# Digitizing Savings Groups in Tanzania

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Final Draft – pre-publication version

July 2020

Glossary of Terms

| | |
|---|---|
| BD | Born Digital |
| CF | Community Facilitator |
| DSL | DreamStart Labs |
| ICRW | International Center for Research on Women |
| LMIC | Low and Middle Income Country |
| PCI | Project Concern International, A Global Communities Partner |
| PTD | Paper-to-Digital |
| ROSCA | Rotating Saving and Credit Association |
| SHG | Self Help Group |
| WE | Women Empowered |
| VSLA | Village Savings and Loan Association |

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# Executive Summary

Digital financial services reach men and women where they live, work, and play, bringing banking services to customers – leaping over the last mile problem. However, for many low-income people, particularly women, these services remain out of reach for a variety of reasons such as literacy, geography, and social norms. Many low-income people participate in informal savings groups, which provide critical access to financial services for millions globally. They also provide a context within which to introduce digital financial inclusion tools more widely. Digitizing savings groups – that is, the use of mobile technology to provide support, access to formal accounts, or information to members – holds the promise to improve members' experience and reduce meeting time and errors in record-keeping. This research provides some of the first insights into these possibilities among savings groups. It also offers an opportunity to examine the ways in which mobile phones can be used to bring the benefits of digitization to a group as a whole, rather than to members individually, but also the disadvantages of this group-based strategy.

Project Concern International (PCI), a Global Communities Partner, DreamStart Labs, and the International Center for Research on Women (ICRW) conducted a pilot test of DreamSave, a digital savings ledger designed by DreamStart Labs, among 13 savings groups in the Mara region of rural Tanzania. PCI selected six existing savings groups ("paper-to-digital") and created seven new groups ("born digital") with whom to test the app. Groups used DreamSave to conduct group savings activities for eight months, from August 2019 through February 2020. For the purposes of this pilot, PCI provided each group with a smartphone to mitigate any bias from only working with groups that had access to a group smartphone. For a vast majority of members, this was the first time they had ever used a smartphone.

Prior to this evaluation, we established the following hypotheses:

- Digital ledgers will positively impact time and resources needed to train groups as well as time spent on group transactions, and reduce errors in record-keeping;
- Digital ledgers will increase financial capability and savings activity of group members;
- Group trust and cohesion will, at minimum, remain the same for established groups that were already using paper ledgers;
- Digitization will not negatively impact establishing social cohesion and trust among new groups;
- Digital ledgers will positively impact paper-to-digital and born digital group members' use, skill level, and confidence with digital technology, both in and outside the groups.

## Summary of Key Findings:

- By automating calculations for loan repayments, fines, and savings balances, DreamSave reduced time spent on financial transactions from 2.5-3 hours to 30-60 minutes. Members from both paper-to-digital and born digital groups reported positive feedback on the time savings.
- Group cohesion, a critical element to savings groups, remained the same for existing groups. And for new groups, the introduction of a digital ledger did not prevent groups from forming bonds – they report strong levels of group cohesion. One born digital community facilitator said that his groups' members "love each other".

- DreamSave uses savings goals and SMS reminders to encourage savings contributions and loan repayments. At baseline, members were asked about their financial capability – if they were saving for something specific, if they knew how much they needed to save for that goal, and whether they knew how much they had saved at that time. Both existing groups and new groups reported endline results of nearly 100 percent on all three of these financial behaviors. This is a significant increase from baseline numbers in both group types and among men and women. Women in new groups and existing groups reported a 50 percent and 70 percent increase, respectively, on knowing how much they needed to save for a specific goal.
    - The SMS reminders increased group discipline. Qualitative interviews revealed that members of both group types increased on-time loan repayments and interest payments as a result of receiving SMS reminders. In fact, DreamSave app data revealed that members made loan repayments faster than their repayments schedule. A quarter of paper-to-digital groups and half of born digital groups' loans were repaid before the due date.
- Conflict among savings group members about routine topics like bookkeeping or by-laws went down considerably for existing groups. Sixty percent of women in existing groups reported frequent or somewhat frequent conflicts about bookkeeping at baseline. By endline the rate of conflicts among existing groups decreased by 63 percent.
- The DreamSave app was designed to replace the paper ledger and be used primarily by a digital bookkeeper. However, the introduction of a group smartphone into these groups increased group member's curiosity about using a smartphone. Members from both existing and new groups reported spending time outside of their savings groups to understand and learn how to navigate both the phone and the app. Implementers may be able to seize this enthusiasm to more broadly encourage and increase digital literacy and capability.

In addition to these key findings around the studies' main hypotheses, additional learnings emerged around the implications and potential unintended consequences of digitization. Women face systematic barriers to accessing and owning mobile technology, which makes them less likely to gravitate toward a digital savings ledger and more likely to need extra time to gain confidence with the technology and their skill level.

- Age demographics of existing groups and new groups show differences between members of existing groups and new groups. Members of newly created groups tended to be younger than those in existing groups, particularly female members.
- Women were far less comfortable using the smartphone than men. A number of groups elected female digital bookkeepers. However, the shift away from paper ledgers – familiar and easily verifiable – to an app on a smartphone created uncertainty for some female members. This is due to the fact that very few of them had ever interacted with a smartphone prior to the pilot as well as the fact that this shift to digital changed the perception of who had access to and ownership of the group ledger. Some women reported they were afraid to even touch the phone and many men reported that women were slower to learn and understand how the app worked than they were. A shift in perceived ownership of the groups' savings data is important for implementers to manage as they move toward digitization.
- Prior to this pilot, members of PCI's Women Empowered (WE) savings groups were known to keep hand-written notes of their personal and group financial transactions. It is not surprising,

then, that many group members continued to keep their own records during the pilot: nearly 80 percent of men and women in both existing and new groups kept personal hand-written records of their transactions at endline. About 40 percent of members kept track of group transactions. What was surprising was that newly formed groups asked to be trained to use paper ledgers in the middle of this pilot – they had only been trained to use the digital ledger. In addition, a few groups in the paper-to-digital cohort and one born digital group used hand-written and hand-calculated paper ledgers during some of the pilot. This speaks largely to the shift to a digital ledger on a smartphone – despite community facilitators and digital bookkeepers being trained on how to use the app, they and group members were unfamiliar with how smartphones function. Early app updates and other related issues added to some members' desire to keep their own personal records and group ledgers.

- Further investment is needed in training community facilitators, digital bookkeepers, and even group members on how to use the digital app as well as how to navigate the smartphone technology. Groups experienced a number of challenges that might have been mitigated by more investment in training and more familiarity with smartphones.

## Financial and Digital Inclusion

Two billion adults are excluded from formal financial services.[1] This is most acute among low-income populations in low- and middle-income countries. Including people in the formal economy is a critical contribution to poverty reduction, tackling inequality, and fostering inclusive growth.[2] Financial inclusion is the establishment and expansion of tools and systems that enable historically excluded low-income people to access financial products and services in order to navigate the vulnerabilities and volatility of poverty. Financial inclusion ensures access to adequate and affordable financial products and services for all – including marginalized groups – provided in a fair and transparent manner by financial institutions.

For low-income women, financial inclusion offers an opportunity to upend entrenched gender inequalities by entering spheres from which they have been otherwise excluded. Women who have access to bank accounts, savings mechanisms, and other financial services may be better able to control their earnings and undertake personal and productive expenditures.[3] They may also be able to make more choices about how they use their time, whether for employment, leisure, income-generating activities, or education.[4] They may have more substantive autonomy over their lives and are able to make decisions ranging from employment and marriage to whether to use contraception.[5] They may be better able to grow their businesses, to choose where and how to work and to raise their productivity and earnings and reduce their chances of being poor.[6] They may also have more options to leave abusive relationships and experience reduced exposure to intimate partner violence.[7]

However, a gender gap in bank account ownership has persisted over the past decade, even as overall account ownership has risen. Globally, 65 percent of women hold accounts, compared to 72 percent of men, with the gap widening in certain developing countries.[8] This is the result of both legal restrictions on women's account ownership, control of financial assets and accounts as well as gender norms that limit their mobility, access to information, and personal resources.

One mechanism widely used to address this gap is digital technology and mobile phones. Mobile phones provide a distinct opportunity to reach individuals where they live – leaping over the last mile problem[9]. Recent research shows that 80 percent of women across low- and middle-income countries (LMICs) have mobile phones and almost half of these women use mobile internet.[10] The use of mobile phones beyond basic voice or SMS is important – the mobile internet brings new sources of information as well as opportunities for livelihoods beyond ones marketplace or village. However, here, too, we find a persistent gender gap in ownership – women are about 10 percent less likely than men to own a mobile

[1] Global Findex 2018

[2] UNCDF

[3] Islam, Ahmed, and Alam 2014; Ashraf et al. 2010

[4] Aker et al. 2016; Field et al. 2016

[5] Aker et al. 2016; Holloway, Niazi, and Rouse 2017; Suri and Jack 2016

[6] Field et al. 2016

[7] Garikipati 2008; Panda 2014

[8] Global Findex 2018

[9] The last mile problem refers to the challenges in delivery of goods and services to the very end of the supply chain – in both rural and urban areas.

[10] GSMA The Mobile Gender Gap Report 2019.

phone and the gender gap in mobile internet access in Sub-Saharan Africa is 41 percent.[11] In Tanzania, a mere 17 percent of women use the mobile internet, compared to 35 percent of men. Among the top barriers to phone ownership among women in LMICs is relevance; non-owners may not see the value in owning a phone, even if they can afford it. In sub-Saharan Africa, affordability is the number one barrier to phone ownership and the number two barrier to internet access (number one being literacy).[12]

### Savings Groups

Known by many different names (Village Savings and Loan Associations (VSLAs), Rotating Saving and Credit Associations (ROSCAs), and Self-Help Groups (SHGs)), informal community-based savings groups exist around the globe, offering people a place to securely save their money and access credit.

Savings groups are an effective means of reaching the unbanked and rural poor. For many low-income women (and men), savings groups provide structured access to informal credit, savings, and to building financial knowledge and capability. The groups' dynamics and social capital can be a cornerstone of their success and longevity, as well as building member's self-reliance, empowerment, and resilience to economic and other shocks for millions of vulnerable people worldwide, especially women.

Savings groups provide a context within which to introduce digital financial inclusion tools more widely. Digitizing savings groups – that is, the use of mobile technology to provide support, access to formal accounts, or information to members – can improve members' experience and reduce meeting time and errors in record-keeping. This research provides some of the first insights into these possibilities among savings groups. It also offers an opportunity to examine the ways in which mobile phones can be used to bring the benefits of digitization to a group as a whole, rather than to members individually, but also the disadvantages of this group-based strategy.

## Project background

This research examines the impact of digitizing savings group in the Mara region of Tanzania. We test the impact of a mobile phone on group dynamics and whether a mobile app improves savings group functioning. The research examines whether a digital savings ledger impacts group meeting length, financial capability of each group member, trust, and social cohesion within the group. We also ask whether digital tools can improve the savings group experience when the group has access to only one smartphone. Who will embrace the technology and who will shun it? Will the group be a safe place for the tech-averse to gain confidence and experience with an unfamiliar technology? Will connectivity and affordability factors ultimately doom the experiment? And what can we say about individual group members' digital experience when only one group member regularly uses the phone?

**Study Methodology**

- 13 WE groups (n=298): 6 existing groups and 7 newly created groups
- Each group received a single smartphone and monthly data plan to cover the app for this pilot
- Study timeline: July 2019 – February 2020

[11] Ibid.
[12] Ibid.

Project Concern International (PCI), a Global Communities Partner, offers a savings group platform designed to empower women. Its Women Empowered (WE) methodology promotes skills building, self-esteem, access to information and resources, and community action that position women as confident decision-makers and leaders in their homes and communities. WE groups are made up of 10-25 members, 70% women on average in the Mara Region, who meet weekly to conduct their financial transactions and discuss community issues. As in all savings groups, WE groups elect members to serve in important roles within the group including the three key holders, the cashbox holder, two bookkeepers and one group representative. In addition to the elected positions, group members rotate through the role of the weekly meeting moderator, ensuring each member plays a role in the leadership of the group.

The research takes place among PCI's WE groups in rural northwestern Tanzania. PCI and DreamStart Labs purposely selected a population that would be difficult to reach and less familiar with smartphone technology to test what needs to ultimately be considered when digitizing rural savings groups. Embedded in this assumption is that rural WE members will tend to have lower education, lower literacy, the least experience with technology, the most issues with connectivity, and perhaps are more reluctant to switch to a digital ledger than their counterparts in urban and semi-urban areas. Further research is needed to test these assumptions.

DreamStart Labs, a financial technology firm, offers a smartphone app for savings groups called DreamSave. This app was designed to function in much the same way as a group's paper ledger – including entering group by-law rules such as loan terms, the ability to track each individual member's savings progress, outstanding loans, and any other fees or fines over the course of the savings cycle. DreamSave – which was designed in close collaboration with rural savings groups – also includes added features such as goal setting, tracking, automatic reminders, shareout projections, and automatic calculations (see screenshots in Annex 1 for context on app design and functionality). The app was designed to be used primarily by the group's bookkeeper, with other group members engaging via personalized SMS messages with meeting summaries, transaction receipts, and loan reminders. While DreamSave is currently in use across multiple countries in Africa and Asia, the groups in this study were among the first pilot users of the app early in its development process.

For this research, PCI provided a smartphone to each participating group in order to eliminate bias from working with only those groups who already had smartphones. The smartphone and app were used primarily by a digital bookkeeper who, like the paper ledger bookkeeper, managed group functions like taking roll as well as group financial transactions. These digital bookkeepers were selected by the group, and all had either previous experience as a paper bookkeeper in the group and/or were viewed by the group as having a comparatively high level of digital literacy. Individual members with a smartphone could view their individual financial records and practice using the app but could not access the group ledger or other members' records. Critical to DreamSave is that every group member has the option to enter a phone number in their profile, which is then used to send SMS messages to the member directly about their savings progress and goals and reminders on loan repayments. At baseline, around 90

percent of men and women had access to basic mobile phones.[13] Two-thirds of men and women at baseline had never used a smartphone prior to the pilot.

## Study Methodology

Going into this evaluation, we had the following hypotheses:

- Digital ledgers will positively impact time and resources needed to train groups as well as time spent on group transactions, and reduce errors in record-keeping;
- Digital ledgers will increase financial capability and savings activity of group members;
- Group trust and cohesion will, a minimum, remain the same for established groups that were already using paper ledgers;
- Digitization will not negatively impact establishing social cohesion and trust among new groups;
- Digital ledgers will positively impact PTD and BD group members' use, skill level, and confidence with digital technology, both in and outside the groups.

The DreamSave mobile app pilot ran between July 2019 through February 2020 with 13 groups in rural Tanzania. The pilot tested the app with two different types of groups: six established groups (known as "paper-to-digital"), that had been together for 1-4 years, and seven newly created groups (known as "born digital") that met for the first time at the beginning of this pilot. We chose to test the app this way to understand the ways group dynamics play in introducing and learning a new technology. We were interested in understanding whether the established group dynamics in paper-to-digital groups (PTD) provided a safe place for members with low levels of digital literacy to learn and become comfortable using the mobile phone. We were also curious if creating new groups that were willing to use exclusively digital ledgers would create the same levels of social cohesion and capital as the PTD groups.

