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What Influences the Adoption of Digital Banking Tools in Fragile Settings?

A Case Study from Haiti

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Executive Summary

Digital tools such as mobile money can help improve access to financial services for underserved people and businesses. In turn, greater access to financial services such as remittances and credit can improve livelihood outcomes for poor and vulnerable communities. While there is promising evidence of the benefits of adopting digital tools for financial inclusion, most studies have focused on settings with sophisticated financial ecosystems and strong interoperability across players within them. However, the situation in vulnerable countries such as Haiti is more complex. With recurrent political and economic turmoil over the years, the country is fragile and susceptible to shocks. Furthermore, interoperability among the digital financial players in the country is nascent.

IDB Invest and the Busara Center for Behavioral Economics partnered to conduct a detailed investigation of the use of digital tools to receive and repay loans among the clients of a microfinance institution (MFI) in Haiti. Conducted using the MFI's customer base (individual and group clients) during a period of political turmoil, we aimed to delineate behavioral from structural issues influencing adoption of digital tools in order to devise strategies to address both sets of problems. By focusing on a particular MFI in Haiti, we provide lessons for MFIs in similar settings looking to adopt digital tools.

The study was implemented in three phases: a review of the evidence on the impact, barriers, and enablers of digital tool usage; a quantitative analysis of the Haitian MFI's administrative data; and a qualitative study with a subset of the MFI's customers. It concludes with a series of recommendations for MFIs to better integrate digital tools into their operations. While we initially planned to test different strategies to address the identified barriers on-the-ground, we were unable due to security concerns in Haiti and the imminent closure of the MFI's operations in the country.

Review of the Evidence: Impact, Enablers, and Barriers to the Adoption of Digital Financial Tools

Overall, the global evidence we reviewed—primarily from Africa and Latin America—shows that financial institutions can use digital tools to increase their outreach to underserved borrowers. However, more research needs to be conducted to understand the impact on welfare outcomes. Preliminary evidence suggests modest improvements in consumer resilience and subjective measures of well-being. For instance, a study in Kenya (Suri et al., 2021) found that receiving digital loans improved household resilience, making them less likely to forgo expenses when faced with negative shocks. Similarly, a study in Nigeria (Bjorkegren et al., 2021) found that digital loan offers increased people's subjective well-being after three months.

The evidence also highlights the potential pitfalls of digital credit. For example, a study in Mexico (Burlando et al., 2021) shows that granting a digital loan in 20 hours instead of 10 hours reduces the default rate by 20%, suggesting that the instant nature of digital credit might increase delinquency. Likewise, a systematic review of the effects of digital credit in developing contexts (Robinson et al., 2022) emphasizes the need for consumer protection

and education; most borrowers in one of the studies reviewed could not recall the basic terms of their loan. Finally, incorporating mobile banking can sometimes have counterproductive effects for MFIs. A study in Kenya (Kumar et al., 2010) found that MFIs that used M-PESA to facilitate loans to their group clients ended up putting the in-person social accountability dynamic of the group lending model at risk.

Various studies also suggest that digital financial tools can lead to better agency for women. They substantially reduce the need for travel, which may be more costly for women than men in settings where women's mobility is restricted or where women fear more for their safety. They may also increase women's control over money they receive since the funds can be kept in their own mobile money account. For example, a field experiment in Uganda (Riley, 2022) found that women who received their loans through mobile money reported higher business profits and capital compared to those whose loans were disbursed in cash. The impact was greatest for women who experienced pressure to share money with family members in the household at baseline. This suggests that mobile money helps women better control how loans are used. Randomized control trials in Niger (Aker et al., 2016) and India (Field et al., 2021) reach similar conclusions for government cash transfers and payments for a work program disbursed directly to women through mobile money, respectively.

As far as the factors enabling the adoption of digital financial tools, three stand out from the evidence. The first is simplicity of the digital tool, both in terms of hardware (i.e., being accessible through basic feature phones without internet access) and user-friendliness. Second, the use of banking agents (people who make in-person visits to customers) to promote mobile money usage has been helpful in different settings, especially when the geographic distribution of agents is carefully considered, and the introduction of agents is combined with other interventions to promote uptake. Third, structural factors such as weak conventional banking infrastructure and increased mobile phone use, as well as the prevalence of migration and remittances, can encourage adoption of digital tools.

Finally, the evidence underscores three main barriers that can hinder uptake of digital banking tools: weak links between mobile bank accounts and traditional accounts, low literacy rates, and transaction costs (e.g., withdrawal and transfer fees). In general, digital tools such as mobile money need to demonstrate improvement over money transfer alternatives to remain popular. For already banked clients, mobile money may open fewer doors than for those without a formal bank account (Jack and Suri, 2011).

Diagnostic: Digital Tool Uptake Among Clients of our Partner MFI in Haiti

Our partner for this study was a leading MFI in Haiti that provides financial services to underserved populations and small and medium-sized businesses. It offers two main loan products: individual loans and Village Banking loans (group loans largely cater to women). The bank uses MonCash, a digital wallet offered by Digicel Haiti, for credit disbursement and repayment, in addition to cash transactions and offers a network of MonCash agents at service points throughout the country.

We analyzed the bank's active and historical loan portfolio to understand the patterns around uptake and use of MonCash, in addition to its repayment transaction records from 2022 to explore how digital repayment affected loan performance. The quantitative analysis revealed some interesting findings, such as many customers who use MonCash for repayment once subsequently return to cash transactions, signaling potential usability issues with the tool that deter clients from using it. Similarly, high time variability in the proportion of customers choosing to receive their loan via MonCash indicates that utilization of digital tools may be dependent on the bank's effort in promoting this channel; lack of or ineffective communication can prevent uptake.

To complement the analysis of administrative data, we conducted interviews and focus groups with the MFI's clients in Cap Haitien and Carrefour from April to May 2023.

The qualitative analysis highlights several enabling factors that encouraged clients to use MonCash, including the convenience and speed of accessing their loan disbursements (or making repayments) at MonCash service points instead of bank branches, avoiding transportation costs and long travel or wait times. Respondents also felt safer using MonCash agents in their communities as it eliminated the need for long-distance travel with large amounts of cash. Customers also reported the importance of help from the loan officers in enabling their use of Moncash to repay loans.

As far as barriers, for customers aware they could receive their loan using MonCash, the main challenges reported are structural. For example, mobile network service failures, MonCash wallet limits, and insufficient funds at MonCash points. Other issues highlighted are behavioral, shaping how customers make decisions about whether to adopt and continue using MonCash. For example, misperceptions about withdrawal and transaction fees when using MonCash—which are covered by the MFI—led customers to opt for cash disbursements and repayments. This tendency is also related to low levels of trust in digital channels for making loan payments compared to in-person cash transactions. Similarly, customers often lacked awareness that they could repay loans using MonCash in the first place, reporting that loan officers instructed them to make repayments in-person. This signals a lack of customer agency in deciding how to repay their loans. All of these factors underscore the need for clear communication from the MFI to potential mobile money customers about transaction fees, repayment channels, and other benefits of digital tools.

Recommendations: Strategies to Overcome Barriers

To address the barriers that inhibit the adoption of digital tools in low-income and fragile settings, MFIs need to tackle recurrent structural and behavioral issues. We propose the following recommendations:

- **Manage agent availability and liquidity:** The strategic allocation and management of agents emerge as vital concerns for MFIs, influencing their effectiveness as channels for withdrawals and loan repayments. Innovative solutions can include enlisting individual loan clients, who tend to borrow larger

amounts, as agents and adopting geospatial mapping for optimized agent placement.

- **Education on transaction costs:** It is important to correct the misconception of fees associated with MonCash transactions and withdrawals. While clients view repayment fees as high, they often overlook that transportation costs can be higher. Additionally, unnoticed expenses like time and lost income from bank visits add up. Teaching customers about the cost-saving benefits of digital tools can improve decision-making. Loan officers, as primary intermediaries, are well-positioned to facilitate this crucial education. Additional resources (such as FAQs) in accessible languages that support effective communication of loan terms are also important to correct misconceptions.
- **Build client trust in digital tools:** Building and cultivating client trust is a central theme throughout the study. Clear and comprehensible loan agreements can help establish trust with clients. In addition, MFIs should consider incorporating features that mirror the trustworthiness of cash transactions in the digital realm; the issuance of receipts for digital tools is a quick win.

In summary, this study underscores the potential of digital tools in overcoming financial service challenges, particularly in vulnerable settings. To harness this potential, a comprehensive strategy encompassing agent management, trust-building measures, and customized implementation strategies is imperative. By addressing these multidimensional aspects, MFIs can effectively integrate digital tools into their operations, enhancing the accessibility of financial services and client satisfaction.

1. Introduction

Digital tools can play a crucial role in fostering an inclusive society by enabling access to financial services for underserved populations. Leveraging technology empowers individuals and communities to access services like credit to improve their livelihoods. Over the last decade, traditional banks and microfinance institutions (MFIs) in developing countries have attempted to reach underserved populations using a range of digital tools such as mobile money.¹ The evidence on the success of these attempts is mixed at best. Digital tools offer advantages for service providers including lower operating costs, new business models, and price competition. However, multiple factors constrain the uptake of such tools in developing countries. This study aims to understand these barriers to adoption, particularly in vulnerable settings, using a case study from an MFI in Haiti.

Following the largest earthquake to ever hit the country in 2010, the Bill and Melinda Gates Foundation, in partnership with the United States Agency for International Development (USAID), set up a mobile money initiative with the aim of improving access to digital financial services, leading to the creation of MonCash and Voila (now defunct). In 2014, the Haitian Central Bank developed a National Financial Inclusion Strategy, a policy framework to guide the improvement of financial inclusion outcomes.

Since then, there have been some improvements in financial inclusion outcomes in Haiti. For instance, 33% of people had a bank account in 2017, a nine-percentage point increase from 2011.² Yet this figure is still far from the 55% average in Latin America and the Caribbean as a whole. At the same time, mobile network subscription was estimated at 63% of the Haitian population in 2017.³ This gap presents a promising opportunity to harness the power of digital tools to expand access to financial services among Haitians.

This research aimed to identify the enablers and barriers influencing the use of digital tools for credit access among the MFI's customers and suggest potential strategies to address these barriers. The study was implemented in three phases: a review of the evidence on the impact, barriers, and enablers of digital tool usage; an analysis of the MFI's administrative data; and a qualitative study with a subset of the MFI's customers.

The remainder of this paper is organized as follows. Section 2 presents a review of the literature on the impact of digital banking tools, as well as the barriers and enablers influencing their use in accessing financial services. Section 3 provides contextual information on the MFI in Haiti. In Section 4 we describe the methodology employed for the quantitative and qualitative analysis. Sections 5 and 6 present findings from both analyses, respectively. In Section 7 we provide recommendations and Section 8 presents our concluding reflections.

¹ Digital tools are banking tools that enable people in underserved areas to access financial services. Mobile money is a classic example.

² World Bank Global Findex Database (2021). Data missing for Haiti in 2021.

³ International Telecommunication Union (ITU) World Telecommunication/ICT Indicators Database.

2. Literature Review

Digital banking tools refer to technologies and platforms that enable households and businesses to access and engage in financial services through digital means such as mobile phones. These tools leverage advancements in technology to facilitate financial transactions, such as payments, transfers, savings, investments, loans, and insurance, among others. Examples of digital financial tools include mobile money,⁴ mobile banking apps, online payment platforms, and digital wallets. The MFI in Haiti that we worked with used mobile money to provide its services (see Section 3 for a detailed description of its services).

2.1. Impact of Digital Banking Tools

Overall, the literature highlights that digital tools can be employed by financial institutions to increase their outreach to underserved borrowers. The growing evidence also outlines strategies to accompany the use of these tools to support the profit-maximizing objectives of lenders. More research needs to be conducted to ascertain the impact on welfare outcomes. Preliminary evidence suggests no significant positive or negative outcomes. At best, there are modest improvements in consumer resilience measures and subjective measures of well-being.

Two categories of studies were reviewed. The first looks at service providers offering loans exclusively through digital credit (i.e., fintech models). The second looks at MFIs using a *hybrid* model whereby both mobile money and cash are used to facilitate loans, which was the case of our partner MFI in Haiti.⁵ We find that more studies have evaluated the impact of digital credit while there is limited evidence on the hybrid model.

While there is not a uniform definition of what constitutes a “digital loan”, it is usually associated with a credit product where the client does not physically interact with the financial institution. Sometimes the loan is also delivered in a mobile money account (e.g., M-Shwari in Kenya⁶ and Kutchova in Malawi⁷) but not in all cases (e.g., Branch in Nigeria).

Suri et al. (2021) measure the impact of a digital loan in Kenya’s mobile money market which was granted based on a scoring rule. Comparing those who were just offered a loan to those who were marginally excluded, they find that access to the loan leads to an expansion of overall credit instead of replacing existing loans. They also find that the loans improve household resilience as they were 6.3 percentage points less likely to forgo expenses when faced with negative shocks.

