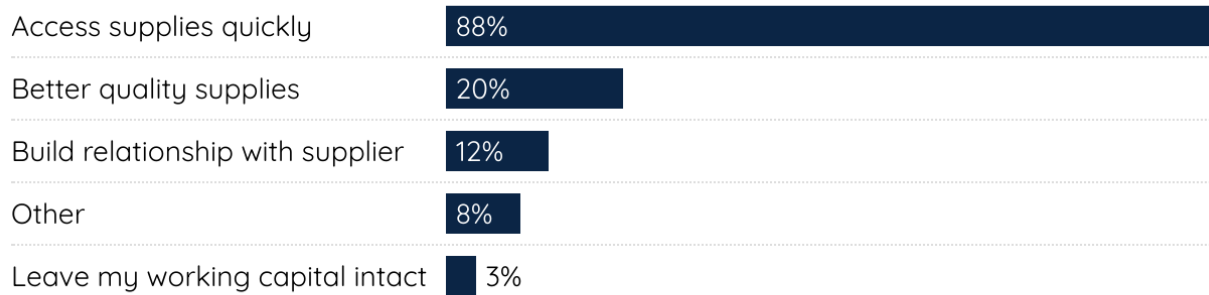


\*Asked of firms that use supply chain finance

When we look into the receiving credit side of the equation, we see that 62% of all firms report getting credit from suppliers. Of note, this is more than the number of firms who had reported suppliers as a loan source (per Figure 4.2, only 37% of all firms with loans, or 17% of the total sample). This may be due to the fact that firm owners don't always regard taking in-kind credit (that is, receiving stock from a supplier and delaying payment to the supplier until some or all of that stock has been sold) as a loan per se, but the size of this discrepancy suggests that the practice is quite common among our sample. We also find that supply chain finance is complementary to bank and MFI credit (which also supports the idea that existing bank credit products are not a good match for working capital needs). As the factors that make a firm creditworthy are similar regardless of whether a bank is lending cash, or a supplier is allowing a firm to pay 60 days after delivery, some of the overlap in bank borrowing and supplier borrowing is probably a reflection of a firm's creditworthiness. Those who do receive credit from banks or suppliers are also in a better position to extend that liquidity to customers.

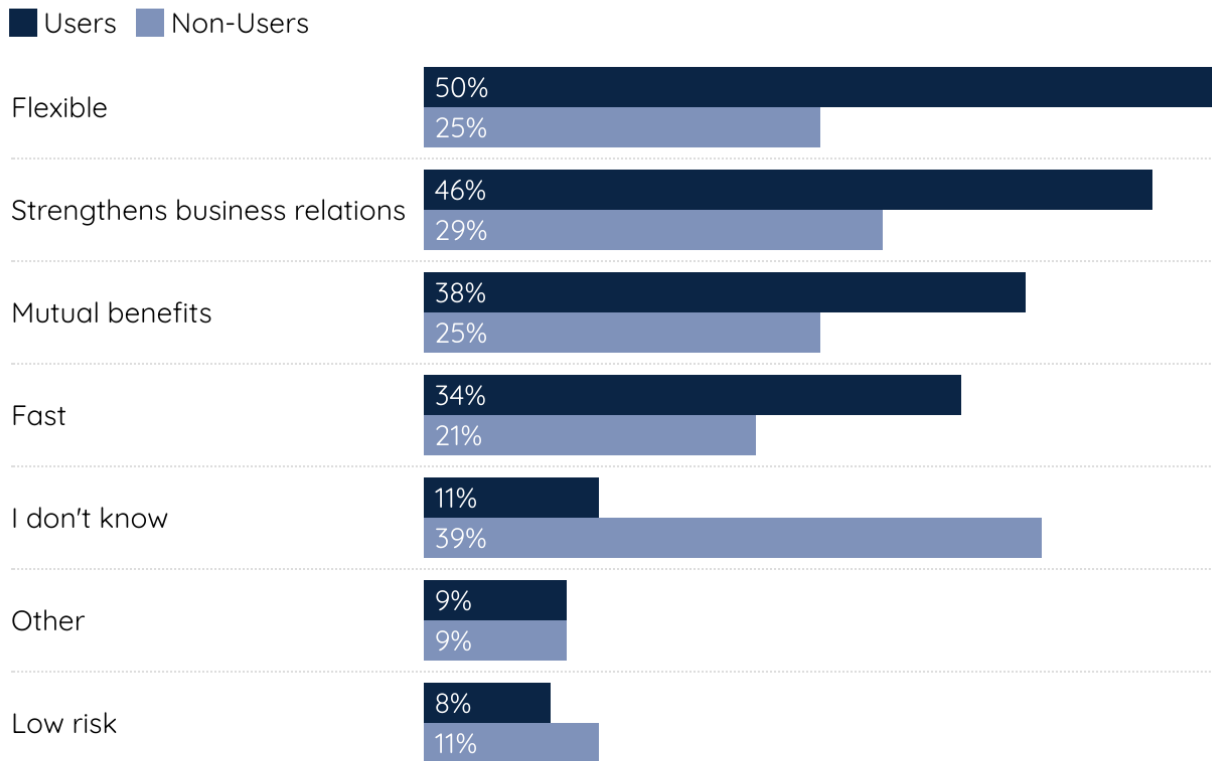
Why do firms seek credit from suppliers, other than the obvious benefit of not having to hand over cash? We ask the firms about their reasons for and perceptions of use of supplier credit. Figure 4.12 shows that the vast majority of firms view supplier credit primarily as a way to access supplies quickly.