This pilot initially aimed to test the app with 16 total groups – 8 PTD groups and 8 BD groups. All 16 groups participated in the baseline data collection, but only 13 groups participated in the full pilot and endline data collection. During the month between the administration of the baseline survey and the first group meeting, one BD group decided that they did not actually want to participate. This was related to a rumor in their community that this pilot was somehow associated with the Free Masons, a group that has a reputation in rural Tanzania of being technologically progressive but untrustworthy. This seemed to be an isolated incident as another group in this same community started using the app as scheduled and participated in the full pilot. In another community, two PTD groups decided to delay their first meeting with the app until one month prior to endline data collection. This was related both to their group shareout dates as well as civil unrest in the community that resulted in police restricting group gatherings and blocking access to the community. Because these two groups only had one month of experience using the app at the time of endline data collection, PCI decided to exclude them, but both PCI and DSL continue to provide them as-needed support in using the app during their group meetings.

[13] For this study, ICRW defines access as the ability to use the mobile phone whenever the user needed, without having to ask permission or wait for a household phone to be available to use.

*Participants demographics*

PCI reached 298 WE members from 13 WE groups in this pilot. ICRW's evaluation included 183 individuals at baseline and 234 at endline. ICRW also conducted qualitative data collection including seven key informant interviews with community facilitators of both PTD and BD groups and six focus group discussions with three groups of BD members and three of PTD members (total n=34).

Important to note: focus groups were made up of members from different groups so that individuals could speak freely about their experiences without fear that fellow members would share their opinions with the rest of the groups. Members of PTD groups were placed in three focus groups and members of BD groups were placed in three focus groups. For all six focus groups, members represented different groups and their different experiences.

Figure 1 and Figure 2 describe PTD and BD group members age categories at baseline.

Figure 1: BD Baseline

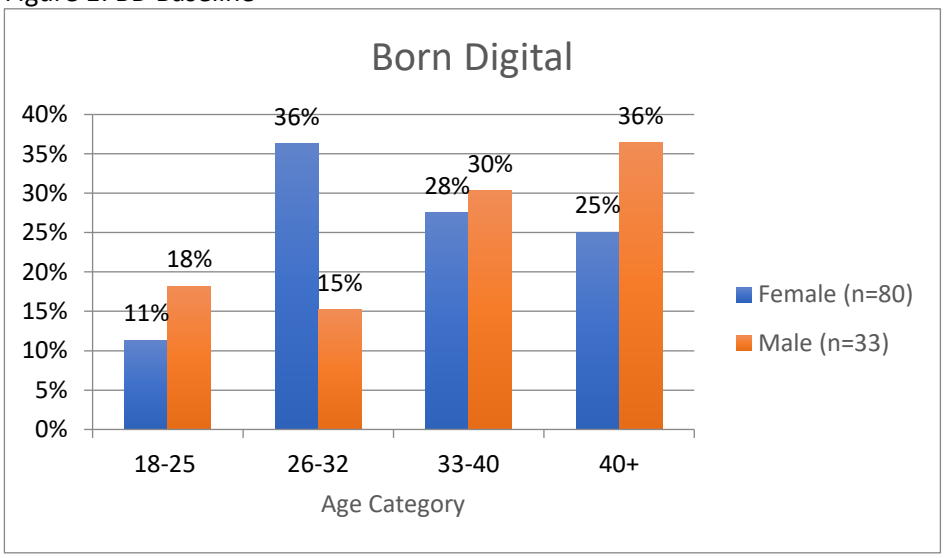
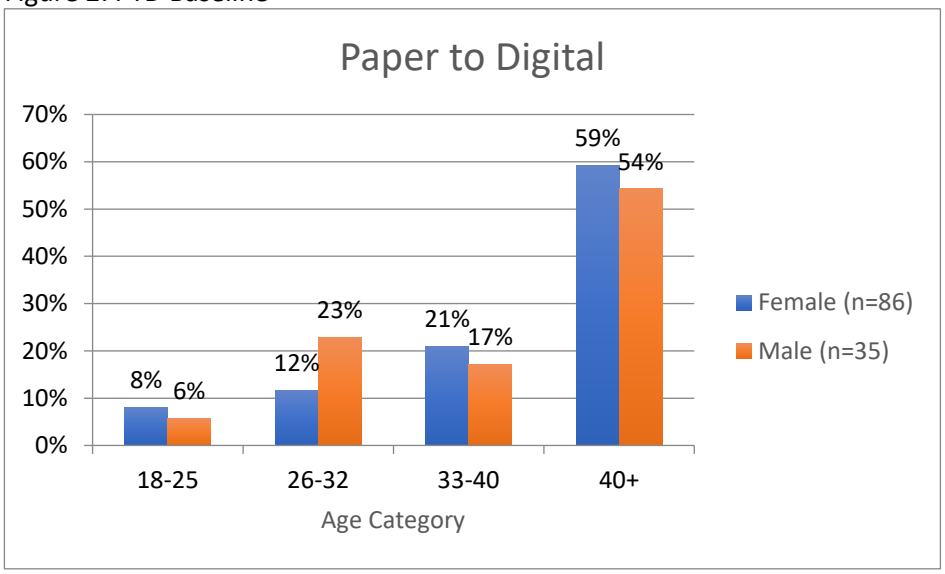


Figure 2: PTD Baseline




Demographics of PTD and BD groups were largely the same in terms of marital status (73 percent were married) and livelihoods (largest livelihoods were farming/fishing and informal shop vendors). The biggest difference was the fact that BD groups skew significantly younger. The pilot did not include an age requirement. On average, a majority of PCI's WE member's age range between 30-39. Looking at Figures 1 and 2, it is clear that a majority of women and men in the PTD groups are 40 years or older, older than the average PCI WE group member, whereas the largest age bracket among BD groups for women is between 26-32 years old.

Another explanation may be that younger women were more interested joining a digital savings group than older women. Recruitment for the digital savings groups was challenging. One community facilitator (CF) for BD groups reported that finding individuals to form a digital savings group took nearly twice as long as usual because when community members discovered they would be using a smartphone-based ledger some opted not to sign up. Their fears stemmed in part from a lack of understanding of digital technologies - they were worried they might lose their money using a phone – or they were skeptical of the fact that PCI was going to provide a smartphone. This same CF suggested future expansion of DreamSave in rural areas with limited technology exposure will require more robust community engagement prior to the pilot to address the larger questions of trust and level of experience with digital technology that informs a large part of the results of this evaluation.

## Mobile Phone Use in Rural Tanzania

A key component of this evaluation centered on the mobile technology itself. Given what is known about access to and usage of mobile technology among last mile populations, particularly low-income women, it was important to assess members' access to and use of mobile technology as well as what happened when these groups were provided with a smartphone. For most, it was their first time ever seeing or interacting with one.

Figure 3: Mobile Phone Access by Group Type, number

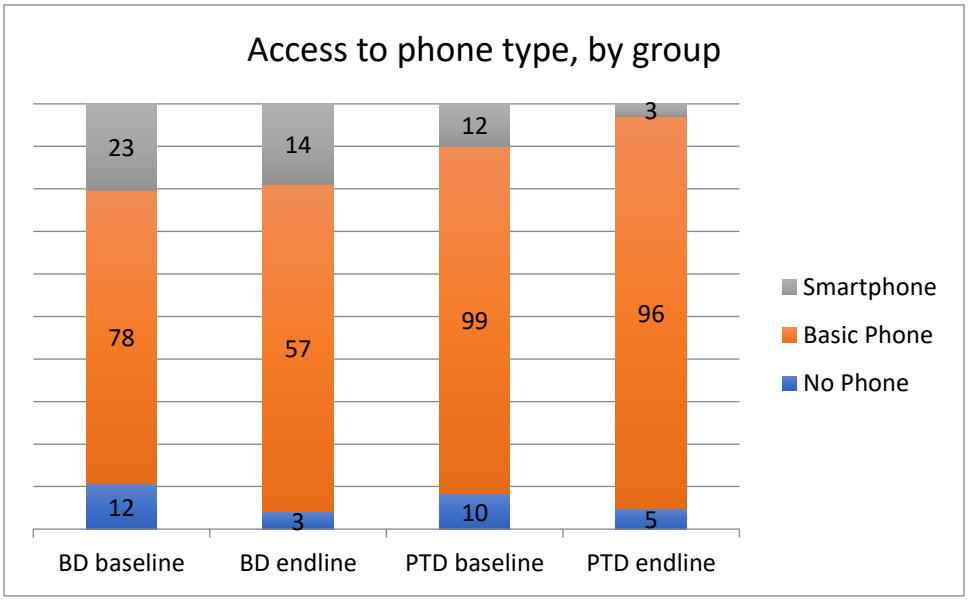
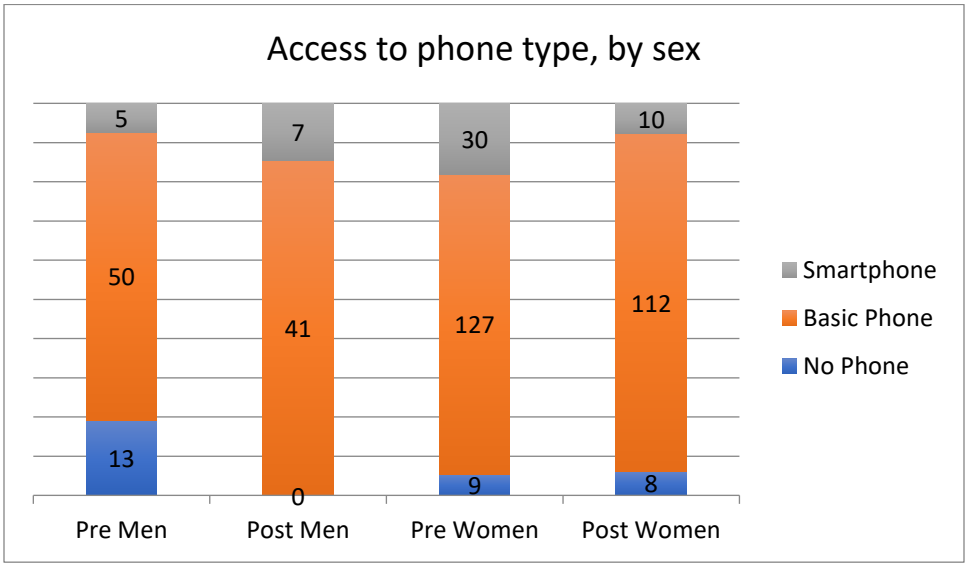



Figure 4: Mobile Phone Access by sex, number




Overall, a vast majority of both men and women at all ages had access to a basic phone, defined as being able to use a phone whenever they wanted to. What is clear from these figures is that phone access is variable; men and women experience phone churn – that is, turnover in mobile phone ownership due to a variety of reasons such as lost, broken, stolen, or sold – between baseline and endline. What we know from other digital savings group studies is that phone churn is common.[14] Mobile phones are an asset that can be sold quickly if cash is needed. So, while more men reported having no phone access at baseline and more women reported having smartphone access at baseline, it is difficult to draw any definitive conclusions about whether exposure to the smartphone in their groups

[14] Phillip Roessler et al. May 2018.

compelled or created an incentive for members to purchase phones. A few CFs mentioned they noticed more members with phones, but quantitatively ownership shows a mixed picture.

## Gender Dynamics of Phone Use Within Savings Groups

PCI's WE groups in this region of Tanzania are mixed gender. Figures 1 and 2 show that men make up 30 percent of both PTD and BD groups. As such, these savings groups afford the opportunity to examine the gender dynamics within groups among members and apply a gender lens to understanding the group's approach to and uptake of the smartphone. Specifically, we examine who used the smartphone, who gained confidence over the course of the pilot to navigate the app, who found uses for a mobile phone (basic or smart) outside of the digital savings ledger, and which members never acclimated to the digital ledger.

PCI's WE methodology focuses on empowering women economically through skill and livelihood building. Given the importance of savings groups for low-income unbanked women, understanding why some older women may have hesitated to join digital savings groups or learn how to use the smartphone is critical prior to moving beyond pilot stage. Qualitative data show that while many groups found ways to share the smartphone among members, members who were most comfortable handling the smartphone tended to be young men. Focus groups of both BD and PTD members said that, overall young, literate, tech-savvy men used the smartphone with ease and taught other members how to navigate the DreamSave app. A few of the BD groups had female digital bookkeepers, but most groups reported that young, literate men with prior mobile phone experience were either elected to be the primary digital bookkeeper and were the ones who ended up teaching less tech-savvy members how to navigate the phone.

One explanation for this varied experience could be due to the social dynamics and group operations of each WE group. Each group is unique, despite the fact that PCI provides the same training to all groups. Gaining familiarity with the DreamSave app – seeing what the app looked like, what the various features did, and especially gaining the opportunity to use the group phone – depended on the differences among group cultures. PCI encouraged groups to share the smartphone between group members, so each person had a chance to interact with the app. Some groups reported this happened. In these groups, members were asked to sit next to the digital bookkeeper and either observe what they did or have a chance to enter their own information into the app. However, in other groups, the digital bookkeeper was the only individual to interact with the smartphone, entering all the information as a paper ledger bookkeeper would, and locking the smartphone in the lockbox at the end of the meeting. Other groups would allow curious members to stay after the meeting to ask questions of a fellow member more familiar with the phone and app.

## Digital Confidence

Group members were asked to assess their groups' ability to use DreamSave at baseline and endline. At baseline, a majority of men and women in PTD groups were somewhat confident (63 percent) about their groups ability to use the app. Fully a quarter of women, however, were not confident about their group's ability. By endline about 60 percent of both men and women in PTD groups were very confident in their groups ability to use DreamSave.

BD groups were also asked to assess their group's ability to use DreamSave at both baseline and endline, even though they were newly formed at baseline. A majority (70 percent) said they were confident in their groups' ability to use the app. Only three women said they were not confident. Men were somewhat or very confident at baseline and slightly more than half were very confident or somewhat confident at endline. Surprisingly, three-quarters of women were somewhat confident in their group's ability to use DreamSave and a quarter were very confident. With similar numbers of women reporting as the PTD groups, these data may speak to the difference in the type of woman who would be drawn to joining a digital savings group versus the type of woman who already belongs to a paper ledger group.