Brailovskaya et al. (2021) explore digital loans offered by a mobile network operator in Malawi. Since loan approval followed a strict scoring rule, they use a regression

⁴ Mobile money refers to products allowing people to make payments using their mobile phones without having access to a traditional bank account.

⁵ In a hybrid model, disbursements and repayments are made using cash and mobile money.

⁶ [M-Shwari by Safaricom in Kenya deposits the credit amount in a user’s M-PESA account.](#)

⁷ [Kutchova by Airtel Malawi](#)

discontinuity analysis and compare similar groups along the credit scoring cutoff for those who were offered the loan versus those who were denied. They found no negative effect of being granted access to digital loans in measures of financial well-being; however they found large late payment rates. They also randomized the offer of financial education and found that while financial knowledge improved and loan repayment increased slightly, loan demand increased even more, leading to more defaults. This suggests that these loans do not appear to generate negative or positive impacts on borrowers and that combining them with financial education does not appear to improve financial well-being.

Bjorkegren et al. (2021) randomize digital loan offers through mobile phones in Nigeria. They find that loan offers increase subjective well-being after three months. Conditional on being offered the loan, the amount lent does not significantly affect the well-being of clients. Despite promising findings on subjective well-being, the authors rule out large short-term impacts on a range of other outcomes (income and expenditures, resilience, and women's economic empowerment).

Other studies have more directly evaluated the practice of digital loans. A few descriptive analyses have tried to characterize the product and its demand. Brailovskaya et al. (2021) argues that digital credit in Africa has expanded quickly. Typical loans are short-term, high-interest products offered via mobile money and where loan terms are often opaque to the consumer. Johnen et al. (2021) use a representative survey of Kenyan households and document that digital credit has expanded some households' borrowing possibilities since it is being taken up by people less likely to have access to conventional credit. However, they also document that 90% of all blacklistings in the Kenyan credit bureau are now due to digital credit. They claim that this is due to the higher default rates for that type of credit but also to the fact that digital credit lenders are more likely to blacklist a defaulting customer than traditional lenders. This suggests that digital credit can reach new customers and is in demand despite high interest rates but it also has a higher default rate.

One of the main advantages of digital loans, aside from the absence of a physical contact with the financial institution, is the speed at which loans can be granted. Digital loans are often disbursed within a day or two after approval using mobile money. Burlando et al. (2021) evaluate such a product in Mexico. They exploit the quasi-randomness in the time it takes from loan applications to disbursements. This allows the authors to use a regression discontinuity design and compare the applications that were verified just before a batch of loans are processed and those that were verified right after a batch was processed (X). They find that granting the loan in 20 hours instead of 10 hours reduces the default rate by 20%. This suggests that the instant nature of digital credit might increase delinquency. Consequently, some delays in the loan processing time may be beneficial. The study suggests that giving borrowers some *cooling off* time allows them to better spend their money in the world of digital credit, assuming that is what affects repayment. Slowing down the disbursement time may also be profit-maximizing for credit providers.

Moreover, in a systematic review of digital credit in developing contexts, Robinson et al. (2022) note that the initial evidence on the effects of digital credit emphasizes the need for consumer protection and education. For example, Brailovskaya et al. (2021) show that most borrowers could not recall basic information on the loan terms (e.g., interest rate, due date, and late fee charges).

Finally, it is important for mobile money to be embedded in the overall design of an MFI's product in a way that is not counterproductive. For instance, in a case study with MFIs, Kumar et al. (2010) provide anecdotal evidence of how mobile money could improve the operations of MFIs at the expense of their long-standing traditions. For instance, one interesting example comes from the early days of using M-PESA to facilitate loans for MFIs in Kenya. The MFIs note that while the use of M-PESA freed up time for the loan groups, who previously spent most of their time collecting repayments at meetings, they did not see any need for meetings. This development put the social accountability mechanism used by MFIs to ensure repayment at risk and the use of M-PESA was discontinued. Though not experimental, this finding provides an interesting insight on the counterproductive effects mobile banking could have. MFIs that intend to use mobile banking products should consider the unintended social dynamics that these new banking modalities introduce to existing group behavior.

2.2. Barriers and Enablers Influencing Adoption of Digital Banking Tools

As discussed above, credit accessed through digital banking tools can have positive effects on reaching underserved borrowers. However, multiple factors enable and constrain the adoption of these tools. We review the literature to discuss the evidence on the enablers and barriers.

Enablers of Digital Banking Tools

Simplicity of the digital tool

One of the pre-conditions necessary for the successful deployment of digital financial tools is simplicity. The behavioral science literature shows that to improve take-up of financial products it is important to make them simple to use (see Aker et al. 2016 and McConell 2012).

In developing contexts, one common application of achieving simplicity is the use of feature phones.⁸ These phones are characterized by simple features: press-button inputs, small non-touch displays, and lack of internet access. Many digital tools allow access through these phones, including M-PESA in Kenya; EcoCash in Zimbabwe; Tigo and M-PESA in Tanzania; bKash in Bangladesh; Wing in Cambodia; and EasyPaisa in Pakistan.

⁸ Feature phones, sometimes referred to as USSD phones, are a class of mobile phone that retains the features of earlier generations of mobile telephones, typically with press-button based inputs and a small non-touch display.

However, the simplicity of feature phones is not enough; building understanding among customers on how to navigate the financial product is important. For example, Lee et al. (2021) note how they teach rural households the basic functions and protocol of bKash, a mobile money platform in Bangladesh to encourage take-up:

"The intervention aimed to reduce the main barriers to adoption of mobile banking. Most important, mobile banking services in Bangladesh use Unstructured Supplementary Service Data (USSD) menus which allow mobile banking services to be used on any mobile device. The menus, however, are in English, creating a large hurdle for poorer villagers in Gaibandha with only basic levels of numeracy and literacy even in Bangla (Bengali). The intervention responded by teaching the basic steps and protocols of bKash use, together with providing participants with practical, hands-on experience sending transfers at least five times to establish a degree of comfort" (Lee et al, 2021).

The use of banking agents

Several studies have noted the importance of using agents to deploy digital tools for financial services. Jack and Suri (2011) emphasize the importance of having agents (people who make in-person visits to customers) who can promote mobile money usage. Geographical distribution of these agents is crucial as highlighted by Almazan et al. (2013), who argue against employing light-touch methods until a critical mass of customers has been reached and network externalities can be leveraged. This implies that careful consideration needs to be given to the allocation of agents for digital tools to be deployed more effectively. In addition, digital tools should complement the role of agents in delivering credit to customers instead of being stand-alone.

Wieser et al. (2019) conducted a randomized control trial (RCT) in Northern Uganda, assigning previously unserved localities to receive a mobile money agent in a given year while control localities did not. They find that being randomly assigned to receive an agent does not change the probability of sending and receiving peer-to-peer transfers on the platform. They also find suggestive evidence that agents reduce transportation costs. While it had positive effects on non-farm self-employment rates and food insecurity, no significant impacts on savings, agricultural outcomes, or poverty were observed.

However, other studies offer different conclusions. Aggarwal et al. (2020) conducted an RCT in Malawi, assisting entrepreneurs in opening mobile accounts, providing training, and encouraging savings, resulting in increased savings amounts. Batista and Vicente (2022) evaluated a bundled intervention involving the roll out of mobile money agents, community meetings demonstrating mobile money services, and incentive payments to open an account. The bundled intervention increased mobile money use. This suggests that rolling out mobile money agents is not sufficient to improve mobile money use: complementary interventions that promote mobile money are needed.

These studies only provide suggestive evidence of the importance of agents in transforming and scaling digital tools. Because these products are commercially available, it is impossible to experimentally introduce them in most areas. As Aron (2018) notes, this culminates in an empirical problem; the identification of causal relationships between the adoption of mobile money and most factors examined is difficult. This is attributed to measurement errors, selection bias, omitted variables, and omitted unobservables. All of which lead to endogeneity in empirical analysis.

Structural factors

The existing infrastructure is important to the successful deployment of digital tools for financial services. Aron (2018) in a review of the evidence of the economic impact of mobile money notes that conventional banking is mired by weak institutional infrastructure and unprofitable cost structures. This gap, combined with the increased ownership of mobile phones in developing countries, makes digital tools more promising to advance financial services for the underserved. For instance, between 2005 to 2021, the number of mobile phone subscriptions⁹ per 100 people increased by 61% (52 to 84 subscriptions) and 159% (42 to 109) in Sub-Saharan Africa and Latin America and the Caribbean, respectively.¹⁰ In Haiti, this figure was at 64 subscriptions per 100 people in 2021.

Another structural factor encouraging adoption is migration and remittances. A large component of inflows in developing countries comes from remittances. Families and friends support each other financially even when geographically distant. For instance, in Nigeria, Adikhari (2020) notes that remittances reached US\$25 billion—almost four times more than foreign direct investment and official development assistance combined in the same year. The value of remittances for Haiti in 2022 was US\$4 billion, 23% of the country's gross domestic product.¹¹ Lee et al. (2021) conducted an RCT in Bangladesh involving rural-to-urban migrants and found substantial uptake of mobile money, leading to significant benefits for family and friends in rural communities.

Barriers Preventing Adoption of Digital Banking Tools

As Jack and Suri (2011) explain, digital tools like mobile money need to demonstrate improvement over money transfer alternatives to remain popular. For already banked clients, mobile money may open fewer doors than for those without a formal bank account.

Weak links between mobile money and traditional bank accounts

One key barrier affecting the adoption of digital tools is the weak linkage between mobile accounts and traditional accounts. De Mel et al. (2022) studied the impact of enabling clients to deposit airtime in formal bank accounts in Sri Lanka, randomizing the linking of

⁹ Mobile subscriptions refer to active SIM cards and are not representative of the number of individual subscribers.

¹⁰ World Bank, ITU World Telecommunication, ICT Indicators Database.

¹¹ World Bank Open Data. Retrieved August 16, 2023 from:

<https://data.worldbank.org/indicator/BX.TRF.PWKR.CD.DT?locations=HT>

accounts and transaction fees. Their main outcomes are account opening, number of transactions (whether the account is used frequently), savings in the bank account, and overall savings. Although access led to more deposits in the partner bank and formal banks in general, it did not significantly impact overall savings. The study suggests that mobile money access alone may not substantially affect savings for the poorest households, with only a small proportion of clients making deposits and using the account frequently even with free deposits.

Low literacy rates

Another barrier to take-up is low literacy in developing countries. Oliveira et al. (2016) review the factors preventing take-up of financial products. Among others, difficulty in understanding financial products was an issue. Some authors (see Abebe et al, 2018 and Xu and Zia, 2012) reach this conclusion and suggest financial education interventions that are carefully designed, and context-based to bridge the financial inclusion gap.

Transaction costs

There is some suggestive evidence that the associated transaction costs of mobile money could deter adoption. For example, Kumar et al. (2010) note that some MFIs educate their customers on the cost of making cash repayments, informing them of the direct and opportunity costs involved in cash transactions. In a review of the impact of M-PESA, Mbiti and Weil (2016) find suggestive evidence that depositors consider withdrawal fees when sending money. They analyze deposit-transfer-withdraw transactions to observe the prevalence of fee aware deposits. They find suggestions of fee aware deposits (i.e., senders consider the transfer fees they will incur, and the withdrawal fees beneficiaries will pay). This provides an indication of consumer sensitivity to withdrawal costs.

2.3. Women and Accessing Credit Through Digital Channels

Considering the prevailing digital gender gaps in Latin America and the Caribbean (IDB, 2022), there is a particular concern regarding the outcomes for women in the digital credit and savings market. The literature suggests that products involving commitment may be more appealing to women (Ashraf et al., 2010). In the case of M-PESA in Kenya, the initial study by Jack and Suri (2016) discovered that the advantages of mobile money seemed to be more significant for female-headed households. The primary focus of their study was to determine whether the household was impoverished or not. Additionally, they examined various measures related to resilience, savings, labor market outcomes, and more.

Why would digital financial products be particularly helpful to women? They substantially reduce the need for travel, which may be more costly for women than men in settings where women's mobility is restricted or where women fear more for their safety while traveling. They may also increase women's control over money they receive since the funds can be kept in their own mobile money account. Aker et al. (2016) study the impact of having government transfers paid through mobile money in Niger through an RCT. They

found that households that receive payments through mobile money were better off: their diet diversity was 9% to 16% higher and children were able to consume one-third of a meal more than those who received transfers manually. They suggest that part of the impact comes from the time that women save by not having to go and collect the transfer in person, as well as from women gaining bargaining power within their household.