## FIGURE 4.12: WHY DO YOU USE SUPPLY CHAIN CREDIT?

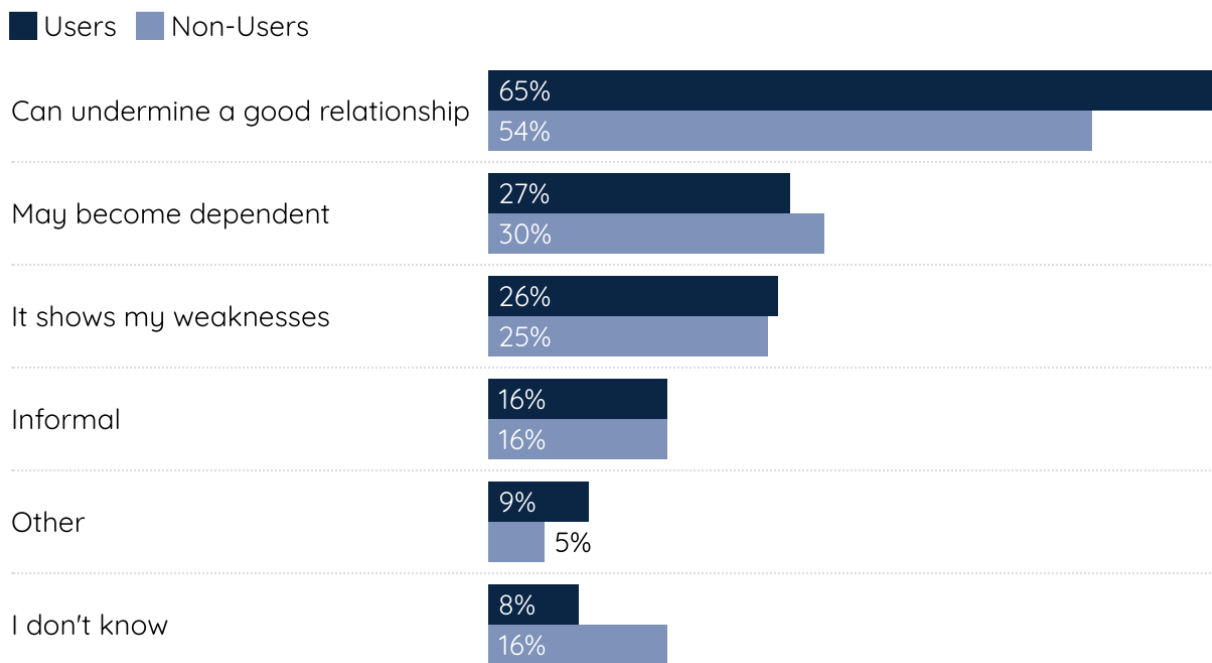


Users of supply chain finance see a variety of advantages compared to other sources of credit (see Figure 4.13). Users most commonly cite its flexibility and ability to strengthen business relationships, while non-users most frequently report being unaware of benefits, followed by its ability to strengthen business relationships. Of course there are risks as well as advantages (Figure 4.14). Non-users and users of supply chain finance alike believe that it poses a risk to their relationships with suppliers and customers or can create a dependency on one supplier or customer.

**FIGURE 4.13: ADVANTAGES OF SUPPLY CHAIN FINANCE**



**FIGURE 4.14: DRAWBACKS OF SUPPLY CHAIN FINANCE**



Overall, supply chain finance seems to be an underexploited opportunity for supporting small firms and their customers. Using the knowledge of suppliers can solve one of the major challenges of business lending—understanding credit risk in the context of limited and incomplete information. Providing liquidity to suppliers to enhance their provision of credit or gathering information from suppliers in order to underwrite working capital loans to the firms themselves would also likely trickle down to the firms’ customers by allowing the firms to offer more credit than they already do.

# Credits

The authors of this financial services brief are Michelle Kempis and Timothy Ogden.

The principal investigators for the Small Firm Diaries global project are Timothy Ogden and Jonathan Morduch.

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In Nigeria, the research team partnered with the Nigerian National Bureau of Statistics (NBS) and the Lagos Business School (LBS). These partners contributed to Nigeria-specific elements of the research design, supported the data collection process, and collaborated in creating research outputs.

In addition, NBS led Abuja-based stakeholder engagement, bringing together representatives from the Small & Medium Enterprises Development Agency of Nigeria (SMEDAN), the Federal Ministry of Industry Trade and Investment (FMITI), The Fate Foundation, the Tony Elumelu Foundation (TEF), the National Association of Small and Medium Enterprises (NASME), the Federal Ministry of Agriculture and Rural Development (FMARD), the Central Bank of Nigeria (CBN) - Financial Inclusion Secretariat, and others. LBS led Lagos-based stakeholder engagement, convening a group of business and industry leaders including Bank of Industry, Enugu SME Centre, Kaduna Market Development & Management Company Ltd, Lagos Chamber of Commerce & Industry, Lagos State Employment Trust Fund, Nigerian Economic Summit Group (NESG), PwC, Women in Management, Business and Public Service (WIMBIZ).

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## About the Study

The Small Firm Diaries is a global initiative to better understand small firms in low-income neighborhoods of developing countries.

Visit [smallfirmdiaries.org](http://smallfirmdiaries.org) for more information and additional publications.



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