Figure 6: Confidence in Group's Ability to use DreamSave, PTD

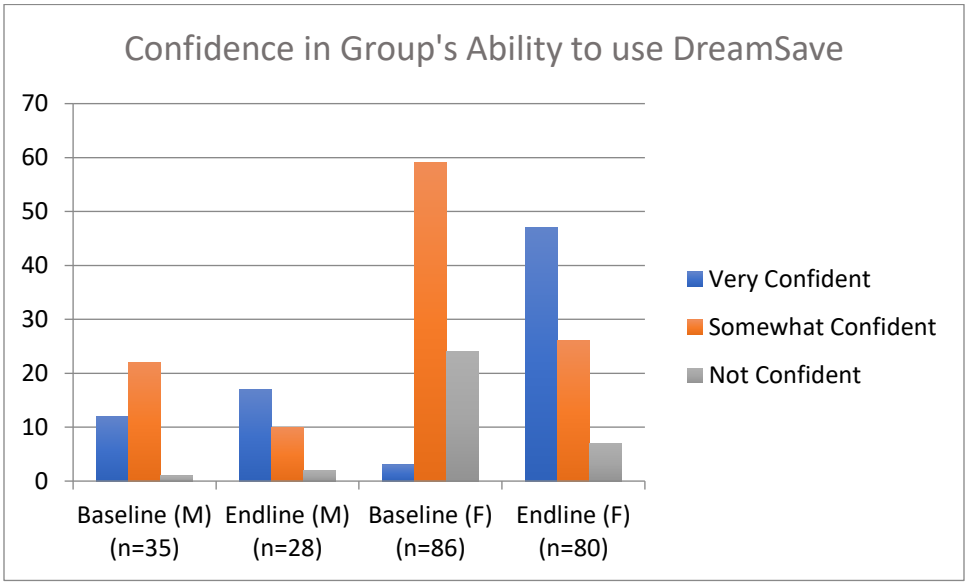
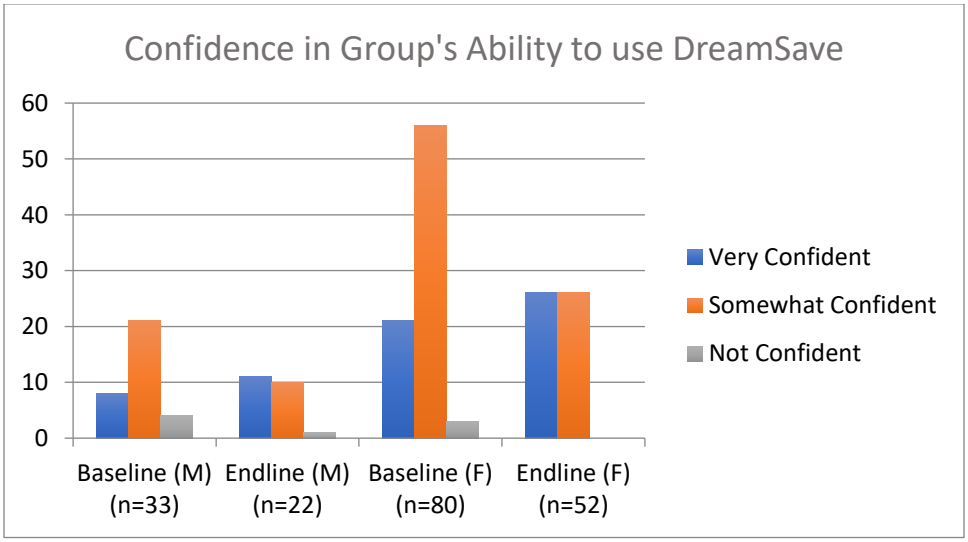



Figure 7: Confidence in Group's Ability to use DreamSave, BD

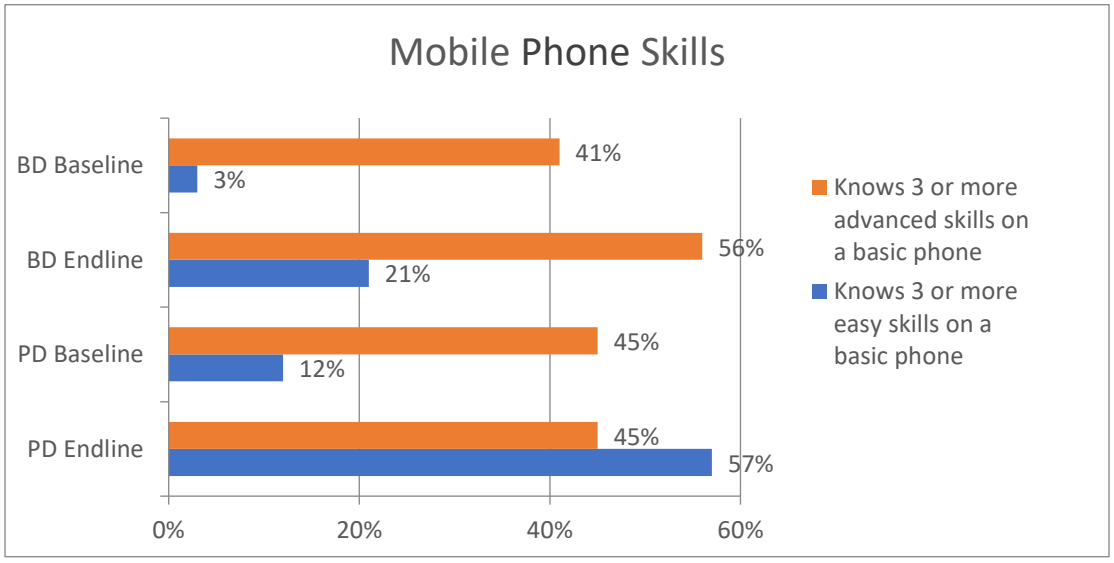



This study hypothesized that exposure to smartphone technology in a group setting – a safe space such as a savings group – would enable men and women without a history with smartphones to gain

confidence and curiosity with the technology. At endline members were asked if using DreamSave with their group made them curious about how else they could use smartphones outside of their digital savings groups. Half of women who had never used a smartphone before the pilot said they were somewhat curious and one-third said they were very curious. Over 60 percent of men said they were very curious.

Figure 5 shows the phone skill level among members of both group types. Individuals were asked what they were able to do on a phone – from start and end a call, take photos, or send an SMS and dial a phone number. Confidence in skills increased quite a bit (especially for the 'easy' skills). The categories were not mutually exclusive; there was no relationship between basic phone skills hypothesized to be easy/advanced at either baseline or endling. However, it is notable that individuals in BD and PTD groups reported increases in their skills between baseline and endline.

Figure 5: Basic Phone Skill Level




* Easy Skills: Start/end calls, listen to music, use flashlight, take photos; Advanced Skills: dial a phone number, send SMS, use mPesa, use calculator.

One way for curiosity to grow into confidence is through access to and use of the group smartphone. While the smartphone was used primarily by the digital bookkeeper, as stated above, groups set their own rules for when and how group members could interact with the app and phone. Group members were shown still images of DreamSave during qualitative interviews and asked about their opportunities to interact with the smartphones. Few female members were familiar with the app because they may not have been given the chance to see the ledger or may not have sought the chance to touch the phone due to lack of confidence. Men said women were slow to learn and nervous about navigating on a smartphone, even to hold it. Two different CFs described watching some women carry the smartphone "like an egg". Members of an all-male PTD focus group said that women, particularly those over 40 years old, do not "like to learn" how to use the smartphone, letting others navigate the app on their behalf. One BD CF said that when a female bookkeeper was seen entering information slowly in DreamSave, men in the group would yell things at her like, "You're keeping us here!" which discouraged and

intimidated her. The group eventually elected to have one male and one female bookkeeper because men were more confident with the phone.

Much like financial inclusion generally, digitizing savings groups can have unintended consequences. Women face systematic barriers to accessing and owning mobile technology, which makes them less likely to gravitate toward a digital savings ledger and more likely to need extra time to gain confidence with the technology and their skill level.

Further, women's access to and ownership of a mobile phone is critical information implementers must understand at the outset of digitization. A key – and popular – feature of DreamSave were the SMS reminders sent to individual member's phones. Members have the option to include a mobile phone number if they want to receive SMS messages with personalized meeting summaries, transaction receipts, and loan reminders (see Annex 1, Figure 13). While these SMS messages are optional and the app explains that personal financial information will be sent to these numbers if they activate that feature, these implications were not well communicated and explained during training. For women whose primary phone was a shared household phone, the risk of entering this number was not well understood. These women did not anticipate their husbands' receiving their savings information, and when it came time for shareout this posed a problem. When one woman asked the bookkeeper to stop sending the messages to her husband, the husband received an SMS telling him that the notifications had been turned off and he became angry. It is common for women to save privately, away from their husbands and other household members. Further training is needed to prevent such unintended consequences in the future.

Even if the app is very clear about the implications of turning on the SMS notification feature, if the implementing partner simply enters a phone number and checks a box without explaining the option to the member, she will not understand what she has agreed to until she begins receiving notifications on her phone. PCI's CF were trained to allow the member to enter their own information into the app, but more reminders are necessary. One of the key takeaways for savings group practitioners is that trainers need to be careful to educate members during setup of a new digital app so all members are aware of the settings and can make their own choices.

## Key Findings: Paper-to-digital Groups

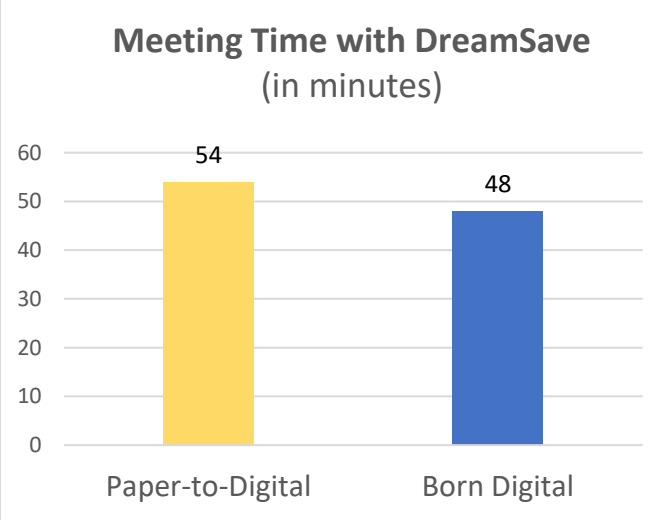
Since PTD groups existed prior to the pilot, we were able to collect robust baseline data on their existing group meeting dynamics, group cohesion, financial capability, and experience with mobile technology. Below we outline the pilot results on these groups.

### Overall Reduction in Time Spent in Group Meetings

Part of this pilot was to understand the impact of DreamSave on group on-boarding and meeting length. Prior to DreamSave, PCI WE groups typically took between six and 12 months to train and onboard with ongoing refresher training, and pre-pilot group meetings were estimated to range between one and a half to two hours, sometimes longer. This is not unique to PCI groups – savings groups in general are lengthy and time-intensive engagements. Calculating financial transactions for a group of 15-25 people by hand takes a long time. Time spent together helps build the group cohesion that contributes to the longevity of savings groups, but it is also an enormous time commitment for participants.

After moving to DreamSave, the time spent conducting meeting transactions became a quantifiable datapoint since the app time stamps each transaction. Figure 8 shows data generated from the DreamSave app on the average meeting time over the full length of the pilot study for both PTD and BD groups. For the PTD groups, the time between logging into the app and closing the meeting was reduced significantly to an average of 54 minutes. BD groups, discussed more in the next section, met for an average of 48 minutes.

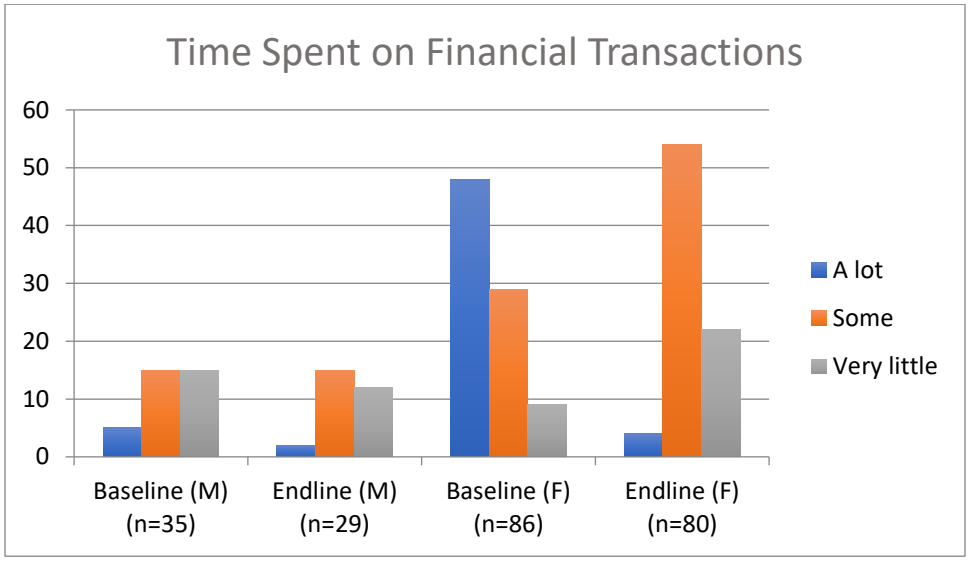
Figure 8: Average Meeting Time using DreamSave




**Quantitative survey data reveals a significant shift in perception of time spent on financial transactions baseline to endline**. Figure 9 shows a decrease in amount of time spent on financial transactions during meetings. Individuals were asked to assess the amount of time they spent using a Likert scale of a lot, some, or very little time. Both men and women report experiencing less group time spent on financial transactions by endline. Women reportedly spent a lot of time on financial transactions prior to the pilot – this makes sense since they had been using paper ledgers up to this

point. By endline, over half of PTD women reported spending some time and a quarter report spending very little time. Men's experience differs slightly, with most men reporting they spend some time on financial transactions at both baseline and endline.

Figure 9: Time Spent on Financial Transactions among PTD Groups, number




To further understand the impact using DreamSave had on group meeting length, every focus group was asked how their WE groups spent time during an average meeting over the course of the pilot. Participants were asked to place rocks in six "buckets" that represented what a typical pilot group might spend time on during the course of their meetings. They were asked to place rocks in the buckets to represent an average meeting – the higher number of rocks, the more time spent on that activity. They were then asked to move the rocks to represent their most recent meeting to demonstrate any change between the two. A majority of focus groups changed the constellation of rocks in the buckets.

> *"DreamSave takes less time than a paper ledger." – PTD group member*

Table 1: Time Buckets Used in Focus Groups

| Time Buckets | Definition |
|---|---|
| Learning to use DreamSave | Time spent understanding how the DreamSave app worked, where to enter data, and where to find their personal savings information. |
| Problem-solving DreamSave | Time spent trouble-shooting various aspects of the app, either due to a recent update to the app or looking for a work-around when DreamSave doesn't allow group members to record certain group-specific activities. |
| Asking questions to the CFs about DreamSave | Time spent learning and understanding DreamSave with CFs. |
| Financial transactions | Time spent contributing to their savings or repaying their loans. |
| Socializing with friends | Time spent catching up with their group members, talking about non-savings group topics. |
| Other | Any other time spent when together as a group that is unaccounted for in the five previous buckets. |

Table 2 shows qualitative results on how groups arranged the rocks to represent an average group meeting as well as their most recent meeting. The results show that most PTD groups experience time reduction of group meetings. Two of the focus groups rearranged the rocks – moving them to demonstrate that their most recent meeting was primarily focused on financial transactions. The third focus group showed no change, though a few members were part of a group that had lost their smartphone early on in the pilot, which may have impacted their experience.