Field et al. (2021) suggest a similar conclusion after using an RCT to evaluate the impact of having the cash payment associated with a work program transferred directly into a woman's bank account instead of her husband's. They find a significant impact of having the deposit made on the probability of women working after the program ended. They even find that three years later, depositing women's earnings in their own bank accounts impacted the way they think about their own work and altered the community's gender norms regarding women's work.

Moreover, a few studies have examined the effectiveness of mobile money as a channel to disburse loans. In a field experiment in Uganda, Riley (2022) compares how the disbursement of a loan as cash versus disbursement into a mobile money account affects business outcomes. Women who received their loans through mobile money reported higher business profits and capital compared to those whose loans were disbursed via cash. The magnitude of impact was greatest for women who experienced pressure to share money with family members in the household at baseline. This suggests that mobile money helps women better control how loans are used. The study shows how important the design of a microfinance product is to improve business outcomes for women. Aker et al (2016) also reach similar conclusions for cash transfers disbursed through mobile money.

Finally, one must be careful in thinking that women can only benefit from digital credit and savings. A descriptive study by Annan (2019) of mobile money agents in Ghana estimates that 25% of mobile money transactions are performed at a higher cost than mandated by the mobile provider. Furthermore, the paper randomizes the customer-agent pairs and finds that women clients are more likely to overpay for their transactions. This is because women agents tend to overcharge female clients and male agents do the opposite. This suggests that if mobile money transactions are in the hands of agents who can charge over fees, women may be more at risk of such behavior than men.

Overall, the studies reviewed in this section suggest that digital tools could lead to better agency for women. However, there is no definite evidence that digital tools, like mobile money, support this outcome better than traditional MFIs. For instance, the launch of bKash in Bangladesh, surprisingly, did not affect the bank's microfinance deposits (Abed, 2018). The bank attributes this to women's demand for services that allow them to protect their savings from male members in their family, a common feature of savings with MFIs.

This section provided some lessons for the deployment of digital tools in low-income settings. First, the latent features that digital tools are lauded for (e.g., convenience) are not ubiquitous. Women may have different needs for financial services than men.

Furthermore, it emphasized the importance of taking women's needs into consideration when designing digital tools.

3. The Context

Our partner for this study is a leading MFI in Haiti that provides financial services to underserved populations. The bank aims to empower its clients by providing access to credit, savings, and other financial tools that promote financial inclusion and improve livelihoods.

Through its network of branches and agents, the bank reaches remote and marginalized communities, offering financial services (largely credit) to those with limited or no access to traditional banking services. It prioritizes serving vulnerable populations, including women, rural communities, and small business owners.

The primary objective of this MFI is to facilitate access to credit for productive purposes. The bank offers two distinct loan products to its customers: individual and Village Banking (VB) loans. Both loans cater to small and medium-sized enterprises across various sectors that require working capital for their operations. The loans differ in their design. While individual loans are given to individuals, VB loans cater to groups and are smaller in size, on average. These groups largely consist of women and may either already exist or be formed with the primary purpose of accessing these loans.

3.1 The Haitian MFI's Loan Products

Village Banking Loans

Village Banking loans are the predominant loans offered by the MFI. As of November 2022, 92% of the bank's borrowers were VB loan clients. These are groups of individuals, mostly women, with common business goals. Given that members of these groups are mostly low-income, the group structure serves as a way to drive member repayment. Moreover, these groups of clients are not required to provide endorsers to access the loans; the group members play that role.

The application process for VB loans follows a similar structure to that of individual loans, but with a few distinctions. As previously stated, VB loans are specifically extended to groups, primarily comprising women. These women typically belong to lower socio-economic backgrounds. They utilize these loans to address working capital requirements, enhance their financial resources, and recover from significant setbacks in their business operations. The women typically undertake the following steps to access these loans:

- **Awareness:** Credit officers visit the communities to share information about the loan. Referrals through interpersonal relationships are also a common source of awareness.
- **Group formation:** While some of the loan groups precede the loan application, others are formed after awareness of the loans; individuals coordinate with small

business owners in their communities to form groups to access this loan. The median member size is 12. Groups can add, lose, and exchange members. Groups can be female-only or mixed-gender.

- **Loan application:** Similar to the individual loan clients, the applicants fill out loan forms with the support of the loan officers. The loan officers advise the clients on how to manage their business finances.
- **Business assessment:** Each member's loan is assessed on an individual basis. The group votes to decide on the loan amount requested by each member.
- **Disbursement:** Following the decision, the clients sign the loan agreement, and the money is disbursed to them digitally or through cash.
- **Repayment:** Group loan clients make repayments after a fixed period of time determined by the bank through digital channels (MonCash - a digital wallet system by a leading telecommunication provider, Digicel) or in-person at a bank branch.

Individual Loans

The MFI's individual loans are provided solely for the purpose of working capital for small and medium enterprises. Since the bank primarily lends through VB loans, individual borrowers represent only 8% of its customers. However, individual loans are more than six times larger than group loans on average (approximately US\$800 vs. US\$120). Therefore, individual loans account for over 40% of the bank's portfolio. The customer base for these loans is also quite different. Men represent 30% of individual loan borrowers in the latest portfolio data available, compared to 11% of VB loan customers (male participation in groups is limited to one member).

To apply for an individual loan, clients mainly go through loan officers (agents) or virtual channels like WhatsApp, Facebook or the bank's website. Customers applying for an individual loan are also able to utilize the bank's dedicated Virtual Branch from anywhere in the country. Historically, about 7% of individual loans originate through this channel (see Table 1 below).

The process to access these loans typically includes the following steps:

- **Awareness:** Clients typically find out about the loan through loan officers visiting their community or word-of-mouth referrals from their relatives. In the case of those who learn about the loans through relatives, they visit the bank's office to gather more details about the loan terms and their eligibility.
- **Loan application:** With the support of the loan officers, the applicants fill out loan forms and provide the necessary information required to ascertain their eligibility. In the field, this is done using a Digital Field Automation (DFA) System. It enables the officers to send necessary information to access the applicant's eligibility and process loan requests effectively.
- **Business assessment:** The loan officers visit the applicant's business to verify the information provided and request an endorser (guarantor) before the loan is

processed. The bank’s underwriting team, responsible for assessing the risk, decides on the amount an applicant is eligible for.

- **Disbursement:** Following the decision, a loan agreement is shared and signed by the applicant and the loan is disbursed through cash or through a digital channel (MonCash).
- **Repayment:** Clients make repayments through cash at a bank branch or digitally through MonCash.

Table 1: Features of the Loan Products

Characteristic	Individual loan	Village Banking loans
Target group	Individuals (e.g., small business owners)	Groups (e.g., business savings groups)
Awareness raising ¹²	Loan officers ¹³	Loan officers
Verification	Requires two endorsers	Group endorses the loan amount
Disbursement and repayment channel	Cash and MonCash	Cash and MonCash
Average Loan Amount ¹⁴	US\$800	US\$120

¹² Main touchpoint used by the MFI to raise awareness about the loans.

¹³ Loan officers are the MFI’s agents. They inform, onboard, and support the screening of potential clients.

¹⁴ Calculated at 1 dollar per 136 Haitian Gourde; November 2022 Haitian exchange rate

Box 1. MonCash: The Digital Tool used by our Partner MFI in Haiti

MonCash, a digital wallet offered by Digicel Haiti in partnership with Sogebank since 2010 (previously under the name Tchotcho Mobile), is the digital tool used by our partner MFI for credit disbursement and repayment. The number of active customers (on a 90-day active basis) in 2017 was estimated at 805,000.¹⁵ Based on its website, users can perform various financial transactions.¹⁶, including:

- Hold money in their MonCash account
- Receive international money transfers
- Send money between MonCash users through their phone numbers
- Deposit/withdraw money to/from their MonCash accounts

Transactions and deposits within the world of Digicel (MonCash) are free, but cash withdrawals incur a fee. There are two wallet sizes: a mini (10,000 Gourdes) and a full (75,000 Gourdes).

The MFI's partnership with MonCash started in 2013, with little initial success. Two years post-partnership, only 350 clients used MonCash for loan repayments. Following a renewed partnership in 2016, with improvements in agent networks and staff and client training to build confidence in mobile money, a year later, 7,000 clients used MonCash for their monthly repayments. In February 2017, the bank disbursed loans directly through MonCash for the first time.

It is important to note that the MFI is not a financial technology firm (FinTech), but rather a bank that uses a combination of cash and mobile money services (MonCash) to extend credit services.

4. The Study

This study focuses on the process of accessing financial services (credit) in a low-income and fragile setting, where digital tools can be most useful but also more difficult to sell. In particular, this study seeks to delineate behavioral from structural issues influencing adoption of digital tools in order to devise strategies to address both sets of problems. By focusing on a particular MFI in Haiti, we provide lessons for MFIs in similar settings looking to adopt digital tools. This research especially applies to settings that have experienced negative shocks as it was conducted in 2022-2023, in the midst of the political and economic turmoil in Haiti.

¹⁵ Digicel Mobile Money (MonCash), Haiti. (2018). Retrieved on August 14, 2023 from https://customersguide.cgap.org/sites/default/files/resource/2018/05/CGAP_Digicel-Case-Study.pdf

¹⁶ <https://www.digicelgroup.com/ht/en/mon-cash-site.html>

4.1. The Methodology

In this research, we sought to understand the adoption of digital tools for accessing and repaying credit among clients of our partner MFI. This included a diagnosis of the factors that influence an individual's uptake and use of digital tools in Haiti.

To gain insights into the digital adoption of financial services, we combined global evidence with bank-specific analysis. This approach aimed to understand the driving factors and barriers to adoption among the MFI's clients. A comprehensive literature review was conducted to identify the behavioral and structural aspects that shape the core needs of the bank's target audience. In addition, we analyzed the bank's active and historical loan portfolio to understand the patterns around uptake and use of digital tools. Our initial plan involved conducting a qualitative study to contextualize the identified issues within the Haitian client base. This would then inform the subsequent design and testing phase, where interventions would be developed to address relevant behavioral challenges and have their efficacy assessed.

However, due to security concerns in Haiti and the imminent closure of the MFI's operations in the country, we had to make significant adjustments to our research plan. As a result, our research concluded at the diagnostic stage, rather than proceeding to the initially planned design and testing phase.

Quantitative Methodology

Three data sets provided by the bank were analyzed: active portfolio, historical loan data, and loan repayment transactional data from 2022. The analysis sought to provide a descriptive overview of the two customer segments - individual and VB loan customers - and how they differ. Furthermore, we conducted predictive analysis to understand the type of customers who are likely to use MonCash and likely to be repeat users and we also examined any gendered effects on MonCash use.

Qualitative Methodology

Location

From April to May 2023, we conducted interviews with the MFI's clients in Cap Haitien and Carrefour. These two regions are among the top three locations in terms of client share, accounting for one-third of the active client base.¹⁷ These locations were selected for multiple reasons – security,¹⁸ share of clients, diversity, and presence of MonCash agents.

Cap Haitien is a city in the Northern region. As of October 2022, it accounted for the largest proportion (24%) of the MFI's loan customers. This amounts to 9,818 customers spanning both rural and urban centers. Figures from the MFI's loan portfolio indicate that 1 out of every 5 Haitian Gourdes is disbursed to clients in this region. Cap Haitien has 11 MonCash

¹⁷ Clients with outstanding loans as of October 2022, when the data was retrieved.

¹⁸ The study was implemented during periods of intermittent political unrest in Haiti. This made implementation in some locations unfeasible.

agents (i.e., approximately 900 customers per agent). This is far off the benchmark (between 230-260) in more mature mobile money markets like Kenya and Tanzania.¹⁹

Carrefour, on the other hand, is located in Western Haiti, with heavy economic pressures and more urbanization. Agriculture is less of a mainstay compared to other regions in Haiti. It is the bank’s third largest region in terms of customer size. The customer to agent ratio is approximately 600 to 1.

Implementation

We conducted in-person interviews and discussions with both individual and group loan clients in both locations. Table 2 provides a breakdown of the characteristics of the participants. Data was collected in Creole and English, depending on the client’s preference. Interviews were led by trained enumerators in both cities. The interviews were transcribed and translated into English.

Characteristic	Carrefour		Cap Haitien		Total
	Individual interviews	VB client focus groups	Individual interviews	VB client focus groups	
Female	3	18	6	18	45
Male	6	-	3	-	9
Total	9	18	9	18	54

The in-depth interviews were conducted exclusively with individual loan clients and the focus group discussions with Village Banking groups. We randomly selected individuals and groups in each city but employed quota sampling to ensure our sample closely mirrors the MFI’s distribution; the majority of clients are female. Three representatives in the selected groups participated in the discussion. The questions cut across different themes including the client’s needs, how digital tools meet those needs, general engagement with digital products, and experience using digital tools to access the bank’s loan.

Analysis

Analysis of the qualitative data was largely thematic in nature. Thematic analysis refers to the review of a qualitative dataset to identify, analyze, and interpret key repeated patterns in the data output guided by the research questions (Braun V and Clarke V, 2006). This process involves the generation of codes and child-codes, and the construction of themes

¹⁹ Bersudskaya and McCafrey (2017). Agents Count: The True Size of Agent Networks in Leading Digital Finance Countries. Retrieved from https://www.helix-institute.com/sites/default/files/Publications/Agents%20Count_0.pdf on August 15, 2023.

and patterns of meaning in relation to the participants' self-reported lived experiences, views, perceptions, and behaviors related to the uptake of digital tools.

To begin, we generated a codebook to provide concise descriptions of each code generated from the inductive analysis of the research questions to guide the analysis. This codebook provided a constant comparative method of analysis. The initial version of the codebook contained codes and definitions grouped into categories. During the active analysis of the qualitative data, additional codes not included in the initial inductive process were revealed and added to the codebook.

Intercoder reliability was assessed and ensured by having two or more coders independently applying the codebook to analyze a full-length transcripts selected at random. By doing this, we ensured that the coding system was not too cumbersome or complicated, yet robust enough to capture the insights in the data, as suggested in Campbell JL et al. (2013). The analysis was conducted using NVivo, a qualitative data analysis software.

The insights in the next two sections stem from our analysis of the bank's loan portfolio and the qualitative study.

5. Quantitative Analysis

The analysis is based on two loan-level datasets provided by our partner MFI: the active (outstanding) portfolio and the historical loan portfolio as of October 24, 2022. In addition, the bank shared its repayment transaction records from 2022, to help explore how digital repayment affected loan performance. The transaction data were merged with the historical loan data to provide a portrait of repayment on a monthly basis.

This section is structured as follows. Key findings from the exploration of the MFI's administrative data are listed below. Subsections 5.1 and 5.2 provide a thorough overview of the MFI's active and historical loan portfolios, respectively. These overviews serve multiple purposes. First, they provide context to understand the subsequent quantitative and qualitative findings pertaining to the uptake of digital tools for microfinance. Second, they constitute a substantial contribution to the literature on microfinance in the Haitian context, especially during the political and economic crises of 2021-2023, where reliable and recent data are scarce. Subsection 5.3 focuses on the utilization of MonCash, the Haitian digital payment platform, for disbursement and repayment of the MFI's loans. Subsection 5.4 concludes and provides some caveats and limitations of the data.

Key Findings of the Quantitative Analysis

- The MFI's customer base is predominantly women who borrow in groups for the purpose of funding small merchant enterprises. They pay high interest rates and loan fees; however the high rate of repeat customers implies that the MFI's offer remains better than alternative options for credit.

- Even in a generally unstable context, the economic and political crisis sparked by fuel tax protests in September 2022 was severe and led to a precipitous decline in the health of the MFI’s portfolio, particularly in terms of repayment rates. The availability of MonCash as a form of payment when physical movement was dangerous did not meaningfully protect the bank or its customers from this turmoil.
- High time variability in the proportion of customers choosing to receive the loan via MonCash indicates that utilization of digital tools may be dependent on the bank’s effort in promoting this channel. Similarly, a decline in MonCash disbursement after a peak in Q3 of 2021 provides substantial evidence that customers who do try MonCash once find the experience suboptimal. Qualitative evidence suggests that customers are unaware that the MFI will refund withdrawal fees.
- In a similar vein, many customers who use MonCash for repayment once subsequently return to cash transactions. This finding provides further evidence that some aspects of the digital payment platform are off-putting for potential users. However, there is a high degree of variation across the MFI’s branches in the proportion of loans that are repaid using MonCash, which is not fully explained by the availability of MonCash agents. This implies that usage of the digital payment channel is within the bank’s control. This implication is further explored by qualitative analysis focusing on the roles of agents and loan officers in Section 6.

5.1. Understanding the Sample – The Haitian MFI’s Active Loan Portfolio

Although slightly different variables are available for the active portfolio compared to historical records, these data generally contain information on:

- Customer demographics: gender, branch location, and (only for historical portfolio) age
- Type of financial product: earthquake recovery loans, individual or group loans, etc.
- Purpose of loan: what economic activity the business is involved in

Active Loan Portfolio - At a Glance

- Total portfolio size: HTG 1.66B (US\$10.9M at June 2023 exchange rate)
 - 15% of loans in arrears (11% weighted of portfolio amount)
- Number of loans: 40,801
- Number of unique customers: 40,799
- Only 15% of the loans (about 6,000) are to individual customers. The remaining 34,800 loans are to customers in 2,091 different groups (median group size: 13).

Table 3: Summary of Active Loan Portfolio Customers (N= 40,801)

Statistic	Mean	St.Dev.	Min	Max
Female	0.89	-	0	1
Group Loan	0.85	-	0	1
Loan Amount ('000)	41	98	4	5,249
Balance Outstanding ('000)	23	64	1.00	2,503
In Arrears	0.15	-	0	1
Interest Rate (%)	69.12	2.95	18.00	70.56
Number of Previous Loans	4.32	5.03	0	30
Length of Term (months)	6.13	1.44	4	71

Customer Demographics

The MFI's customer base is overwhelmingly female; women make up 9 out of 10 VB group clients. As noted above, this is by design since groups are limited to including a maximum of one man. In the individual loan portfolio, where loan amounts are larger, men constitute 30% of active customers and almost half the total active portfolio amount (see Figure 1 below).

The current portfolio is distributed across the country. While the MFI does not have precise location data for many of its customers, it can be inferred from the branch location that each loan is associated with. As seen in Table 4 below, the bank's busiest branches are in the larger towns of the north and south coasts, largely away from the capital except for one outlying satellite settlement of Port-au-Prince, Carrefour.

The bank also operates a 'virtual branch' for individual loan clients, which originates approximately 7% of individual loans. However, this proportion does not seem to be increasing over time. Qualitative research (see Section 6) suggests that this is due to low awareness of this channel.

Figure 1: Active Customer Breakdown By Gender

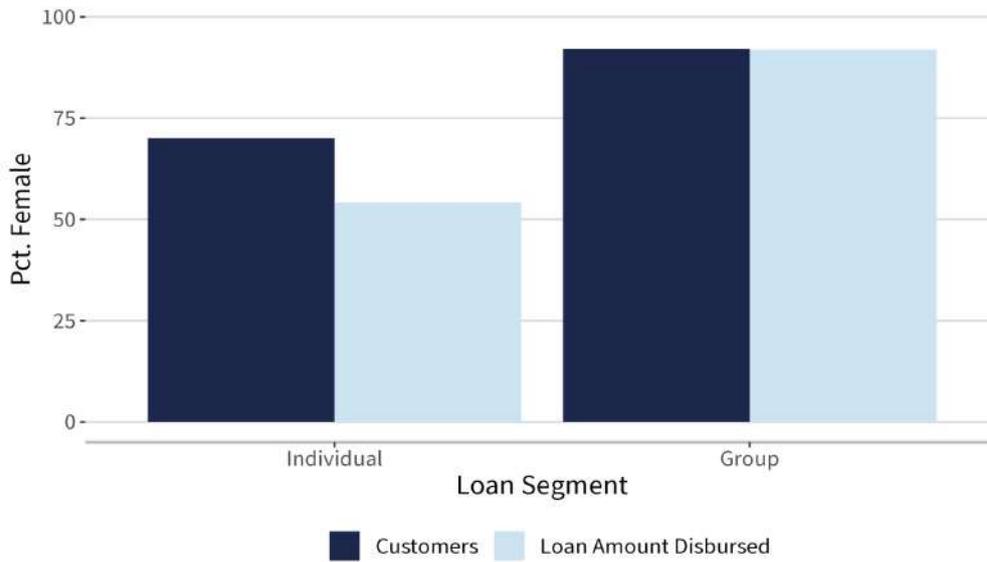


Table 4: Geographic Distribution of Active Portfolio (N= 40,801)

Branch	Individual Loan		Village Banking Loan	
	Number of customers	Average loan size ('000)	Number of customers	Average loan size ('000)
Cap Haitien	738	158	9,080	26
Gonaives	751	170	5,129	27
Carrefour	700	172	4,125	29
Saint-Marc	746	130	4,065	23
Jacmel	478	120	2,278	20
Les Cayes	314	129	2,052	25
SML/SL (Head office)	435	161	1,736	16
Ouanaminthe	258	115	1,730	19
Leogane	194	85	1,292	23
Cabaret	371	123	1,117	26
Miragoane	216	100	1,001	18
Mirebalais	216	42	870	16
Croix-des-bouquets	35	158	320	25
Call center virtual branch	554	88	0	0

Interest Rates and Loan Fees

Although a comprehensive discussion of interest rates is outside the scope of the current research, it is noteworthy that the mean (annual) interest rate is high by international standards at 69%, which corresponds to a 6% monthly interest rate or 41% over the term of the median loan (6 months). With consumer price inflation in Haiti projected to be 26.7% in 2022,²⁰ real annual interest rates for the MFI's clients hover around 43%. Meanwhile International Monetary Fund estimates imply *negative* prevailing real interest rates for formal bank customers in Haiti in recent years,²¹ although data are only available until 2021 and therefore do not take the multiple crises of 2021-2022 into account.

Nonetheless, the rates offered by the MFI may still be preferable for their customers to those charged by other providers. In the qualitative interviews, higher interest rates from other lenders was noted as a reason why clients stick with the MFI's loans (see Section 6). The MFI's interest rates are in line with estimates which indicate that real portfolio yields were 48% among Haitian MFIs in 2008.^{22,23} Reliable data on loan terms from informal money lenders are scarce, but estimates range from 118% (real) rates for merchant loans in 2014²⁴ to anecdotal evidence of annualized interest rates exceeding 300%.²⁵

High interest rates also serve as compensation for a significant amount of risk. While 15% of active loans appear to be in arrears, this is an overestimate since loans that are repaid early are removed from the active loan portfolio, even if this occurs before the originally scheduled maturity date.

The notion that the cost of financing available from the MFI is still preferable to alternative options is further evidenced by the fact that the bank has a loyal customer base; the median customer in 2022 is on their 5th loan. However, part of this apparent 'loyalty' is also mechanical: the MFI temporarily suspended service to new clients in September 2022 due to political unrest and the resulting challenges. However, the bank has historically achieved portfolio growth primarily through repeat customers rather than expanding their client base (see Figure 4 below). By October 2022, over 75% of current clients were repeat customers.

Loan Purpose and Structure

In keeping with the bank's mission to promote small and medium enterprises, all loans are given for the purpose of providing working capital. The economic activity that the individual or group is engaged in is recorded during the loan registration process. Figure

²⁰ World Bank Open Data. (2021). Consumer price index (% change) in Haiti [Data file]. Retrieved February 24, 2023, from <https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=HT>

²¹ World Bank Open Data. (2022). Real interest rate (%) in Haiti [Data file]. Retrieved August 14, 2023, from <https://data.worldbank.org/indicator/FR.INR.RINR?locations=HT>

²² Campion, A., Ekka, R. K., & Wenner, M. (2010). *Interest rates and implications for microfinance in Latin America and the Caribbean* (No. IDB-WP-177en). IDB Working Paper Series.

²³ See also Costello, D. (2010). Can Microlending Save Haiti. *New York Times*, Nov 13. <https://www.nytimes.com/2010/11/14/business/global/14haiti.html>

²⁴ Gignoux, J., Macours, K., Stein, D., & Wright, K. (2023). Input subsidies, credit constraints, and expectations of future transfers: Evidence from Haiti. *American Journal of Agricultural Economics*, 105(3), 809-835.

²⁵ Hastings, A., Kurz, J., & Felix, K. (2010). A Bank the Poor Can Call Their Own. *Innovations: Technology, Governance, Globalization*, 5(4), 13-32.

2 below illustrates the distribution of the active loan portfolio by sector, as labeled by loan officers. Although there are 146 different types of economic activities documented, the top five categories collectively account for over 60% of all loans and a majority of the portfolio amount. These dominant categories are all various small-scale merchant enterprises. Food retail alone accounts for 30% of the total portfolio, while other small retail enterprises dominate the five most common sectors.

There are also several hundred loans for larger-scale investments or more capital-intensive enterprises, such as construction materials, spare parts, electronics suppliers, and pharmacies. The average size of the 50 loans for construction materials, for example, is HTG 521,616 (US\$3,460). This figure is more than 12 times the average loan in the food retail sector. However, these collectively account for a small portion of the total portfolio.

Figure 3 plots the distribution of loan amounts for the individual and group portfolios. Seen this way, it is clear that the MFI prefers to provide group loans at fixed amounts, resulting in the discrete nature of the distribution. The individual loan amounts follow a much wider distribution, indicating that the loan amount is more tailored to specific needs.