Table 2: Qualitative Results for PTD Groups on Time Spent in Meetings

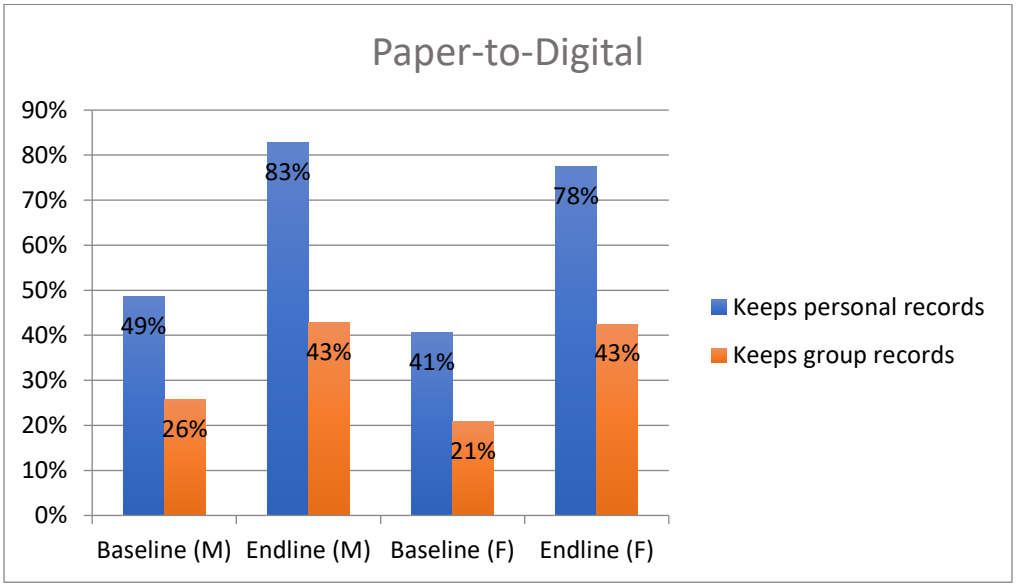
| | Average Meeting Time | Most Recent Meeting Time |
|---|---|---|
| PTD focus group 1 (n=6) | Most rocks: financial transactions; Least rocks: problem-solving DreamSave, questions about DreamSave, socializing. | Most rocks: financial transaction; the other buckets had two rocks each. |
| PTD focus group 2 (n=6) | Most rocks: problem solving and socializing; Least rocks: learning to use DreamSave and financial transactions | Most rocks: Financial transactions and problem-solving DreamSave. |
| PTD focus group 3 (n=6) | Most rocks: financial transactions and learning to use DreamSave | No new distribution. |

That the groups reported they spent most of their time on financial transactions during their meetings is not surprising given that this is their primary purpose. As one member said, the financial transactions are why they are there; it is what binds them.

## Paper (gone but not forgotten)

Despite the introduction of the smartphone and the digital ledger, PTD groups continued using a paper ledger throughout the pilot. Since DreamSave was a new technology and a majority of members were new to smartphones, PTD groups felt more comfortable using paper ledgers alongside DS to keep track of their group transactions, and some members continued to keep their own personal written records of their transactions and their groups' transactions. Prior to the pilot, PTD group members reported keeping their own records and records of group transactions. Figure 10 below compares men and women who kept personal as well as group record keeping at baseline and endline. The figure shows increases among men and women who keep personal as well as group results. This is likely due to the reported errors in DS from early in the pilot.

Figure 10: PTD members who keep records, by sex




The qualitative data allowed us to investigate why these groups reported reduced meeting time while maintaining group paper ledgers as well as personal records. All groups could see that the automated calculations saved a lot of time. However, app updates during the first few months of the pilot drove many individuals to keep hand-written notes and some groups to continue to use paper ledgers for group records.

- Members of one focus group said that their group meetings are shorter even though they still use a paper ledger because they use DreamSave to do the calculations and then write down what DreamSave says into the paper ledger. This saves time because they no longer do the calculations by hand.
- Members of another focus group said that their groups use both the paper ledger and DreamSave because they feel comfortable having a copy of their records on paper. Literacy is not an issue but DreamSave is new and unfamiliar.
    - Other members said that in their group the paper bookkeeper brings the smartphone home with him after the group meeting to fill out the ledger. While doing this he also

fills out members personal ledgers and brings them to the next group meeting. This is a violation of the group procedures and PCI group training.

- Some members said that while their trust in DreamSave has increased over time – for example, they no longer worry that DreamSave will lose their information – the technical issues experienced during the beginning of the pilot cause them to maintain a paper ledger for comparison purposes. While they could see that DreamSave could save them time, these groups did not experience the time savings that other did because a paper ledger was still calculated out by hand.

These conversations revealed some additional insights. As mentioned in the previous section, endline data **show increased in curiosity about using smartphones outside of their groups**. However, not every member who wanted to learn how to use the phone and navigate the DreamSave app had the opportunity to do so. Some community facilitators of both PTD and BD groups mentioned that more smartphones among group members would make learning faster. Some groups locked the smartphone away after the meetings, which meant that curious members had to spend their own time outside of the group to learn how to use the phone and they had to find a group member with a smartphone who was willing to teach them. For some groups and some members, it will take a while for them to feel comfortable with a new technology, especially if they do not have the opportunities necessary to explore the smartphone themselves. Implementers may be able to seize this enthusiasm to more broadly encourage and increase digital literacy and capability, especially for those who may not otherwise have access to new technology. While many members of paper groups may never fully understand or learn to use the paper ledger themselves, it is at least familiar to them and they have a physical paper they could inspect. It is the introduction of digital technology and the move away from a physical record that requires proactive efforts to increase digital literacy.

## Group Dynamics

Automating group financial transactions calculations reduced overall time spent on group transactions. The evaluation sought to understand how this potentially efficiency impacted the quality of time the group spends together by looking at group cohesion and group conflicts. We were particularly interested in whether the smartphone would lead to isolation with members spending less time together and less discussion as a group.

### Group cohesion

Savings groups are known for leveraging group social cohesion to encourage members to repay their loans, save regularly, and remain part of the group past the first savings cycle. Groups often become close friends and rely on each other for advice on aspects of their lives outside of the savings group. **One BD CF said the groups "love each other" and make a point to socialize prior to or after a meeting.**

PTD groups reported spending a similar amount of time socializing during the pilot of DreamSave as they had prior. Groups gather to discuss community issues, school announcements, and other personal issues. Discussions with group members and bookkeepers revealed that members continue to show up prior to the designated time to socialize. PTD groups continued to meet before and after their WE groups as they had prior to the pilot. PTD members reported they no longer spend time discussing data entry issues, a plus, and they remain close by using their gatherings to catch up on community events.

In addition to their individual livelihoods, many of the WE groups reported having joint business – such as selling soap or sugar – as an additional income generating activity for group members. As a group they purchase inputs and share the profits. PCI, alongside the government of Tanzania, encouraged savings groups to establish these joint businesses. PCI staff report that there has been an increase in PTD and BD groups that have started joint businesses as well as the number of businesses per group.

*One PTD CF sees a real difference in her groups since the beginning of the pilot. There are members who like to show off how much they can save, especially to get a GIF. Group members try to one up each other and make it a game.*

## Reduced Group Conflict

Another way to understand the impact of DreamSave on group dynamics was to examine the number of intra-group conflicts. Conflicts occur in groups when members disagree with the leaders about a transaction or their share out earnings. Handwritten ledgers are often full of human errors and individuals keep passbooks of their transactions meaning that, at times, a member's record of her transaction differs from the ledger, which can cause lengthy investigations into mathematical errors. Audits of PTD groups' paper ledgers conducted by PCI before the start of the pilot showed groups were making an average two major errors per quarter, where major errors were defined as an error that affected an individual or group fund balance. Other conflicts can stem from when group members violate their constitution by lending on the side or giving better deals to friends.

DreamSave automates these features – from group by-laws to ledger calculations. In addition, members immediately receive an SMS when the bookkeeper enters their transaction, meaning that errors are caught during the meeting, saving painstaking searches for errors through handwritten ledgers.

**Quantitative data reveal an overall reduction in group conflict.** Group members were asked about disagreements between members and bookkeepers and disagreements about the constitution. Figure 11 shows baseline and endline data for PTD groups. Figure 11 shows that groups reported far fewer disagreements about bookkeeping issues among women and men. Figure 11 shows a decrease in the number of members who report there are often disagreements among group members and about group by-laws. The number of women who said they often have conflicts about by-laws at baseline went down by half.

Figure 11: PTD groups conflict about bookkeeping

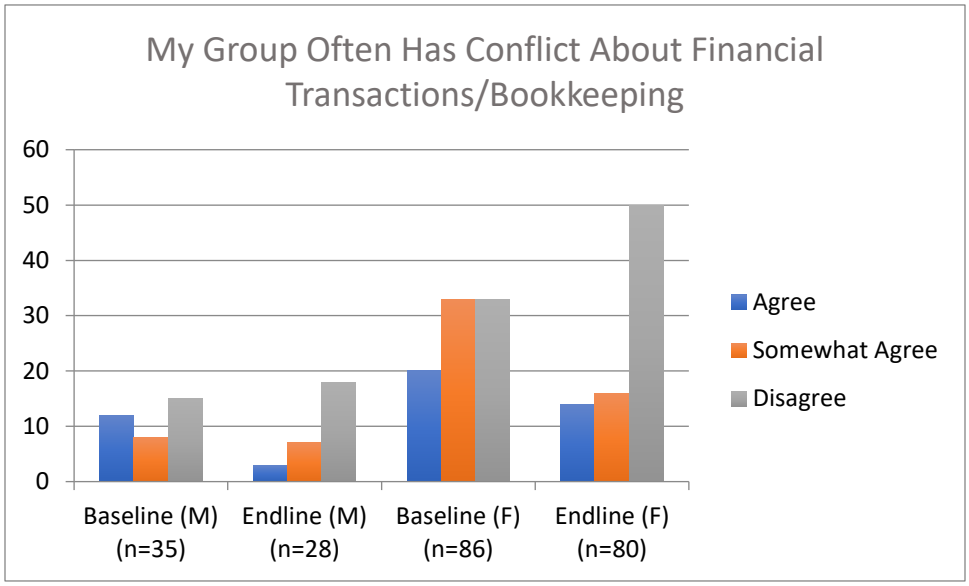
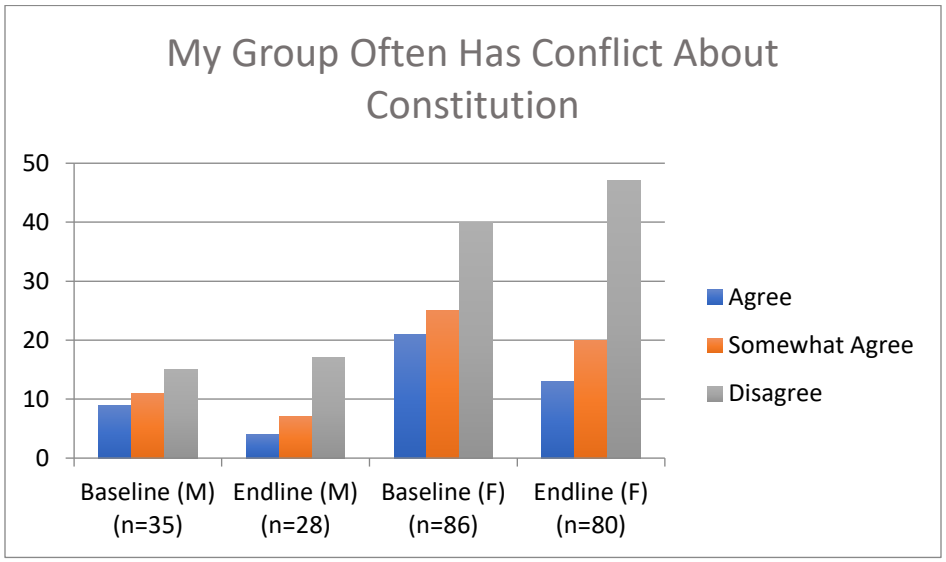



Figure 12: PTD groups conflict about group by-laws




Qualitative data reflects this shift. Focus groups were asked to reflect on different scenarios of types of conflict – between group members or a member and a bookkeeper disagreeing about numbers reflected in the ledger and a third scenario that was a conflict of personality. Groups were asked if they felt these types of conflicts were common when just using paper ledgers and if they still occurred using DreamSave. Almost all individuals reported a steep decline in the first two scenarios. **They said that the SMS feature of DreamSave helped mitigate these disagreements because of the immediacy of the SMS – if an error occurred it was easy to identify and fix.** The third scenario was a story about two members simply not getting along, causing one to consider leaving the group. Members said this still happened because this was a personality issue. As one respondent said, “There are some people whose nature it is to argue.”

## Financial Behavior Changes

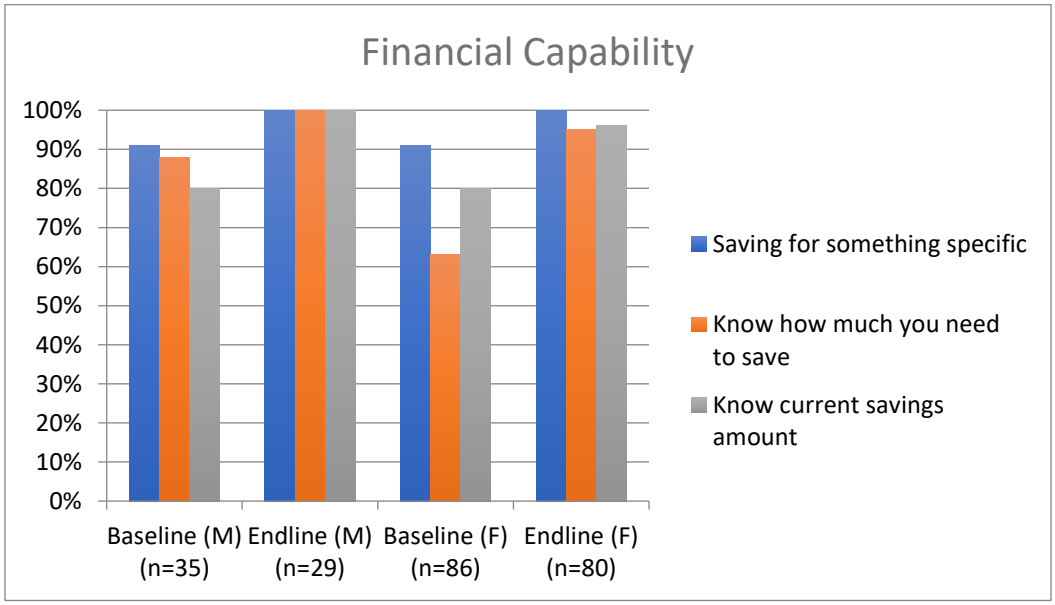
The DreamSave app offers multiple features aimed at building user financial capability. Using SMS, the app reminds each group member about their goal each week, encouraging them to save and telling them the exact number of shares they need to save each week in order to meet that goal. When the member saves the maximum during a meeting, they receive stars or a dancing GIF (see Annex 1, Figure 7). **Accompanied by music, these interactive, social features were popular among group members and came up repeatedly during discussions and interviews.** Using learnings from behavioral economics to shift human knowledge, skills and behavior, the app helps each group member create a reasonable goal and tracks that goal by mapping out how many shares each member would have to save each week of the cycle to reach their goal (see Annex 1, Figure 3). While members of traditional paper ledgers are often encouraged to set personal savings goals, they were nearly impossible to track within the group's ledger and were often unreasonable because they were not accompanied with consistent financial capability building.