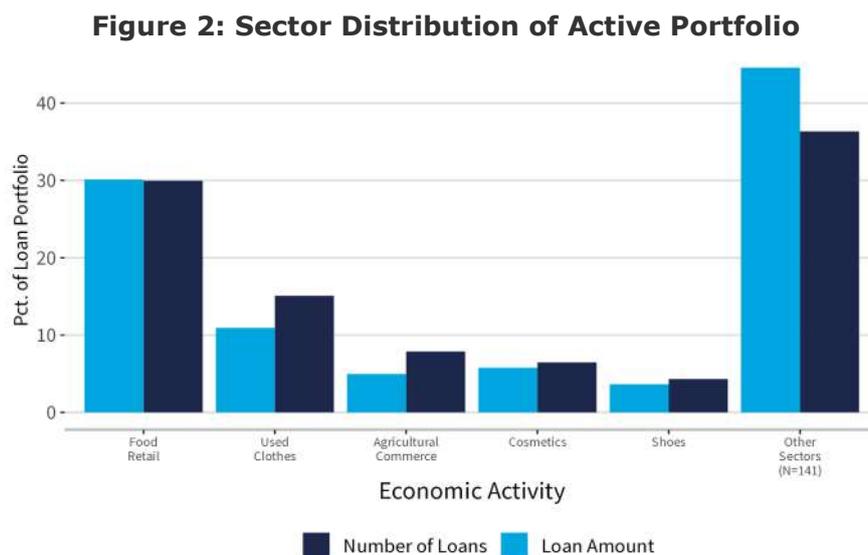
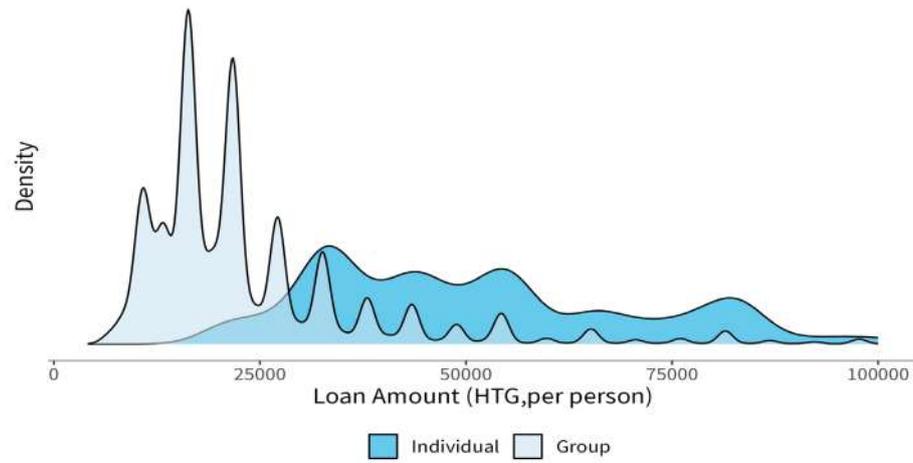


Figure 3: Loan Amount Distribution by Loan Type, Active Portfolio



5.2 Portrait of an MFI in Haiti – The Historical Loan Portfolio

Historical Loan Portfolio - At a Glance

- Observations (customer-loan): 527,630
- Total loan amount disbursed: HTG 13.3 B (US\$88.9M)
- Number of unique customers served: 158,015. The median customer has taken 3 loans over the 5 years of the sample timeframe
- Number of loans disbursed (including group loans): 82,469

Table 5 provides an overview of the historical loan portfolio data. The unit of observation is the customer at the time of loan issue; each customer can appear in the portfolio multiple times during separate loan cycles. The median customer has taken three loans over this period (from 2017 to October 2022) and therefore appears in the database three times. Therefore, the means in the table should be understood as referring to the average loan customer over the course of the MFI’s activity in Haiti. Under this interpretation, the MFI’s average customer is a 40-year-old woman who takes a group loan and is on her fifth loan cycle with the bank and receives a loan of HTG 25,000 (US\$185 at time of writing). She pays approximately 5% of the loan amount in fees.

It is also worth noting that 22% of all loans disbursed by the MFI were done using MonCash, although this proportion varies significantly over time and by location (see Section 5.3 below). Only 3% of loans have been written off and less than 1% restructured; however these figures understate the true non-performance rate since approximately 11% of all loans did not repay the principal amount in full.

Table 5: Summary of Historical Loan Portfolio (Customer-Loan)²⁶

Statistic	Mean	St.Dev.	Min	Max
Female	0.90	-	0	1
Age	39.97	11.41	18	98
Group Loan	0.92	-	0	1
Number of Previous Loans	4.18	4.31	0	30
Loan Amount ('000)	25	85	1	10,417
Amount Repaid ('000)	23	79	0	10,417
Fee ('000)	1.3	13	0	416
MonCash Disbursement	0.22	-	0	1
Not fully repaid	0.11	-	0	1
Written off	0.03	-	0	1
Restructured	0.01	-	0	1

Evolution of the Haitian MFI's Portfolio

Figures 4 and 5 provide an overview of the evolution of the MFI's client base portfolio over time. Historically, over 90% of all loan customers are women, although the proportion of men has climbed slightly to 15% in the current portfolio. New customer acquisition decelerated during the first two quarters of the pandemic but has accelerated since then. This may demonstrate higher demand for digital banking services as a result of the pandemic.

Similarly, the MFI's loan issuance grew rapidly from 2017 through the end of 2018 but reached a consistent size with large quarter-to-quarter variation since then. The effect of the onset of the pandemic is clearly evident in Q2 of 2020, but loan issuance fully recovered within one quarter.

²⁶ Customer loan data covering 82,469 loans (including group loans) provided to 158,015 customers (including repeat customers) from July 2017 until October 2022, comprising a total of 527,630 observations.

Figure 4: Cumulative Customer Acquisition

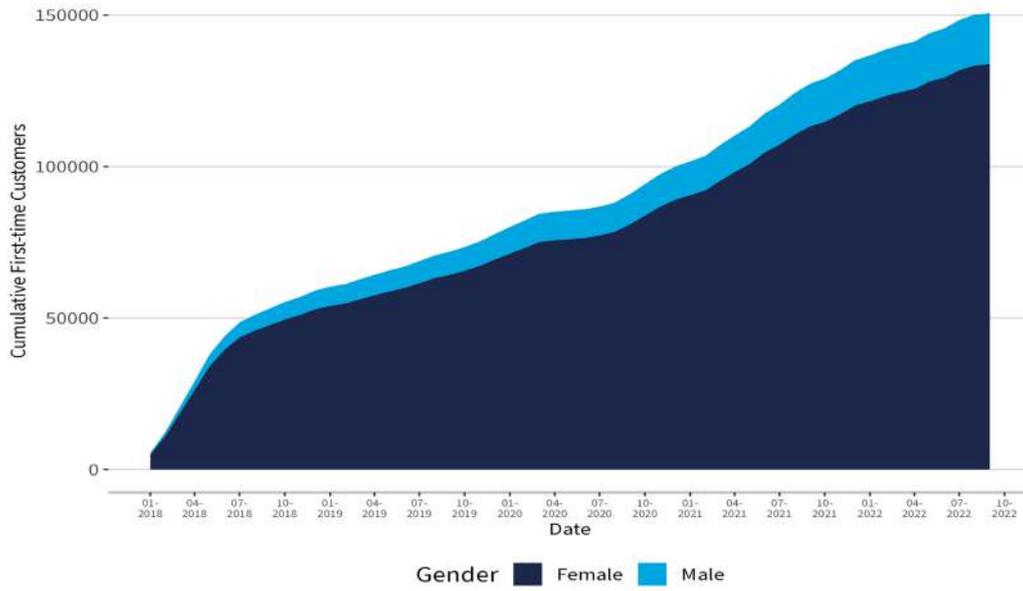
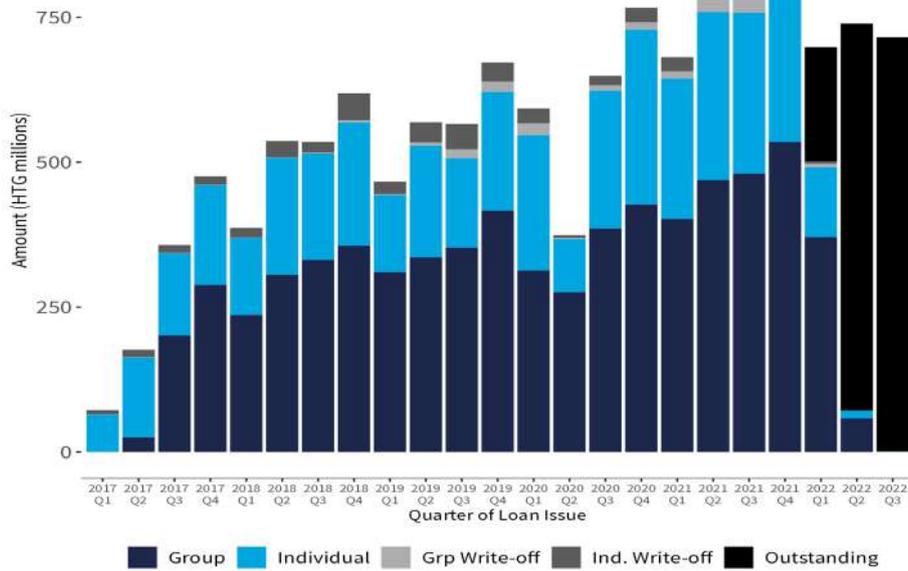


Figure 5: Evolution of the Portfolio Over Time



5.3 MonCash Utilization by the MFI’s Customers

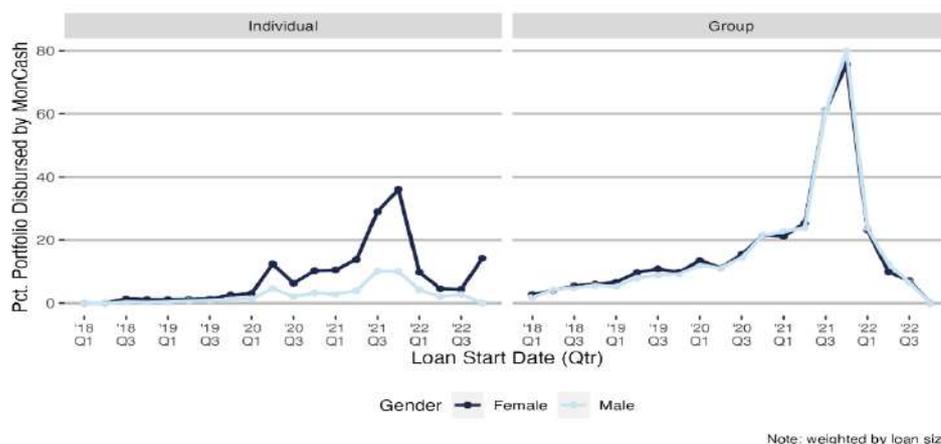
The MFI’s customers can utilize the MonCash mobile money platform both for receiving and repaying loans.

MonCash Disbursal

Across the entire portfolio, 22% of loans were disbursed by MonCash. However, this statistic obscures considerable variation over time. Figure 6 illustrates the proportion of the MFI’s portfolio disbursed by MonCash by quarter, broken down by gender and loan segment (group or individual). While the MFI started disbursing some group loans through MonCash in Q3 of 2017, the method did not begin to be used for a sizable portion of the portfolio until 2021, when a large increase in MonCash disbursal was observed in the group loan segment. The increased utilization of MonCash for group loans in 2021, likely due to a concerted effort on the part of the MFI, indicates that customers do seem to be willing to accept MonCash disbursal if the MFI prioritizes it. The steep decline in the use of MonCash in the first quarter of 2022 was due to a new regulation by the Banque de la République d’Haïti (Central Bank in Haiti) on mobile wallet usage. To open a full wallet with a transaction limit of 75,000 Gourdes, MonCash users were required to register with official documents. This regulation restricted most users to the mini wallet, with a 10,000 Gourde limit.

It is interesting to note that women display much higher adoption rates of MonCash disbursal in the individual loan segment. This gender difference is not present in the group loan segment, but this may be mechanical since men only participate in this segment in mixed-gender groups, with the majority of groups including exactly one man. This is only a partial explanation, however, since different members of the same group can choose different disbursal methods.

Figure 6: Use of MonCash for Loan Disbursal



MonCash Repayment

The transaction data available indicate a similarly complex picture for uptake of MonCash for repayment. Figure 7 illustrates the aggregate repayment data by month in 2022, in

which the effect of the political crisis that began in September 2022 – and the consequences of the principal payment moratorium instituted by the MFI in that same month²⁷ – are clearly visible. The data indicate that MonCash repayments dropped off less precipitously during the turmoil. However, the fact that cash repayments recovered in the succeeding months while MonCash transactions continued to decline suggests that this was mainly due to customers switching from cash payments to MonCash temporarily. This is important for the survival of the MFI but does not support the notion that MonCash usage allows customers to better weather economic shocks.