> *"People cannot be lazy with DreamSave." – PTD CF*

## Financial Capability

PTD groups were asked about their savings behavior at baseline and endline. Individuals were asked if they were saving for something specific, if they knew how much they needed to save for that goal, and whether they knew how much they had saved at that time. Most respondents reported saving for something specific. Figure 13 shows increases in the number of individuals reporting that they know how much they need to save for that specific goal and that they know their current savings amount. **While overall financial capability is moderately high, the biggest jump at endline is women reporting that they now know how much they need to save to reach their goal.**

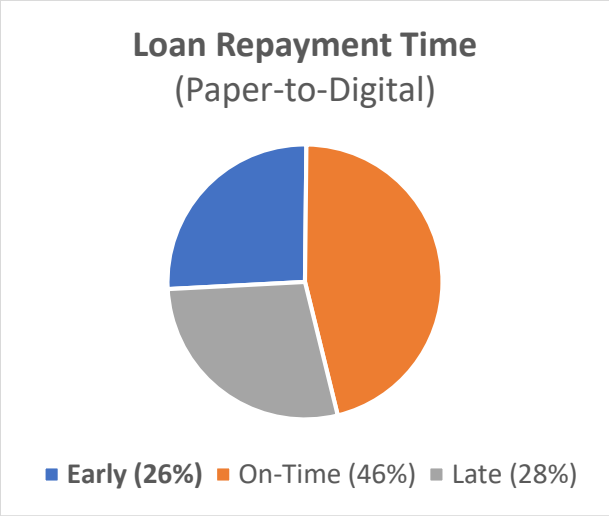
Figure 13: PTD groups financial capability between baseline/endline



Setting specific savings goals at the start of the WE group cycle put in motion a number of embedded behavioral elements. First, the app sent weekly messages to members with phones reminding them about their goal, their outstanding loan and amount due, as well as how much they needed to save during the next meeting to meet their goal. The SMS reminders were mentioned by CFs and by group members. One CF said that with paper ledgers people would show up to meetings with nothing to save but this didn't happen using DreamSave. Other CFs noted that loan repayment increased because of the SMS reminders. Even for those members who may not have had enough to make their full weekly repayment were bringing enough to repay the interest owed. The goal setting also prompted some bookkeepers to start group conversations about savings goals. Groups began making a habit of talking about reaching their goals as a group. One member of a PTD group said the messages encouraged people to start paying their loans back earlier than they would have using a paper ledger and slowly over time rather than in one lump sum. This change has reduced late payments.

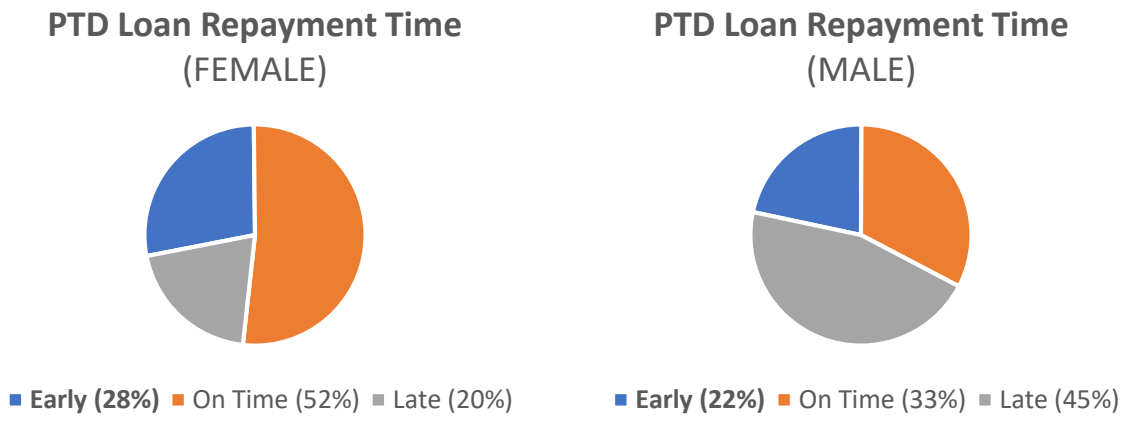
To this point, PTD groups issued a total of 150 loans. Using data from the DreamSave app, Figure 14 shows a surprise: **a quarter of loans issued among PTD groups were repaid early.** Interviews with PTD community facilitators also reported that group members were repaying loans on time and even early due to the SMS reminders. One CF said that the reminders ensured accountability: "You can't be lazy with DreamSave."

Figure 14: Loan Repayment Time, PTD




Among the PTD groups, there is also a modest difference between how members reponded to repayment prompts by sex. During the study period, 104 loans were taken by female members of PTD groups. Of these, 28 percent were repaid early. Figure 15 shows that male members of PTD groups took 46 loans during the same period, of which 22 percent were paid ahead of the due date. Women were slightly more likely to repay their loans early than men.

Figure 15: Loan Repayment Time, PTD groups, by sex




**The SMS nudges, time saved due to automatic calculations, and the increased group discipline were enormous drivers motivating group members to continue using DreamSave.** To date, the groups using DreamSave have experienced a low dropout rate of 2.8 percent and in fact have increased members by 20 percent (19 members) with BD groups, and 8.7 percent (22 members) overall when including the more established PTD groups. Typical PCI WE groups in the Mara experience a drop-out rate of 4.3 percent and a growth rate of 28.4 percent.

**The SMS reminders also altered the behavior of other household members.** One all-female PTD focus group said that when they receive their SMS they show their male partners. They used the messages to show him that they had taken out loans and need help repaying them. They reported that not only did their male partner give them money to repay the loan but that he would also work harder so they could save more each week. The SMS "builds trust between them" and encourages him to change his behavior. One woman said her husband looked for a new job and another said she saw him work harder to add money to their savings.

The app included a speedometer in each account where members could track their savings progress (see Annex 1, Figure 4). Asked about this specifically, many focus group participants said they liked this feature – some said it was good to see the progress they were making. Most said they would have saved regardless of the speedometer and just under half of group members hadn't really interacted with that feature of the app.

Another feature mentioned frequently in interviews were the animations and sounds. The animations were various animals like a cow, fish, or chicken and represented different things members were likely to save for. When members reached certain savings milestones, the app would celebrate them by sharing the fish GIF with a song. Members saw these features as fun and they even induced some friendly competition within one group (see Annex 1, Figures 7 and 4).

## Key Findings: Born Digital

BD groups were formed for the purposes of this pilot to add robustness to measurements of impact of digitization on group dynamics. Having only just met each other and started saving together, does a smartphone ledger slow group cohesion? Would there be differences in the type of person interested in a digital savings groups? Would on-boarding new groups be faster than paper ledger groups? Would there be similar levels of group conflict, or unforeseen jealousy related to the smartphone?

### Time Spent in Group Meetings

Members of BD groups were asked to place rocks in the same buckets as PTD groups. They, too, were asked to place rocks in the buckets to represent an average meeting and then change them to represent their most recent meeting. Table 3 shows where they initially placed their rocks and where they moved them.

Table 3: Qualitative Results for BD Groups on Time Spent in Meetings

| | **Average Meeting Time** | **Most Recent Meeting Time** |
|---|---|---|
| BD focus group 1 (n=6) | Most rocks: Problem-solving DreamSave and learning to use DreamSave.<br>Least rocks: Financial transactions and questions for CF about DreamSave | Each bucket had 2 rocks – the time spent on all group activities is shorter and evenly distributed. Current meetings involve financial transactions and they go home. |
| BD focus group 2 (n=8) | Most rocks: Learning how to use DreamSave and other.<br>Least rocks: Problem-solving DreamSave | Most rocks: financial transactions and other. |
| BD focus group 3 (n=6) | Most rocks: Questions about DreamSave, financial transactions. | Most rocks: questions about DreamSave and learning to use DreamSave. |

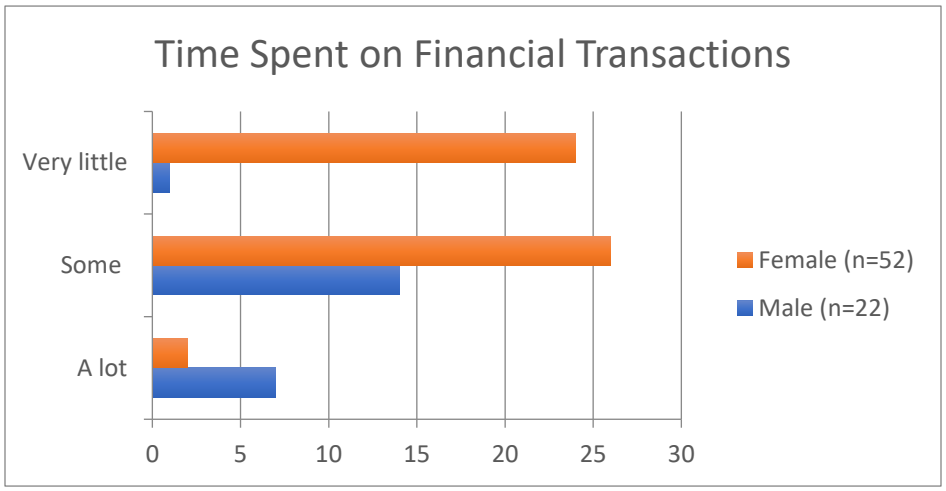
BD groups had two steep learning curves at baseline – they needed to learn how to function as a savings group and they needed to learn how to use DreamSave. This is reflected in their first rock distribution. They spent a lot of time figuring out the app which in turn meant that they were figuring out all the features and transactions of their group. In the first focus group, one older female member took a handful of rocks and forcefully slammed them down into the problem-solving DreamSave bucket. As the other members of the group moved rocks around, she consistently put rocks back into that bucket. She and others listed a number of app-related issues and while, when pressed, they said many had been resolved in the last few weeks.

> *One woman said that the meetings take so little time with DreamSave that she can leave something boiling on the stove, go to a meeting, and return home to find that the food isn't ready yet.*

**This same group, however, reported that at the beginning of the pilot their groups lasted two and half hours. They were new to technology and took a while to learn. But now they lasted 30 minutes.** As presented in the previous section (Figure 8), BD groups lasted around 48 minutes. Members of another focus group said their meetings used to last three hours and now last only one hour.

In fact, Figure 16 shows BD members reporting how long their groups spent on financial transactions at endline. Interestingly, men's and women's perceptions differ. Women overwhelmingly reported spending very little or some time on financial transactions. But men tended to report that their groups spent some or a lot of time on financial transactions. This is likely due to the fact that the phone users were predominantly male. By assuming this responsibility, they spent most of their time during the meeting navigating the financial transaction section of the app.

Figure 16: BD Groups Time Spent on Financial Transactions, endline



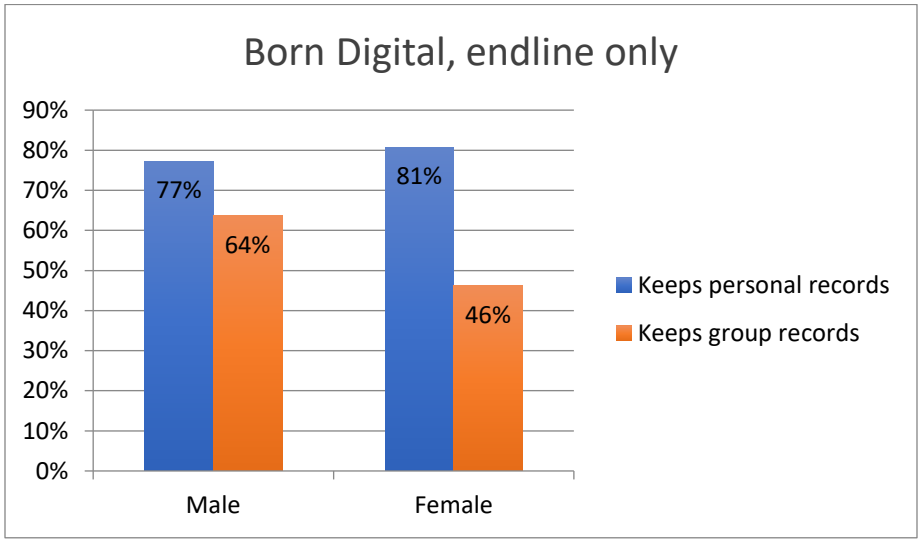

## Paper records

One of the surprises of this pilot was the fact that every BD group asked to be trained on how to record savings records on paper, much like the PTD groups. One BD group used a paper ledger for a majority of the pilot, only moving back to using DS after seeing back-end app errors resolved. Members of one focus group said that they used paper ledgers from the beginning because one of their members had been in a savings group previously and knew how to keep a ledger. Members of another focus group reported that they all kept their own records of personal and group transactions.

Like the PTD groups, BD groups reported time savings regardless of the fact that they also wrote down their group balances on paper. For these groups, however, most records were secondary to DreamSave and used for narrow purposes. For example, most WE groups offer zero interest loans from their "social funds" to members who needed fast cash for emergency expenses. DreamSave did not have a place for them to record these lending activities at the time. Members of the focus groups reported that their groups kept separate ledgers for these activities. Figure 17 shows the percentage of men and women members who kept personal and group records. Members of another focus group said they kept their own handwritten notes on balances because they were worried that if they deleted the SMS they received on their personal phone that their loan information would be lost. This speaks more to training and being new to a smartphone than a DreamSave issue.

Trust and confidence in DreamSave took a while to establish. **By the end of the pilot, BD members reported feeling highly confident that DreamSave was safe.** However, in the beginning, members reported being skeptical that the app could do what PCI told them it could do. They were worried their data would be lost if they lost the phone. Two BD CFs were asked, in separate interviews, about their groups' experiences adapting to DreamSave. Both said that their group members struggled. One said that members set aside their personal time to learn and understand DreamSave, as PTD group members did. But members of anther BD groups told their CF they didn't want to keep the smartphone – it posed a security risk.

Figure 17: Percentage of members keeping personal and group records, endline only




It is not surprising it took time and experience for skeptical members to adapt to the smartphone. Adequate investment in training CFs and even group members could address these hesitations early on. In instances where it's challenging to find trainers or CFs with sufficient levels of digital literacy, implementers should consider training group phone users directly. While potentially more resource intensive up front, this likely yields better results long term, as phone users will be able to troubleshoot directly, particularly in rural settings. **To this point, members of one focus group were asked how they learned to trust the app. They said it took using the app.** While their CF told them to trust the app, they needed to experience it. One of their groups lost all their ledger information, but were able to recover it – this improved their trust. When those with phones began to receive SMSs about their savings, their trust improved.

## Group Dynamics

BD groups reported spending time prior to and after meetings to socialize with group members. The groups were new, so socializing was especially important to establish and maintain bonds of trust. Members of all three focus groups said they discussed a variety of issues as a group from WE group rules, community social issues, and group member discipline in cases of delinquency. BD groups also reported having joint business selling soap or sugar.

## Group Conflict

Like PTD groups, BD group members were asked about disagreements between members and bookkeepers and disagreements about the constitution. Since groups were newly formed at baseline, they were only asked about group conflict at endline. Figure 18 shows **three quarters of men felt their groups did not have conflicts about financial transactions.** Women overwhelmingly reported that their groups sometimes had conflicts, with a few saying they never had conflicts and a few saying they often had conflicts. Figure 19 shows that about seventy percent of women said their groups did not have any conflicts about group by-laws while men were evenly split between the three categories.

Figure 18: BD groups conflict about bookkeeping

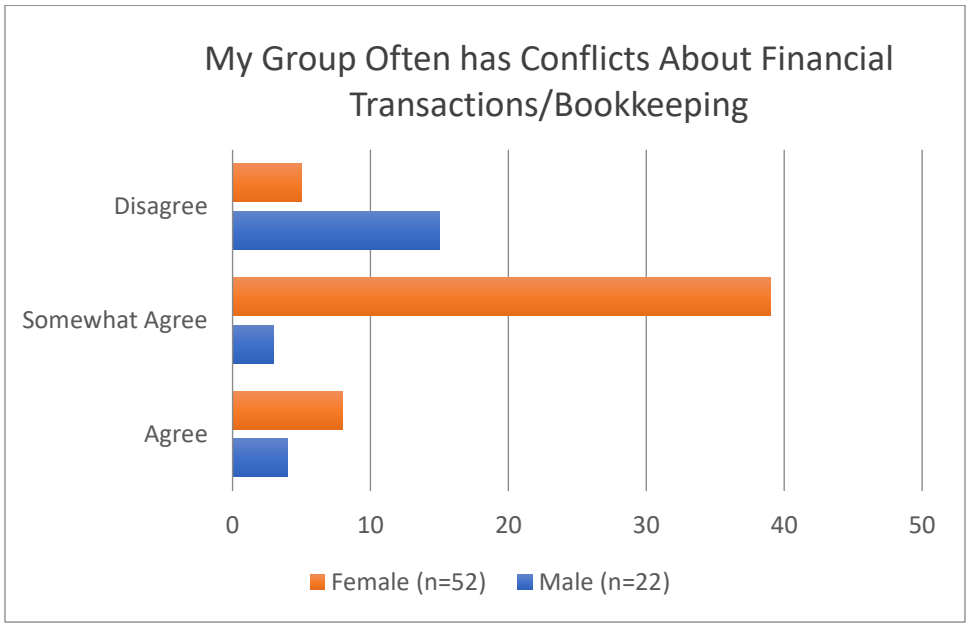
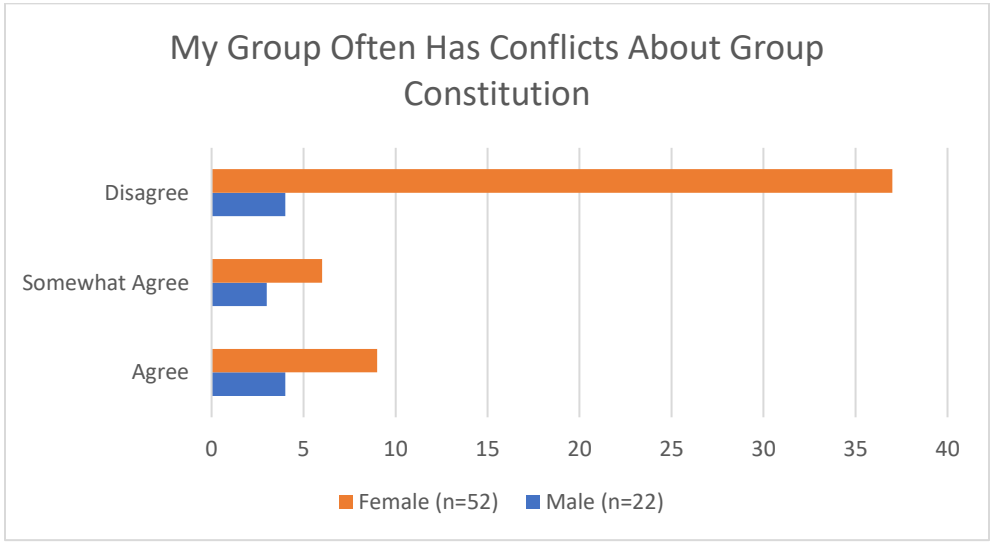



Figure 19: BD Conflicts About By-laws

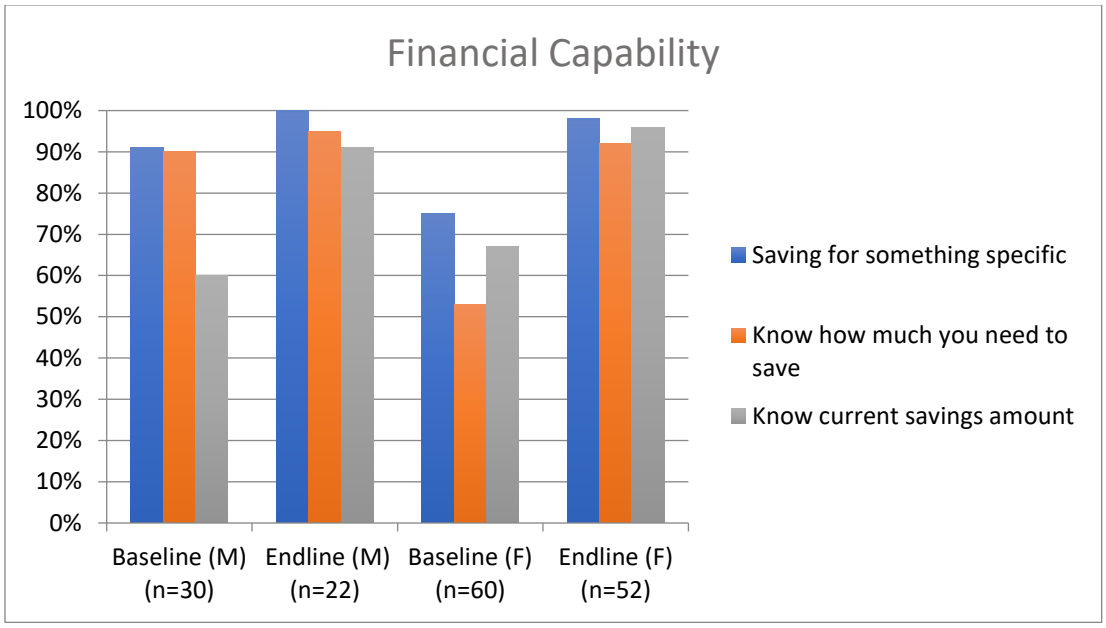


## Financial Behavior Changes

BD groups were also asked about their experience with the behavioral economics features of DreamSave – the goal setting, reminders, and SMS nudges. **Members of the BD focus groups enthusiastically reported about the GIFs and SMS reminders – they liked the animations, the sounds, and the transparency through receiving their transaction information directly to their phone**. One member said that the SMSs built trust and transparency. The GIFs were fun – one focus group spent a lot of time imagining other GIFs that DreamSave could include. They felt it was unfair that only those savings the most shares would get the GIFs – everyone saving should have received a dancing cow! This focus group was made up of largely young people, several of whom had smart phones.

BD groups were asked about their savings habits at baseline and endline. The questions at baseline were intended to get a general sense of their savings habits and ideas. Figure 20 shows the change over time in the BD groups. What is striking is just how high their financial capability was at baseline. As with the PTD groups, women tend to have a lower sense of how much they need to save for their goal at baseline compared with men. About a third of men and women do not have a specific savings goal in mind at baseline. By endline, specific savings goals and planning are nearly universal.

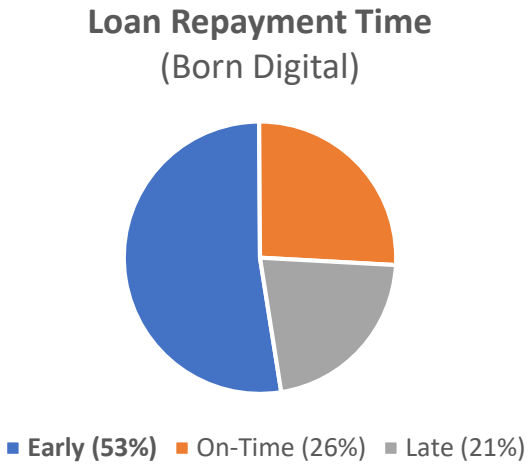
Figure 20: BD Financial Capability



## Loan Repayments

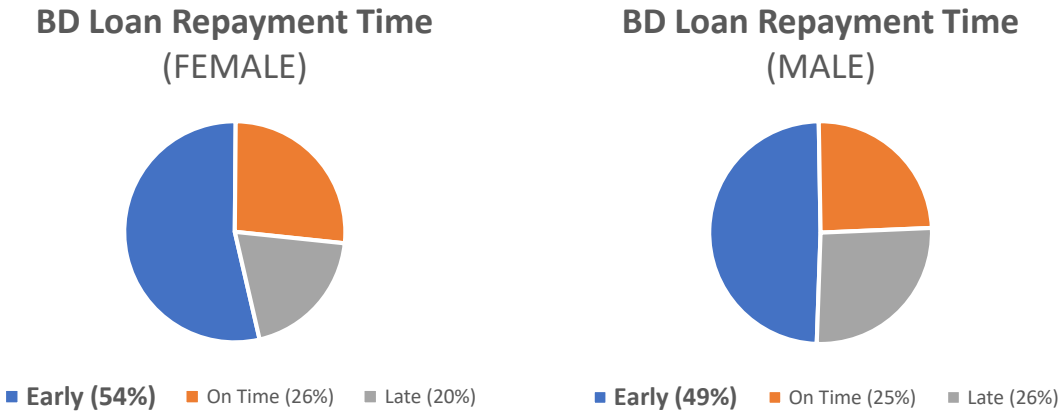
Much like the PTD groups, DreamSave app data show that BD groups members also paid their loans early. In fact, BD groups took a total of 208 loans, of which 52 percent were repaid before the due date (Figure 21). Further investigation is needed to know exactly why so many more members of BD groups repaid early, but it is a striking finding.

Figure 21: Loan Repayment, BD



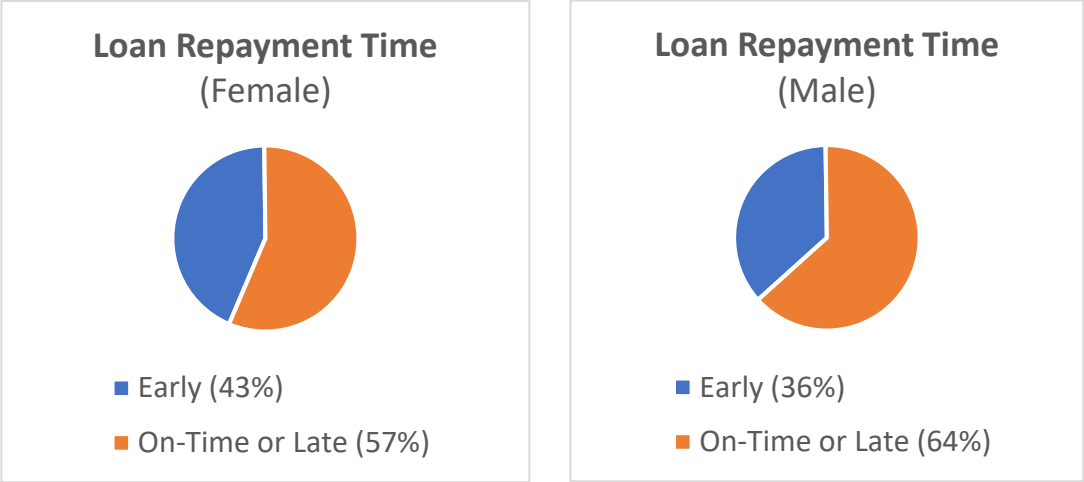

The BD groups also show a modest difference between how members reponded to repayment prompts by sex. Women from BD groups took 147 loans over the study period. Of these, 54 percent were repaid early. Men of BD groups took 61 loans during the same period, of which 49 percent were paid ahead of the due date. Similar to PTD groups, women in BD groups were slightly more likely to repay their loans early than men (Figure 22).

Figure 22: Loan Repayment, BD Groups, by sex



When all the loans from both group types are combined, there is also a modest difference between how members reponded to repayment prompts by sex. Across all the groups, 251 of the loans during the study period were taken by female members. Of these, 43 percent were repaid early. Figure 15 shows that male members took 107 loans during the same period, of which 36 percent were paid ahead of the due date.

Figure 15: Loan Repayment Time with all groups, by sex



# Key Findings: Technology

Digitization is not easy, particularly when rolling out a pilot among rural communities with limited digital literacy. While the challenges of going digital were expected, they still played a significant role in the user experience. A few bear mentioning below, such as how to perform various tasks in the app, app updates that were perceived to have caused a change to data in the ledger to connectivity issues and concerns about the technology itself.

As this was a pilot – the first real-life test of the DreamSave app in a remote rural environment – software updates occurred throughout as PCI and DreamStart Labs discovered user errors and other issues that needed to be addressed. Updates to the DreamSave software included addressing some bugs in the code (standard for any new software launch) and improvements related to WE group members' difficulties using and navigating the app itself. These routine disruptions in usability were expected, and PCI and DreamStart Labs had created a feedback loop to ensure a smooth roll out of the app. This included regular and as-needed travel to group meetings, regular in-person meetings with CFs, and frequent phone communication with groups and CFs. All of these interactions provided opportunities for additional training, peer learning, and technical support and troubleshooting. This was especially important given the rural locations of the BD and PTD groups, which made it difficult for PCI staff to reach groups experiencing issues with the updates.

Digitization challenges fall into the following categories:

1. First time smartphone users
2. Need for further investment in training
3. Communication challenges with groups in remote areas
4. Requests for the app to support custom practices
5. Connectivity issues

## First time smartphone users

This pilot offered many members the first opportunity to hold, use, and learn to navigate a smartphone. Only 17 percent of BD group members and 22 percent of PTD group members reported every having used a smartphone. For this pilot, access to a phone was defined as the ability to use a phone whenever a member wanted to – this included a household phone that was owned by another member but that they could use at will. Members with access to a basic phone approached the smartphone with more interest and confidence than members who did not have access to any phone. Though fewer in number, members with little or no access to mobile phones were among the most vocal against the switch to a digital ledger. The lack of experience with smartphones made adapting to DreamSave a tough experience for many members. Interviews and focus group discussions surfaced a number of issues relating to the overall novice among group members.