Figure 7: Monthly Repayment Transactions, Cash vs MonCash



Table 6 explores the relationship between MonCash utilization and loan performance in more depth. All three columns depict linear probability models of loan *non*-repayment on demographic and loan characteristics in the historical portfolio. The dependent variable is a binary indicator for the total principal repaid being less than the original loan amount,²⁸ multiplied by 100. In other words, positive coefficients indicate a *lower* probability of repayment and coefficients can be interpreted as percentage points. Column 2 includes location (branch) fixed effects, while column 3 includes both location and sector fixed effects. Table 6 is not intended to be a comprehensive underwriting model and should only be used to understand the associations between repayment and demographic characteristics. The low R-squared of all specifications indicates the difficulty in predicting loan performance from basic KYC information in such an economic environment.

In all three specifications, men are 0.9-1.3 percentage points more likely to not repay in full. Older clients exhibit higher repayment rates, while the size of the loan is negatively associated with loan performance. In column 1 it appears that within groups, men are less likely to repay in full, but this association is not significant after accounting for location.

²⁷ To understand the effects of the principal repayment moratorium, it is important to note that only customers who were up to date on loan payments as of July 31, 2023 and still had outstanding balances as of September 2023 were eligible. Only 20% of the active portfolio met those criteria.

²⁸ This construction of loan repayment was chosen to be all-encompassing of non-performing loans. The MFI only formally writes off a small proportion of non-performing loans.

Of most interest to the present study, MonCash loan disbursement is weakly but statistically significantly associated with lower repayment rates. This effect is robust across the three specifications but at less than one hundredth of a percentage point is not meaningful.

Table 6: Predictors of Loan Non-performance

	Dependent variable		
	Loan Non-Repayment (x 100)		
	(1)	(2)	(3)
Male	0.96** (0.46)	0.86* (0.45)	1.26*** (0.47)
Group	4.88 (18.78)	15.05 (24.07)	16.58 (24.67)
Male*Group	3.67*** (0.15)	-0.12 (0.18)	-0.23 (0.18)
Age	-0.16*** (0.04)	-0.20*** (0.04)	-0.19*** (0.04)
Age-Sq	0.001* (0.0005)	0.001* (0.0005)	0.001* (0.0005)
MonCash Disbursal	0.005*** (0.001)	0.004*** (0.001)	0.005*** (0.001)
Loan Amount	1.00* (0.54)	1.45*** (0.54)	1.24 (0.55)
Location FEs	No	Yes	Yes
Sector FEs	No	No	Yes
Observations	100,082	100,082	100,082
R2	0.03	0.06	0.06

Notes: ***, ** and * denotes significance at the 1, 5 and 10 percent significance level, respectively.

The majority of the customers still utilize cash repayments despite the availability of the mobile money platform. Approximately 47% of customers who made a loan payment in 2022 used MonCash at least once. However, customers only made 28% of loan payments with MonCash on average. Furthermore, MonCash repayment transactions by the MFI's customers declined throughout 2022. The fact that so many customers go back to using cash after trying MonCash indicates that they found the process to be less than satisfactory in some way. This may be related to the MonCash fees; the MFI refunds all MonCash fees for their clients, but qualitative research suggests many customers are unaware of this fact.

Figure 8 explores the proportion of customers who ever used MonCash for repayment in 2022 by gender and loan segment (group or individual). Men are more likely to have at

least tried MonCash in both segments, although both male and female individual loan recipients utilize MonCash more than group customers of either gender.

Table 7 presents linear probability regressions of MonCash usage for disbursement and repayment on demographic characteristics available in the administrative data. Interestingly, the gender difference observed in usage of digital payments is no longer significant for individual loan customers when accounting for other demographic factors. Moreover, men in groups are *less* likely to use MonCash to repay their loan than their female counterparts when all else is equal.

The regressions in Table 7 include branch fixed effects, although these are omitted from the table for clarity. However, there are meaningful differences in MonCash usage by location. These figures are illustrated in Figure 9. Strikingly, in four regional branches nearly 100% of repayment transactions in 2022 were executed using MonCash, while in most branches the amount was less than 40%. This could be because some of these locations (e.g., Mirebalais) run exclusively cashless branches and MonCash is the default mode of payment. In other branches that are not cashless, this may reflect the efforts of branch staff to promote the use of digital payments, indicating that the loan officers do have influence on the uptake of digital services by their customers, or may simply be due to the availability of agents. Section 6 analyzes the roles of agent networks and loan officers to enable the usage of digital tools. With limited data available on the density of MonCash agent networks, it does not appear that the proximity of agents alone can account for the variation in MonCash uptake (see Table 10).

Figure 8: Use of MonCash for Repayments, by Gender and Loan Type

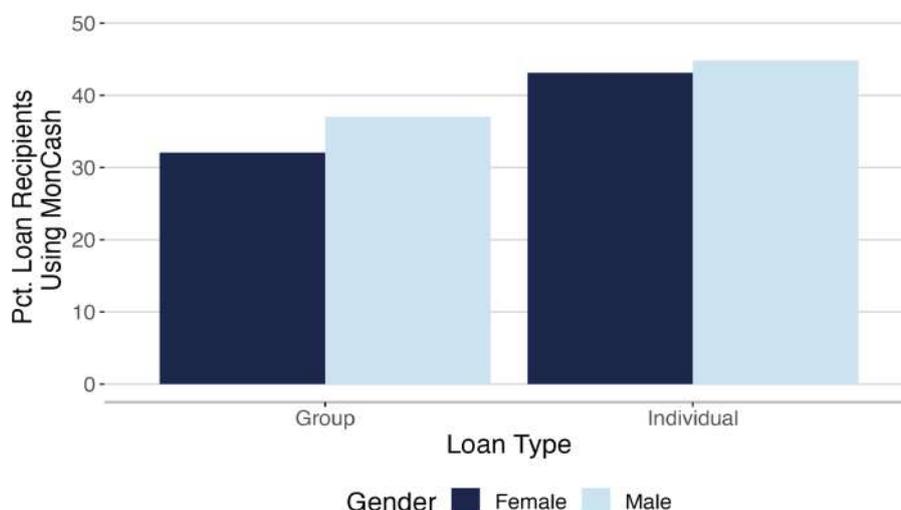


Figure 9: Use of MonCash by Branch

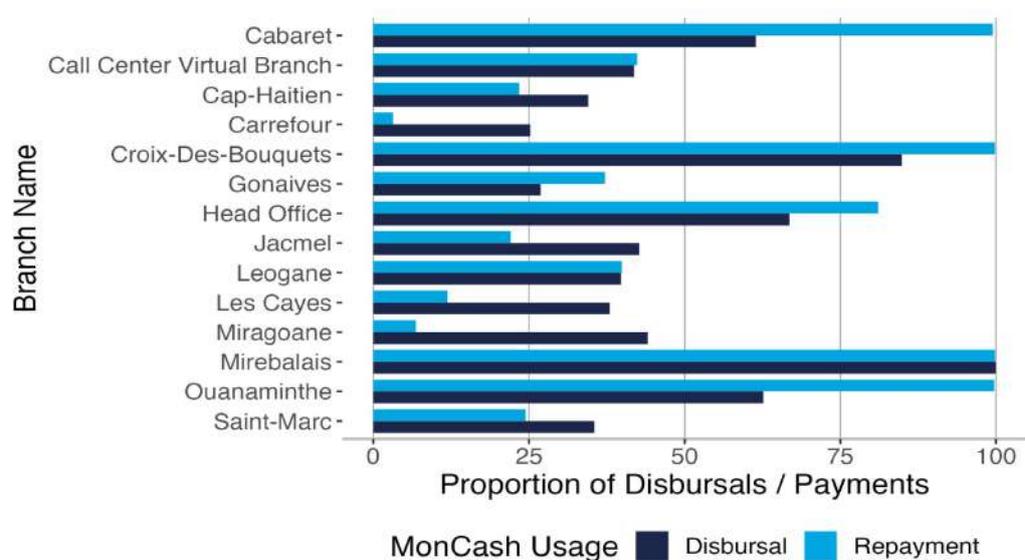


Table 7: Predictors of MonCash Usage

	Dependent variable	
	Moncash Repayment (1)	MonCash Disbursement (2)
Intercept	0.41*** (0.008)	-0.83*** (0.004)
Male	0.152 (18.78)	0.0085 (0.002)
Group	-0.0004 (0.0003)	0.001*** (0.00004)
Male*Group	-0.007*** (0.001)	-0.012*** (0.0001)
Age	-0.0001*** (0.00002)	-0.0002*** (0.00002)
Loan Cycle	-0.015 (0.018)	0.067 (0.004)
Location FEs	Yes	Yes
Sector FEs	No	No
Observations	20,310	527,360
R2	0.328	0.241

Notes: ***, ** and * denotes significance at the 1, 5 and 10 percent significance level respectively.

5.4 Data Limitations

It should be noted that the data we analyzed had significant limitations and some inconsistencies:

- No granular location data was available for this study. Therefore, we were unable to explore differences between urban and rural customers or analyze the relationship between MonCash agent proximity and utilization of the tool.
- The data imply that some loans are missing. Historical records indicate the number of previous loans taken by a given customer, but for 34% of the customers this number exceeds the number of loans that are associated with their identification number in the database, implying the existence of 195,558 additional loans that are not in the data provided by our partner MFI.
- Repayment data is only available for 2022. Therefore, the conclusions about the drivers of and trends in MonCash repayment behavior presented here are drawn from a 10-month sample frame (January - October 2022).

6. Qualitative Analysis

The qualitative review seeks to understand the situational and contextual factors contributing to adoption and usage of digital tools. We conducted in-depth interviews and facilitated small focus group discussions with our partner MFI's clients to primarily answer these questions:

- What are the enabling factors facilitating the use of digital tools to access the loan?
- What are the barriers preventing the use of MonCash for loan disbursement and repayment?

Key Findings of the Qualitative Analysis

- The client onboarding process has some complexities that make the process challenging for customers. For instance, customers are required to visit the bank to receive their loan application documents. This leads to additional transport expenses. In addition, loan agreements are presented in English instead of Creole. As a result, clients struggle to fully understand the terms associated with the loan.
- There is little awareness about the virtual channels available to initiate loan applications. With improved awareness, this channel could reduce the bottlenecks experienced during onboarding for individual loan clients.
- The withdrawal and transaction fees deducted during cash out and cash in on MonCash is a major pain point for customers. Most customers opt for cash to avoid these fees even though they incur higher transportation costs and other less salient costs.
- Customers had some misconceptions about the withdrawal fees that influenced their decision to stop using MonCash for withdrawals. Some also reported liquidity issues at MonCash points. Further, the customer-agent ratio suggests some

locations may be underserved by MonCash agents. For customers with large sums of money they are constrained by the wallet size limit on MonCash.

- Clients prefer cash repayment for confidence, aided by bank staff interaction and receipts. Repaying via MonCash lacks receipts from the bank. This suggests that trust and confidence in the repayment system is valued above the monetary cost incurred on transportation and other costs.
- The channel used for repayment is also largely directed by the loan officer. Village Banking clients seem to have less agency to decide which channel they want to utilize for loan repayments.

6.1 Findings and Discussion

There are three critical areas in the MFI's loan process that require some form of action from clients: take-up, disbursement, and repayment of loans. For this MFI, engagement with MonCash occurs at disbursal and repayment. As a result, we mostly focus the discussion on the issues that arise at the disbursal and repayment stages but briefly discuss take-up.

Understanding Loan Take-up

Loan take-up or adoption encompasses the awareness and onboarding phase. Our study shows that the majority of the clients hear about the loan through the bank's loan officers. Sometimes, awareness is organic (the individual seeks out the loan officer to inquire about the product) but most times, awareness stems from the loan officers' visits. Beyond loan officers, some clients²⁹ also noted that they get information about the MFI through interpersonal networks of family and friends. For Village Banking clients, these interpersonal networks are fellow business members within their community looking to form a group to access the loan.

The officers also play a key role in onboarding both client segments. The Village Banking groups receive close support due to low literacy levels. The clients note that the onboarding experience is largely smooth due to the support provided by the officers. However, there are pain points in the process that frustrate clients.

Figure 10 outlines these barriers and the enabling factors experienced during the onboarding process. The main barriers occur during touchpoints with the bank -when the clients are invited to learn more about the loan product, fill out their loan forms, and verify documents. While the customers express that this process engenders trust, the long travel time and loss of productivity are noted as inconveniences. At the verification stage, both client segments note that the loan agreement is not presented in Creole (their local language), limiting their understanding of the loan terms.