- As stated in previous sections, members were curious about the smartphone and wanted to learn how to use it themselves. Individuals set aside their own personal time to learn how to use the smartphone and the app. However, this became difficult for group members who did have experience with a smartphone to provide guidance and answer questions. One member said that she didn't always have time to answer questions from all her group members who wanted

her to show them how to navigate DreamSave. Implementers could provide more opportunities for members to learn how to use the smartphone.
- First time users need tutorials with the basics. Navigating a touch screen was challenging at first. Many of the screens required members to know how to scroll up and down to select different options, which some struggled with in the beginning.

### Need for further investment in digital training

More time and investment are needed to build basic digital literacy among staff and CFs. PCI devoted a week to training CFs on the app, including two full days of practical learning through mock group meetings. However, what became clearer as the pilot went on was that basic digital practices among frontline staff and CFs caused serious disruptions to the function of the DS app. As PCI and other implementers expand digitization of savings groups, adequate investment in digital literacy training – including identifying individuals with smartphone experience as community "champions" – will be essential to successful expansion. While many of these issues were resolved as pilot members experienced using the smartphone and DreamSave, these issues can be easily addressed with sufficient training, repeated at regular intervals.

- In the beginning, groups had many questions about how secure the app was: if they didn't have a phone, would others be able to steal their money; and what would happen to their money if the phone was lost or stolen.
- Every group lacked a basic understanding of how smartphones often install updates automatically in the background, or that default settings often cause phones to update every app when it is turned back on, which can require large amounts of data and phone credit.
- When groups set up their by-laws in DreamSave, they were given the choice between using shares (each share is worth a certain number of shillings) or shillings. In practice, however, bookkeepers commonly entered savings each week in shillings. This took users awhile to figure out. Similarly, the attendance page is designed as an opt-out rather than opt-in. So, members needed to select absent members rather than those who were present.
- Digital bookkeepers could not fix past errors in the digital ledger when they were found. Data entry errors are easy to fix in a paper ledger (this is a double-edged sword as this ease also makes the ledger susceptible to fraud, something DreamSave is designed to mitigate). If an error was found in DreamSave, users could not go back and change it until an update added this feature late in the pilot. This frustration impacted group member's trust.

One additional cause of some confusion was that some groups accidentally entered actual group data into practice group versions of the app, created by group members to gain familiarity with the app prior to the launch of the pilot. Groups were advised to give their practice group a different name than their actual group name so as to distinguish between these two versions. Unfortunately, not all groups heeded this advice, leading to confusion throughout the pilot. This was resolved in one of the many updates so that every practice group name was automatically preceded by the word 'Practice', greatly reducing the chance for human error. In fact, many of the updates made throughout the pilot were in response to unforeseen user actions – groups making choices that the developers had not considered.

Once the issues were identified, the app was updated to place guides or rails to minimize the chance of those same errors in the future.

## Communication Challenges with Groups in Remote Areas

PCI and DreamStart Labs set up processes to communicate questions, requests, and support needs of the pilot groups. However, for the first several months of the pilot, these communication channels didn't work well, causing delays for groups between the time they reported an issue to the time it was fixed. Due to the lag in communication, the number and frequency of updates exceeded PCI's ability to manage groups' digital literacy habits discussed above. When these communication problems were discovered, PCI and DreamStart Labs responded quickly, which included making several updates to the app with requested improvements. While groups saw their suggestions implemented, the downside was a higher frequency of app updates during this period, which made it difficult for PCI staff to keep CFs and groups up to date, especially as all updates were manual and required staff to travel to the group to support the download and installation. To improve communications, DreamStart Labs also sent one of its Customer Success reps in Tanzania to the Mara region in early January 2020 so they could be closer to the groups and ensure future responses were quick and efficient. This greatly improved the communication and feedback challenges.

## DreamSave adaptability

As part of the group set up process for the DreamSave app, members entered their group by-laws, which included loan period, interest rate, fine amounts, amount of shillings per share, etc. (see Annex 1, Figure 1). This enabled the app to automatically calculate fines or amount left owed on a loan. In paper ledgers, groups frequently change some of these rules depending on livelihoods and income. Farming and fishing are highly seasonal livelihoods, vulnerable to shocks and external conditions outside individual control, like climate change, extreme weather events or over-fishing. The amount group members are able to save depends on their livelihoods and thus, if the harvest is good, they may want to increase the interest rate they charge each other or, if the fishing is bad, extend the loan repayment terms. While the DreamSave app allows for mid-cycle changes to interest rate, for example, many group members reported they could not change their by-laws, pointing to a training issue.

As mentioned previously, groups also had unique practices and cultures. Certainly, many, if not most, of these group customizations were unknown to both PCI and DreamStart Labs prior to the pilot or at least very difficult to anticipate. In fact, DreamStart Labs and PCI made the deliberate decision not to pre-adapt the app so they could learn and understand all the variations among groups. That said, this issue came up repeatedly in qualitative interviews of both group members and CFs. Among the related issues reported by group members were:

- Group members leaving mid-cycle. With paper ledgers, calculating how much the member has saved and how much they owe must be done manually. DreamSave automated all the calculations (see Annex 1, Figure 11). Some groups, however, reported that they were unsure how to do this. DreamStart Labs responded by making "Remove" button green so it was easier to see.

- At least one person in every focus group mentioned the practice of taking multiple kinds of loans. Social loans, a short-term zero-interest loan, were a popular loan type. The app did not allow groups to track this second type of loan at the time, so groups all kept track of this loan using paper ledgers. Related to this, was a common practice where groups offered customized loan terms depending upon the borrower, such as extending the repayment period during certain times of the year or offering a lower interest rate to specific members in need. At the time of this pilot, DreamSave did not allow groups to offer multiple types of customized loans at the same time, and thus they kept paper ledgers.
- Nearly every interview also mentioned the struggle groups encountered with currency and rounding. Due to the Tanzanian Shillings denominations, groups were used to increasing the size of savings or a loan to accommodate the fact that sometimes total owed or saved came to numbers that simply did not exist in the Tanzanian currency. Initially, DreamSave included as setting that rounded off these odd numbers automatically, but that proved confusing to some groups. The way the app handled this was improved based specifically on feedback from these groups (see Annex 1, Figure 15).
- Two CFs brought up the fact that in DreamSave, there was no place for members to enter an item of collateral a borrower might put up as a guarantee on the loan. Both the PTD and BD CF said writing down a collateral item was important for group members to feel committed to the savings group. Writing down the asset they were using as collateral created buy-in and, as one CF said, made them fear losing something. DreamSave has since added that option, but during this study, groups who used collateral simply wrote down any collateral items on a piece of paper.

### Connectivity issues

Finally, connectivity issues came up with some frequency, which is to be expected when using technology in very rural communities.

DreamSave is designed to work entirely offline, meaning that groups can enter group member data, start a new cycle, etc without being connected to the network. However, due to the fact that groups turned data off on their phones, as mentioned above, meetings were impacted by connectivity issues. Group members knew where to go to connect to the network, but because they did so infrequently, syncing their data became an issue. DreamSave includes a technology called “DreamSync” that automatically backs up meeting data any time the phone is turned on and a mobile signal is discovered – even if the app is not open. But if the phone’s data is turn off, DreamSync cannot work.

Because this backup process is automatic and transparent, one challenge was that groups didn’t always realize their data had been backed up. This was especially true during rainy season when connectivity near most meeting locations was a significant challenge. Some groups reported trying to backup data unsuccessfully for days in a row and were worried that all that information would be lost. Since the automated backup process wasn’t visible enough, they became worried that their records could be lost. To address this challenge, DreamStart Labs added a more visible “Last Backup” timestamp to several screens that recorded the automatic backup times to help reassure users that their data was indeed safe.

While these challenges are addressed, it's important for PCI and other implementers to include good digital practices as part of the technical knowledge to their trainings. PCI now knows to include information on having enough credit on group phones to complete the full backup.

## Conclusion and Recommendations

Digitizing savings groups offers many enticing possibilities. This research provides some of the first insights into how savings groups can successfully transition from paper ledgers to digital ledgers and examines some key hypotheses about digitizing savings groups. Time spent on calculating financial transactions and errors in record-keeping were reduced using DreamSave. Group cohesion was not negatively impacted by the introduction of a smartphone; newly formed groups were still able to bond and trust each other. Group conflict went down and savings rates – and on time payments – went up due largely to the increased transparency of SMS reminders. And finally, exposure to smartphones raised skill levels and curiosity about using a smartphone for things outside of the WE group. The behavior changes seen among group members in such a short time offer an exciting peak into the future of digitization. Group repayment rates, increased savings, and curiosity about the technology all bode really well for future expansion.

These are exciting findings – they provide important points of optimism for the future of digitization. We also know, from this and other research, that digitizing savings groups is complex, particularly among first time users in rural communities. This pilot also offers clear insights into the challenges of digitization – not just the learning curve from paper ledgers but the fact that female members had a more difficult time with the transition, that the newly formed groups attracted a younger, more tech-savvy cohort, and that sufficient investment in training is needed for all members to become comfortable with the new process and tool.

While financial inclusion has moved rapidly toward individualized experiences of digital financial inclusion, how and whether mobile technology can be applied to savings groups is still largely unexplored. This research is among the first to explore the potential, and the challenges, of this strategy. Financial inclusion and digital financial inclusion is not automatic and requires a host of parallel investments in women's literacy, numeracy and intra-household bargaining and negotiation that enable women to retain control over their earnings and savings.

The digital transition is not simply about the change from paper to phone – it is also about the broader implications of adding technology to a group-based financial service. Digital financial technologies can be powerful tools to foster women's financial inclusion but care and training must also be provided to address rigid gendered norms and to overcome gender- and context-specific barriers. Implementers have to consider aspects both within and beyond their control such as digital literacy of their staff, trainers and savings group members, access to and ownership of mobile phones, added components to their savings group training curriculum, and connectivity and data coverage. Financial technology firms have these to consider as well as user interface design elements that account for literacy, numeracy, and unique group practices (as much as is practical).

Added to all of this are the unintended consequences of digital financial inclusion on women. Some women in this pilot experienced positive feedback from their male partners seeking to help save together as a household. Others, however, were put at potentially increased risk by sharing their male partner's mobile phone number in the app before fully understanding the implications. Beyond these experiences, women's access to and use of the smartphone and DreamSave were more limited than men's. For each member to experience the full range of benefits – and inclusion – from the capability building, efforts need to be made to allow and encourage equitable time and experience across all group members, households and communities.

These insights – on both the benefits and the challenges – offer tremendous promise for the future of financial services to meet the needs of the poor.

## A Note on Trust

It is important to understand pilot results in light of what is already known around establishing and building trust. Early in the pilot, members were skeptical of PCI for providing the smartphone and questioned if DreamSave could really do all the things it promised. Qualitative data show that prior to the first app update, members were amazed with DreamSave – particularly the automated calculations – and were excited about using it. Unfortunately, the first app update brought unforeseen complications. That, coupled with novice phone users in extremely rural areas, meant that trust in the app and in PCI waxed and waned over the course of the pilot.

Why is it that some groups claimed they were benefiting from the time savings of automated calculations when they were also handwriting records or, in one case, hand-calculating? And why did the groups continue to use DreamSave after the first few months of initial unforeseen complications with the app, which by all accounts were discouraging? At endline, members nearly universally stated they would like to continue to use DreamSave after the pilot. One big reason for these seeming contradictions was the fact that groups all knew where their cash was: the cashbox. While they navigated the new technology, the old "technology" remained. Several interviews reported that this fact eased members' minds when things were not going according to plan early on in the pilot.

The financial capability features were also central to building trust. The SMS messages provided a level of transparency – both because members immediately received a message when the digital bookkeeper entered their data and because of the nudges they received between meetings. The increased loan repayments further this point. In fact, five months after endline data were collected, PCI reported that all 13 of the 13 groups were still using DreamSave. This is especially striking because this is during the global COVID-19 pandemic and PCI has ceased field operations due to public health concerns. Groups are meeting independently, with limited remote tech support.

At endline, PTD and BD were asked about how well they trust the app. Questions under the "trust" umbrella included confidence that errors could easily be fixed in DreamSave, if the phone is lost, their data remain safe, and if an error is found, it can be quickly resolved. PTD groups were also asked about their confidence in the accuracy of their paper ledgers, an important benchmark. At baseline, 69 percent of PTD group members reported they thought their paper ledgers were accurate and 58 percent said the ledger had data entry errors. As Table 4 shows, nearly all PTD (96 percent) and BD (94 percent) respondents said that errors could be easily fixed in DreamSave. What this shows is that despite the

delay in getting errors fixed in app, group members were enthusiastic about their overall experiences and the potential benefits of all the DS features.

Table 4: Trust of DreamSave, endline

| | PTD | BD |
|---|---|---|
| Errors can be fixed easily using DreamSave | 105 (96%) | 69 (94%) |
| My information will not disappear if the phone is lost | 105 (96%) | 68 (92%) |
| If an error is found, it can be quickly resolved | 105 (96%) | 71 (96%) |

PTD and BD groups were also asked about their confidence that their information would remain safe if the phone were lost or stolen. Similar to the previous question, PTD and BD groups overwhelming said that they knew their information would be safe. This is significant given how nervous so many members were about this issue at baseline. This is an opportunity for further study – why and how exactly groups gained trust in the app and in the security of their data. One CF pointed out that no matter what happened with app updates, members always knew their cash was in the cashbox. This eased concerns about losing their money, enabling them to continue.

## Recommendations for Implementers

Based on the pilot experience and evaluation results, there are some clear areas for recommendation for both implementers considering digitizing savings groups as well as financial technology firms designing digital savings ledgers.

- **Invest in digital training** of staff, community facilitators, digital bookkeepers and group members. Community facilitators from both group types said learning to use the phone and DreamSave took a lot of time. A BD CF suggested the best way to get tech-hesitant members on board is to get another member with a smart phone to show these individuals and be a tech mentor. Training community champions could be a critical way to quickly answer group member's simple technology-related questions that might otherwise wait until the next time a staff member is in the area for a group meeting. The groups that encouraged each member to learn how to use the phone and the app had more buy-in from group members than those who locked the phone away immediately after the meeting was finished.
    - These data illustrate that when we introduce a new technology like a smartphone into our savings groups, especially rural groups, providers need to take care to provide structured space/opportunity for every member to become familiar with it at their own pace. While there is a training version of DreamSave, only a few people reported using it. The phone wasn't always available to use – groups locked it away in the cashbox after the meeting – or the person needed to learn the app with someone who already understood it. A couple of women said that owning a smartphone would increase their confidence in using it because they would be able to practice.
    - Relatedly, knowing that women were less confident with using the smartphone, implementers must ensure that digital training encourage and support women in their

learning process. Women-only training groups and women community champions could go far in providing a safe space for women to learn and gain familiarity with the phone.

- **Train new groups in paper ledgers**. Paper ledgers were useful and helpful as groups transitioned to the digital ledger. Training new groups in the basics of keeping a paper ledger while also training them on the digital ledger could enable them to develop their own trust in the app over time.
- **Be careful about linking digital savings groups to formal banks**. While formal linkages were not part of this pilot, this lesson can be inferred from the note on trust. Given the how important having cash in the cashbox was for groups to trust DreamSave and the new technology, it would be prudent to allow groups to establish trust prior to linking the service with a formal bank account, particularly in areas with low mobile money adoption. Formal banking linkages have many benefits, but letting the groups lead on when they are ready for this next step is key.
- **Ensure that there is a clear tech support structure prior to rollout.** Ensure savings groups and implementing staff understand clearly how and with whom to communicate issues they face using the app. When piloting a new technology, it is especially important to have access to on demand technical support in the local language. Unless hired specifically to provide technical support, implementing program staff should play only a supporting role in troubleshooting technological issues as they may not have the necessary skills or knowledge to clearly communicate issues facing users. Having a DreamSave Customer Success representative in the region who was accessible to groups and PCI staff greatly sped up the communication, clarification and resolution of technological issues and user errors.