²⁹ 6 out of 12 participants in the individual interviews and 3 out of the 18 groups in the focus group discussions.

Figure 10: Enablers and Barriers at the Take-up Stage

 Step 1: Awareness	 Step 2: Information seeking	 Step 3: Verification
<p>Enabler(s)</p> <ul style="list-style-type: none"> • Loan officers serve as a useful resource to learn more about the loan process. 	<p>Enabler(s)</p> <ul style="list-style-type: none"> • Interaction with bank fosters trust. • Training on loan management. <p>Barriers</p> <ul style="list-style-type: none"> • Long travel time to the office. • Long waiting time. 	<p>Enabler(s)</p> <ul style="list-style-type: none"> • Clear information about required documentation. • Officers available to collect documents. <p>Barriers</p> <ul style="list-style-type: none"> • Loan agreement is not presented in Creole - the language clients understand.

Discussion

Can digital platforms (such as WhatsApp, Facebook) help with client onboarding and minimize the need for in-person bank visits? While this approach could prove effective for individual loan clients, it may not be suitable for Village Banking clients due to specific constraints.

The MFI operates a virtual unit, enabling clients to initiate loan applications via platforms such as WhatsApp, Facebook, or designated call branches. Referencing Table 3, it is evident that a mere 3% (554) of the overall active loans are sought through this particular channel. In order to understand this limited adoption, we inquired about the reasons behind the low engagement. Strikingly, all interviewed participants expressed unfamiliarity with this communication medium. This suggests that the constrained usage can be attributed to a lack of awareness. Notably, when participants were asked about potential enhancements to the loan application process, a subset of customers within the individual segment recommended the integration of a digital platform to streamline the application procedure, despite the presence of an existing platform.

Enhanced awareness of the virtual branches could enhance the utilization of this channel for individual loan clients. Although this data is not fully representative, the prevalence of smartphone ownership is noteworthy within the random sample that was interviewed. Among participants in the Individual loan segment, a substantial 88% (16 out of 18) reported owning a smartphone. In contrast, in the Village Banking loan segment, fewer than half (15 out of 36) possess smartphones, implying potential limitations for this group. Despite the relatively modest smartphone ownership rate, those lacking personal devices often utilize a family member's phone to access digital services. While acknowledging that this sample might not accurately mirror the MFI's entire client base, the insights derived from it suggest a valuable opportunity in promoting the virtual branch among individual loan clients.

Key Lessons Learned

- Bank visits, despite its barriers, foster customer confidence and trust. This trust stems from interaction with the bank staff.
- Decreasing the complexity of onboarding could make the process less burdensome, reduce productivity loss and other hassles encountered during onboarding.
- Virtual channels offer a medium to reduce bank visits but require more awareness and supervision from loan officers, the intermediary between the bank and clients.

Enabling Factors and Barriers Influencing Adoption of Disbursement Channels

At the disbursement stage clients receive their loans: the exact amount is decided through the bank's Central Underwriting Unit. An applicant's loan request is reviewed against the business information to ascertain creditworthiness. Then, customers receive their money through cash or MonCash. They can also alternate between both payment channels. The findings across both customer segments are largely similar, however, there are some nuances concerning the customer's agency, as in the capability of an individual to choose their preferred repayment channel.

Of the 18 individual banking clients interviewed, 17 reported that they mostly receive their disbursements through cash. A majority of them lacked awareness about alternative methods of cash disbursal.³⁰ Moreover, other respondents noted that they acted on the officers' instructions on where to receive their cash disbursements, therefore limiting their choices. Use of MonCash was mostly recommended by the bank during periods of political unrest to prevent long travel distances.

Clients who were well-informed about digital options and opted for cash did so to avoid withdrawal charges. Interestingly, 4 clients out of 18 adopted a hybrid approach, receiving their loan disbursements through both cash and MonCash. This group indicated that the initial cash disbursement was directed by the MFI, aligning with administrative data suggesting active promotion of MonCash by the institution at certain intervals.

For Village Banking clients, the experience is similar. Discussions with these groups reveal minimal agency with respect to decisions on the available disbursement channels; the groups deferred to the loan officers' recommendation. While most groups (8/12 focus groups) indicated using MonCash at one disbursement period, physical disbursement remains the most popular method.

Discussion

Through the analysis we observe three distinct groups interacting with MonCash based on two factors: awareness of MonCash as a disbursement tool and adoption of MonCash. These groups form the basis of the insights generated on the facilitators of and barriers to

³⁰ These clients are aware of MonCash but were not aware they could receive their loans through MonCash.

disbursement. Table 8 shows the three groups and the insights generated from each.

Table 8: Emergent Groups from Analysis		
Awareness of MonCash for loan disbursement	MonCash Use	
	Used MonCash in the past	Has not used MonCash
Aware	<ul style="list-style-type: none"> • Enablers of MonCash use • Barriers to Moncash use 	<ul style="list-style-type: none"> • Challenges with cash disbursement • Barriers to MonCash use
Not Aware	-	<ul style="list-style-type: none"> • Challenges with cash disbursement

Enabling Factors Influencing the Use of Digital Tools for Disbursement

Individual loan customers that receive their loan through cash complain about the long travel and wait times at the bank and fear of potential theft when traveling with the cashed loan. For VB clients, this is made worse by the bank’s requirement that all members of the group visit the bank together on the day of disbursal. MonCash potentially solves these challenges.

In discussions with clients who receive their loan disbursements through MonCash, four factors were outlined as facilitators of the use of digital tools:

- **No transportation costs** - Both customer segments expressed that they encounter minimal difficulties when they access their disbursed loans through MonCash service points. This eliminates the need for long and potentially expensive journeys to the bank, making the loan disbursement process more convenient and accessible for clients. The reduced cost is potentially significant for VB clients since they can ask administrative leads in the groups to receive their cash.
- **Reduced safety or security concerns** - Respondents felt safer using MonCash agents in their communities as it eliminated the need for long-distance travel with large amounts of cash.
- **Enhanced assistance for accessing MonCash accounts with higher limits** - MonCash has two wallets: a mini and a full wallet with a limit of 10,000 and 75,000 Gourdes, respectively. At the time of disbursal, through its loan officers, the MFI supports the customer’s transition to a full wallet. Perks like this encourage participants to use MonCash. This factor encourages individual clients with larger loan amounts.
- **Faster disbursements and opportunity cost** - Disbursements using MonCash are reportedly quicker for the VB loan clients when compared with accessing funds at the MFI’s offices. This is due to lack of queues and shorter wait times. As a result, clients save time and reduce the opportunity cost in the form of missed income, if they had visited a branch.

Table 9: Summary of Enablers of Digital Tools		
Enablers	Individual Loan	Village Banking
Reduced cost	Yes	Yes
Limited security concerns	Yes	Yes
MFI-supported increased MonCash limits	Yes	No
Quick disbursements	Yes	Yes

Barriers Influencing the Use of Digital Tools for Disbursement

For customers aware they could receive their loan using MonCash, the main challenges reported are structural. For example, high withdrawal fees, MonCash wallet limits, and insufficient funds at MonCash Points. The other issue highlighted is behavioral - misconceptions on withdrawal fees. These points are discussed below:

MonCash limit

For individual loan customers that qualify for higher loan amounts, the daily wallet limit restricts them from using MonCash. A potential solution for this group is for the MFI to make disbursements multiple times but this would require multiple trips to the agent and could introduce additional complexities for the client.

Insufficient funds at MonCash points

Across both locations, respondents reported that sometimes MonCash agents do not have sufficient funds to meet their loan amount. Consequently, they have to visit multiple MonCash locations or visit a single agent multiple times to access the full amount. While the study did not investigate the liquidity of MonCash agents, there are indications of liquidity challenges. First, both locations rank among the lowest when we examine the proportion of clients that receive their disbursement using MonCash (see Table 10). Second, the customer to agent ratio in Cap Haitien and Carrefour is around 900 and 600 to 1, respectively. These are among the highest in the locations where the MFI operates.

Table 10: MonCash Disbursal, Repayment, and Customer-agent Ratio per Location (N= 40,801)

Location	Number of customers	Proportion - MonCash disbursal (%)	Proportion - MonCash repayment (%)	Customer-agent ratio
Cap Haitien	9818	34	23	893
Gonaives	5880	27	37	840

Carrefour	4825	25	3	603
Saint-Marc	4811	35	24	321
Jacmel	2756	43	22	394
Les Cayes	2366	38	12	95
SML/SL (Head office)	2171	67	81	145
Ouanaminthe	1988	63	99	N/A
Leogane	1486	40	40	N/A
Cabaret	1488	61	99	149
Miragoane	1217	44	7	152
Mirebalais	1086	100	99	N/A
Croix-des-bouquets	355	84	99	89
Call center virtual branch	554	42	42	N/A

Note: N/A means data not available

Misconceptions about withdrawal fees

Some respondents who received the loan disbursement via MonCash reported that while the MFI pays the withdrawal fees at the time of disbursement, the amount is later included in the total amount payable without informing them. This perception cuts across both client segments. Other SMEs that make withdrawals from the bank believe withdrawal costs are high. In 3 of the focus group discussions, it was reported that the transaction charges per withdrawal is higher than they would like. This deters them from using digital channels like Moncash. However, discussions with the bank clarified that this was a misunderstanding, as the interest payments on the loan were erroneously mistaken for withdrawal fees.

This case highlights the importance of uniform information and transparency in communicating charges and the total amount owed. To enhance customer satisfaction and prevent misunderstandings, service providers must prioritize transparent communication practices that enable clients to comprehend the various components of their financial obligations accurately. By establishing a framework of clear and accessible information, financial institutions can foster trust and strengthen the overall customer experience, especially in contexts where literacy levels may pose challenges.

Table 10: Summary of Barriers Across Both Customer Segments		
Barriers	Individual Loan	Village Banking
MonCash limit	Yes	No
Insufficient funds at MonCash points	Yes	Yes
Misconception on withdrawal fees	No	Yes

Enabling Factors and Barriers Influencing Channels Used for Repayment

The bank hypothesized that network failures were one of the core issues influencing the low uptake of MonCash for loan repayments. We found this to be a concern expressed by customers. However, discussions with the clients revealed other factors driving (non)usage of MonCash for repayment. Some of these factors are similar to those encountered at the disbursement stage.

Enablers of Digital Tools for Loan Repayment

Customers in both segments were not fully informed they could make repayments using MonCash. However, the administrative data indicates that a significant proportion of clients who use MonCash to repay later go back to cash payments, so awareness alone is not sufficient to enable the transition to digital services. For those informed, the three factors that encouraged MonCash use are convenient access to MonCash agents, a quicker repayment process, and agent support.

Convenient access to MonCash services

Clients in close proximity to MonCash operators found it easier to access MonCash services without having to travel long distances.

Quicker repayment process

Comparatively, clients found the repayment process using MonCash easier to perform as they avoided the long queues at the bank.

Loan officer support

Customers also reported the importance of the loan officers in enabling their use of Moncash to repay the loans. Clients who had a smooth process expressed how the process was made seamless through the help of the loan officer.

Barriers Hindering the Use of Digital Tools for Loan Repayment

There are behavioral factors that act as bottlenecks to adoption and usage of digital tools. By behavioral factors we mean various aspects of human behavior that can influence

individual choices, actions, and decision-making processes. In the qualitative study with the bank's customers, we identify key behavioral barriers that inhibit the adoption and continuous use of digital tools.

The main reason why the interviewed respondents make repayments at the bank is due to lack of awareness. The majority of respondents reported that they were provided with only one channel to make repayments - a bank visit. For the informed customers, transaction fees and low levels of trust are the biggest bottlenecks inhibiting adoption. We discuss these findings in the context of both customer segments.

Low level of awareness and customer agency

In the qualitative study, customers often lacked awareness that they could repay loans using MonCash. They relied on loan officers' instructions, which according to them, tended towards cash repayments. We could not speak with the loan officers to confirm this due to unforeseen issues.³¹ Nonetheless, this suggests limited agency on the part of the customers, despite the intentions from the bank to offer flexible repayment channels.

Low levels of agency can have detrimental effects on customers' decision-making regarding the adoption of digital tools. In a study in Mexico, Gine et al. (2014) utilize anonymous mystery shopping audits to show that low-income borrowers receive insufficient disclosure information and are rarely offered the most affordable or suitable products.

According to Brailovskaya et al. (2021), loans in Africa are commonly characterized as short-term and high-interest products facilitated through mobile money platforms. They highlighted the lack of transparency in loan terms, leading to limited consumer understanding of the terms and conditions associated with these loans. Although our study did not specifically explore loan officers' information disclosure practices, our findings align with the notion that customers, particularly those in groups, may have limited agency in selecting their preferred repayment channels.

Perceived high transaction costs and decision-making tendencies

A common worry among customers who opt for cash repayments is the perceived high transaction expenses tied to employing MonCash for loan transfers. This perception remains even though these fees are paid by the MFI. When deciding whether to use MonCash, customers tend to weigh the fees against the cost of visiting a bank. Some customers report that transaction fees exceed their transportation expenses. Similar to withdrawal fees, we observe a low level of awareness among the interviewed clients on the benefits provided by the MFI with respect to transaction fees.

Further, a review of MonCash's fees (refer to Table 1 in annex) on Digicel's website³² reveals that transfer fees range from 0-120 HTG (or 0 to 0.86 dollars), depending on the amount paid. This equates to approximately 0-0.16% of the total transaction amount for

³¹ The loan officers were unavailable due to plans by the bank to shut down operations.

³² <https://www.digicelgroup.com/ht/fr/moncash/customer.html>

peer-to-peer (p2p) transactions. A rough estimate indicates that the average individual loan client would have to pay between HTG 60-75 (0.43 - 0.54 dollars³³) monthly in transaction fees. This is below our calculated branch visit costs, which range from HTG 200 to HTG 1000. In sum, even if the MFI was not covering the transaction costs, an average customer would save money opting for MonCash repayment instead of visiting a branch.

The lack of awareness about the cost savings reinforces the importance of clear communication on loan terms, including the benefits of using MonCash over other non-digital alternatives.

Low trust in digital products relative to cash

Among our respondents, there is a higher level of trust in making repayments through cash. Despite the inherent barriers associated with cash payments, customers prefer this channel due to their confidence in the system. This belief is fostered through in-person interactions that provide reassurance regarding the successful receipt of repayment. Notably, credibility enhancing displays play a crucial role in building trust in a process or system. One example of such displays is the provision of signed receipts to customers who visit the bank, which serves as tangible evidence of their successful repayment. However, similar assurances are currently lacking for digital repayments in this particular context.

Furthermore, other factors such as irregular mobile network service have contributed to low trust in using digital tools for paying expenses deemed significant. During interviews, some clients expressed a general lack of trust in digital tools due to past negative experiences, while others cited irrational fears of sending funds to the wrong recipient. These factors collectively undermine trust in digital financial services.

To promote increased digital adoption, service providers need to proactively address these concerns and design digital tools that alleviate both rational and irrational fears experienced by customers. By incorporating credibility enhancing displays and implementing measures that enhance trust, financial service providers can cultivate confidence in their digital products and encourage broader adoption among their target audience.

6.2 Data Limitations

- The qualitative data was collected in two locations with different characteristics. However, the customer's experiences in the other locations may differ from those in Cap Haitien and Carrefour.
- The loan officers were not interviewed; therefore, we were unable to validate some of the reports shared by clients on the onboarding experience and identify gaps in their service delivery.

³³ The exchange rate here was about HTG 165 = US\$1.

7. Recommendations: Strategies to Overcome Barriers

To address the barriers that inhibit the adoption of digital tools in low-income and fragile settings, MFIs and other stakeholders need to employ concerted efforts to tackle recurrent structural and behavioral issues. To this end, we propose the following strategies:

Improve agent network allocation for better service experience

Agents are central to the delivery of digital tools, especially in rural settings with limited enabling infrastructure. MFIs, like our partner in Haiti, often use third-party tools (e.g., mobile money services) to provide access to credit. As a result, meeting end users' demands for affordability, availability, convenience, and reliability becomes a complex task, further compounded by insufficient agent coverage. Addressing this challenge demands substantial collaboration among stakeholders to align with customer expectations.

Bersudskaya and McCaffrey (2017) report that in mature markets, a healthy ratio of active customer to active agent outlets for mobile money services can range from 80-150. In Cap Haitien and Carrefour the figure is much higher at 893 and 603, respectively. In other locations where the bank is operational, these values are lower, and they tend to have higher MonCash use. This implies that the agent network across locations is not optimal. While the recommended customer to agent ratio is highly contextual, these values for the MFI in Haiti are much higher than those in relatively more mature markets like Kenya, Tanzania, and Bangladesh. As Wieser et al (2019) contend, rolling out agents is not sufficient to drive improved mobile money use. It should be combined with other interventions. We provide two recommendations for MFIs in low-resource settings to consider when managing their agent network.

- **Build agent network in cost effective ways** - As Jack and Suri (2014) note, the growth of the biggest mobile payment product, M-PESA in Kenya, was partly due to the rapid expansion of its agent network. However, MFIs depend on mobile money providers, therefore, they cannot directly increase coverage. A potential solution is for MFIs to support their customers in becoming agents. For instance, a large portion of the Haitian MFI's individual loan clients engage in small business operations. MFIs can support customers with the right incentives to become mobile money agents. In the past, the MFI has facilitated this by granting individual loan clients lines of credit to act as MonCash sub-agents.
- **Allocate scarce agents using geospatial mapping** - In addition to increasing agents through customer recruitment, effective agent allocation can be achieved using GIS mapping. Geospatial mapping refers to the process of using geographical data and technology to analyze geographic patterns and make informed decisions based on spatial relationships. MFIs could potentially employ mapping to enhance the allocation of mobile money agents. Geospatial mapping allows MFIs to analyze

the distribution of potential customers using transaction data, population density, and other relevant factors. By identifying areas with high consumer volumes and potential user demand, banks can strategically place mobile money agents in locations where they are most likely to serve customers and generate revenue. Furthermore, banks are able to better direct liquidity to these locations.

- **Support float financing** - Liquidity constraints are a common challenge for small business owners and operators, particularly those who manage Cash-In, Cash-Out (CICO) operations. These constraints can become damaging even when other conditions are favorable. For example, in several mature mobile money markets in Sub-Saharan Africa, merchants often lack sufficient digital currency to offer mobile money in exchange for cash. To address this issue, multiple financial service providers are offering timely credit facilities. These credit lines empower agents to better adapt to unexpected demand fluctuations and accommodate large transactions that would otherwise skew their anticipated mobile money reserves. Research by CGAP, Rothe and Flow (2020) demonstrated the role such a service played during the COVID-19 crisis, when economic conditions were especially difficult in Uganda.³⁴ The product played a pivotal role in facilitating transactions among active agents, for the benefit of both merchants and their customers.

Emphasize the key value propositions of switching from cash to digital transactions

The study demonstrates that low-income clients are sensitive to the fees linked with MonCash withdrawals and repayments. In addressing concerns about perceived higher transaction costs, MFIs should focus on educating clients to better evaluate the cost-benefit dynamics of utilizing digital tools. In the context of our partner MFI in Haiti, there is mistrust on how these fees are covered. These misconceptions can be corrected through effective communication using 'FAQs' that outline the benefits of using digital banking tools. It is important to correct the misconception as the costs from using digital tools are salient while the costs from cash disbursements (loss of income, time) are often imperceptible. In Haiti and other markets, key value propositions to highlight would typically include:

- **Cost-effectiveness over time** - While transaction fees can be a deterrent, the cost of handling, transporting, and storing physical cash also has its costs, which could be higher in the long-term. In a study with M-PESA users, Jack and Suri (2014) show that reduced transaction costs in digital mobile money increases a household's ability to share risks in the event of negative shocks. Making this reduced cost more obvious can improve continuous use.
- **Security** - During periods of political or other kinds of instability, the safety and security features of digital transactions become even more crucial. Carrying cash not only poses a risk for individuals but also for small business operators who may hold higher amounts. Digital transactions minimize this risk by reducing the need

³⁴ [Instant Liquidity Support for Mobile Money Agents | Blog | FinDev Gateway](#)

to carry or store large sums of money physically. Furthermore, digital transactions offer encrypted security measures to protect against fraud, providing an additional layer of safety not available with cash transactions. In volatile environments, the assurance that money is safely stored in a digital wallet can provide a sense of security that is otherwise difficult to come by.

Identify quick wins to build client trust in digital products

The qualitative analysis shows that low trust is a barrier preventing adoption of digital tools. In low-income fragile settings, cash transactions are often perceived as reliable and secure due to the tangible nature of physical currency and the immediate confirmation of successful transactions. Mimicking these features in digital financial services can help alleviate customer concerns and build trust. For example, MFIs can introduce credibility-enhancing displays in the digital transaction process. This may include sending SMS notifications confirming successful transactions, providing digital receipts, or displaying transaction summaries on the user's device. These features mimic the tangible evidence and immediate confirmation that cash transactions offer, instilling a sense of trust in the digital channel.

Improve information disclosure practices

Transparency in digital financial services is not just a regulatory requirement but also a strategic imperative, particularly in environments where the concept of digital finance is still evolving. Clear and concise disclosures are critical for two key reasons: firstly, they enhance customer trust, and secondly, they serve as effective onboarding tools that help users understand the value proposition of the service. Below are the key domains that often feature in the discourse of transparency of information:

- **Quantity of disclosures** - When it comes to the amount of information provided, less is often more. Customers are unlikely to read through lengthy legal jargon, no matter how crucial the information may be. Therefore, simplifying and condensing terms and conditions into easily digestible bullet points or infographics can improve understanding. For example, rather than a long contract, a one-page summary outlining the key fees, risks, and steps for conflict resolution could be more effective.
- **Accessibility across channels** - Accessibility is another crucial aspect. Information should be easy to find, read, and understand, even for individuals who are not tech-savvy. For instance, a simple, easily located 'FAQ' or 'Help' button within an app or on a website can guide users to essential information. Additionally, using local languages and culturally relevant illustrations can further aid understanding. In the Haitian MFI's case, pamphlets in Creole would be effective in communicating the loan terms to the clients.
- **Timing of disclosures** - The timing of information delivery is equally important. Providing users with the right information just before they make a significant decision can empower them to optimize their use of the service. For example, offering a brief, real-time comparison of transaction fees before a user sends

money cross-border can help them make an informed choice and build trust in the service.

Streamlining the role and performance of agents

In nascent digital finance ecosystems, such as in Haiti, the role of agents is often pivotal for the adoption and smooth operation of digital transactions. However, the principal-agent problem can manifest in unique and less than ideal ways in this context. Agents, who serve as intermediaries between the financial service provider and the end-users, sometimes disseminate inaccurate or misleading information. This could be due to gaps in training content and processes, incentives to boost transaction volumes, or even intentional agent malpractice for short-term gains. Such behavior significantly erodes consumer trust, which is already fragile in emerging digital finance landscapes.

Given the crucial role agents play in onboarding new users and facilitating transactions, addressing this issue is imperative for the sustainable growth of digital financial services. Financial providers must acknowledge the problem and implement consistent training, monitoring, and accountability measures for agents. This may include regular audits, customer feedback loops, and the establishment of a clear code of conduct.

8. Conclusion

In conclusion, this study employs both quantitative and qualitative analyses to delve into the factors shaping the acceptance of digital tools for financial services. This investigation was carried out among customers of an MFI in Haiti against the backdrop of a political crisis in the country. As a consequence, we could not test the proposed recommendations in practice. Nevertheless, the study yields insightful findings that hold significance for MFIs that are implementing digital tools in fragile environments.

Our study underscores the utility of digital tools for MFIs navigating challenging landscapes to serve underserved clientele. However, the effectiveness of adoption is hindered by structural barriers, encompassing issues of network connectivity, sparse agent distribution, agent liquidity and management, and misunderstandings about fees. Behavioral factors also come into play, influencing customer decision-making. Key among these factors is limited awareness of digital tools and their associated benefits, low trust, perceived high transaction costs, and restricted agency in selecting preferred channels for disbursement and repayment.

The effective allocation and management of agents is critically important for MFIs, ensuring their reliability as withdrawal and repayment channels. We propose innovative strategies to achieve this, such as engaging individual loan clients as agents or leveraging geospatial mapping to optimize the allocation of scarce agents. Establishing client trust emerges as another imperative. To achieve this, presenting loan agreements in comprehensible formats holds significance. Moreover, incorporating elements that imbue digital transactions with trustworthiness can enhance confidence in digital tools.

Furthermore, MFIs should aid client decision making when assessing repayment fees. The research shows that there are potential cost savings from opting for digital tools, but clients do not consider this when making decisions, even though the repayment fees are subsidized. In essence, our study underscores that while digital tools hold promise for MFIs in challenging contexts, a multifaceted approach encompassing agent management, client trust-building, and tailored implementation strategies is imperative for their successful integration.

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Annex

Annex Table 1: MonCash Withdrawal and Transaction Rates

Range	Transfer to MonCash account (HTG)	Withdrawal (HTG)
20-99	Free	
100-249	Free	
250-499	6	13
500-999	9	30
1,000-1,999	25	60
2,000 - 3,999	35	105
4,000- 7,999	50	171
8,000 - 11,999	60	247
12,000 - 19,999	70	366
20,000 - 39,999	75	629
40,000 - 59,999	100	1011
60,000 - 75,000	120	1368

Note: Retrieved from Digicel's website on July 5, 2023