## Recommendations for Fintechs

- **Digital apps must be gender transformative**. For the transition to digital savings groups to take hold more widely, providers and financial technology firms must grapple with the fact that many of the target customers – the low-income last mile women who make up a vast majority of savings groups worldwide – are fairly tech illiterate. Critically, technological literacy includes both the ability to access and use mobile technology and the confidence and comfort of navigating the financial tool itself. Basic literacy and numeracy are requirements for nearly all existing technological interfaces and digital savings applications are no exception. Women have different financial needs than men do – the need for privacy, different savings goals and income streams, and are less likely to have control over their own cash assets within the household – and apps must be designed with these needs in mind. Certainly, training implementing partners on the nuances of the app is critical, but the app design must also be gender-aware in the first place.
- **Automate updates.** While app updates were expected throughout this pilot, they were not always planned in a way that PCI could anticipate and be ready to answer any questions from CFs or group members. This impacted trust, especially in the beginning. Creating a regular schedule for routine software updates, changes to user interface, or any other changes would go far in building trust for all involved.

# Annexes

## Annex I: DreamSave Functionality Referenced in this Paper

The following screenshots are included to provide context for references made to app functionality in this paper. While these images are in English, note that the groups in this study used the Swahili version.

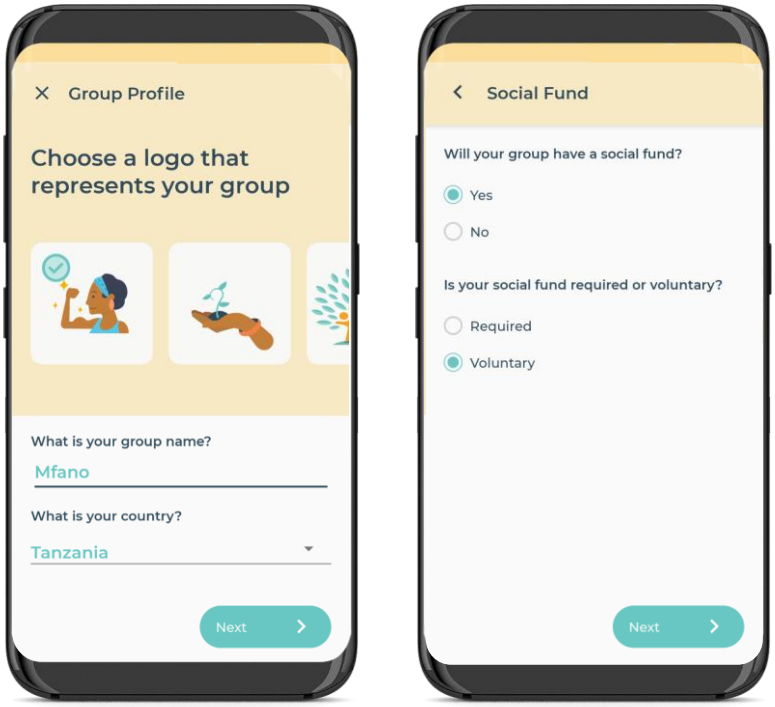



**Figure 1: Creating a New Group**

When a group first starts using DreamSave, the app walks them through a series of simple questions about their group profile, policies, and preferences (loan policy, interest rate, etc.).

If the group is already in the middle of a cycle, the app will also ask a few questions about the current group balances and outstanding loans.

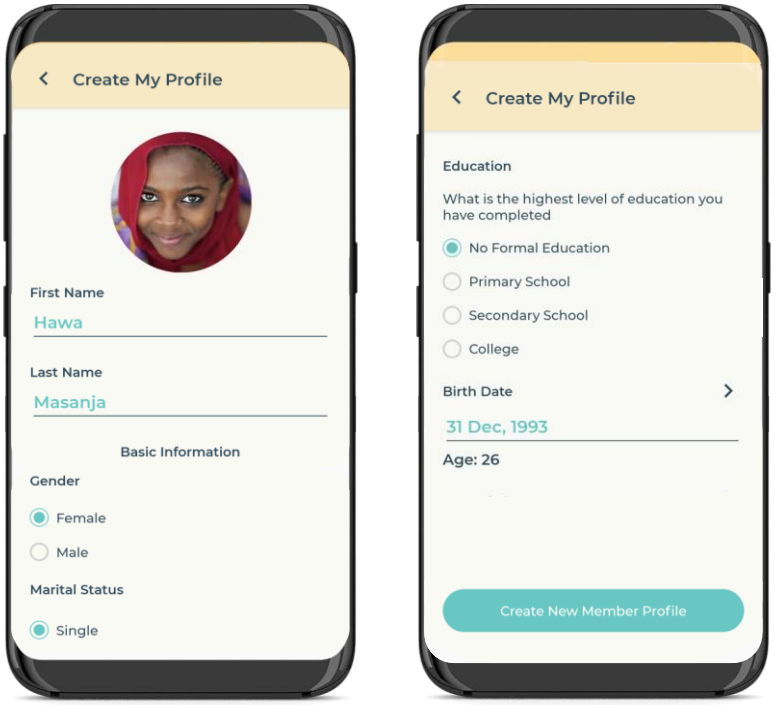



**Figure 2: Adding Members**

After a group has been created, each member fills out a brief personal profile. This profile includes a photo, name, and demographic information such as marital status, education level, and birth date.

Members with low literacy may have a group leader or facilitator help them complete their profiles.

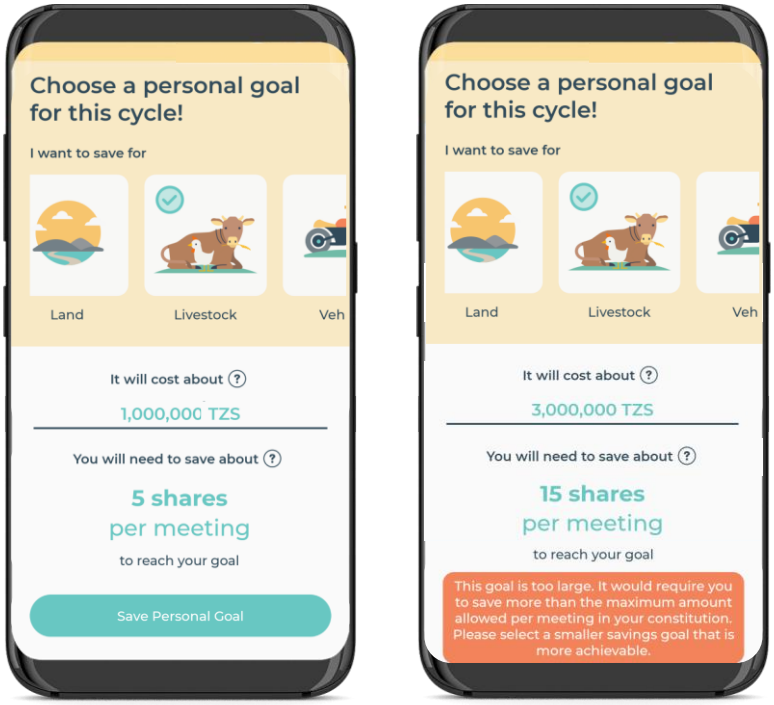
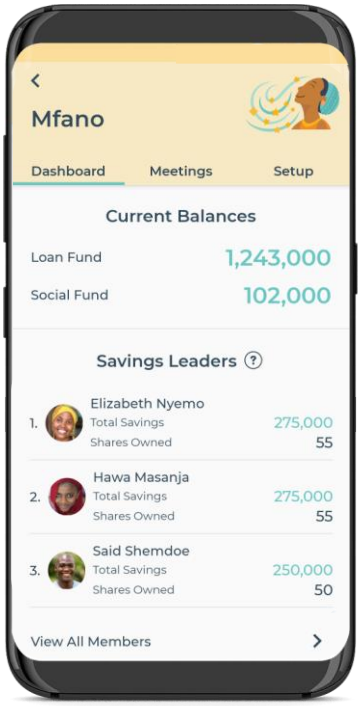



**Figure 3: Setting Personal Goals**

Each member is invited to create a savings goal for the cycle, and DreamSave shows how much they will need to save each meeting to meet that goal. If members set goals that are unrealistic, they will see messages guiding them on how set a more achievable target. Throughout the cycle, members see messages and graphics showing whether they are on pace or behind so they can adjust accordingly.



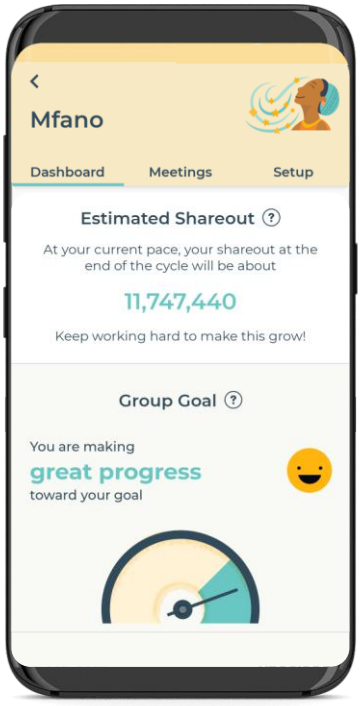
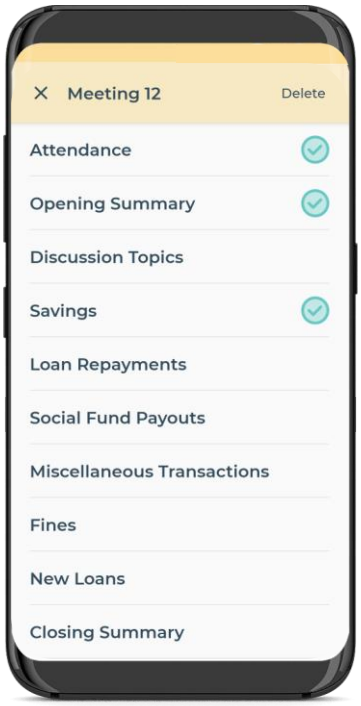




**Figure 4: Group Dashboard**

At the beginning of each meeting, groups see a dashboard with current balances, achievements, and progress toward goals. They also see an estimate of their earnings at the end of the cycle. The intent of this information is to improve financial planning for all members.

Most bookkeepers read these highlights out loud at the beginning of the meeting, so members hear the information audibly.



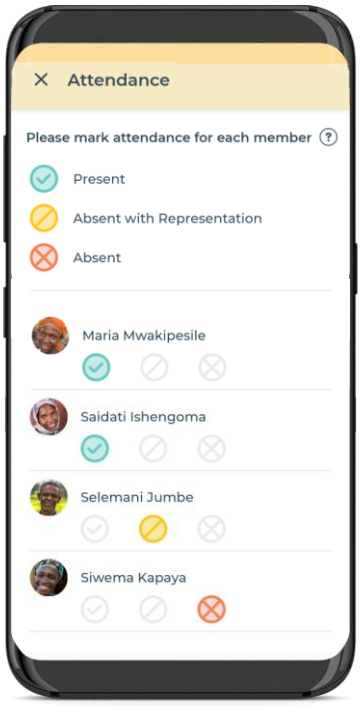
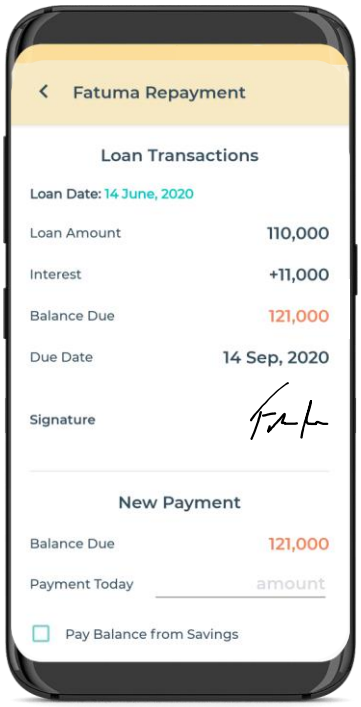




**Figure 5: Running a Meeting**

On meeting day, the bookkeeper follows the steps in the app, which are personalized to the group's constitution. Other members typically interact with the app only on steps that directly involve them (e.g. signing a new loan, viewing goal progress, etc.). After the meeting, all members receive personalized SMS messages with meeting summaries, transaction receipts, and loan reminders (messages are optional for members with shared phones).



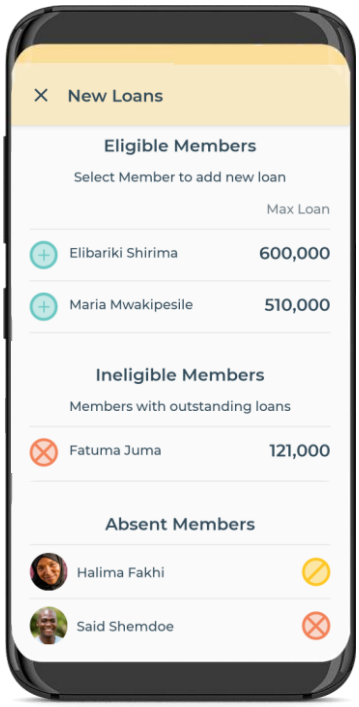




**Figure 6: Financial Transactions**

DreamSave calculates transactions automatically based on group policy. This saves time, and eliminates the errors, fraud, and tampering that can occur when leaders record everything in paper ledgers.

This also ensures loan policies are applied fairly and prevents leaders from taking advantage of vulnerable members based on age or gender.

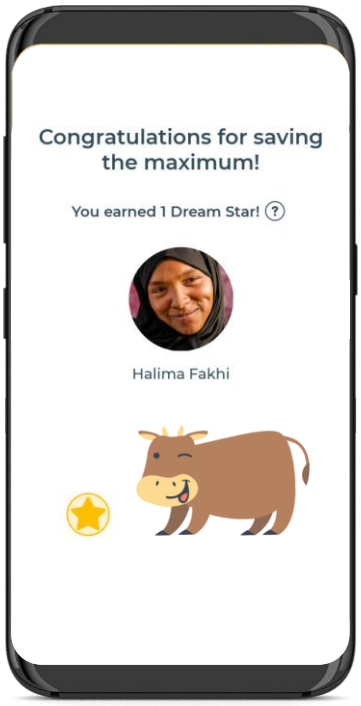




**Figure 7: Earning Dream Stars**

DreamSave employs a wide range of gamification techniques to engage members and motivate positive behavior. For example, members can earn “Dream Stars” through consistent attendance, achieving savings goals, and repaying loans on time or early. These awards use a variety of animation and sound effects to draw in group members who may not be able to see the phone screen.

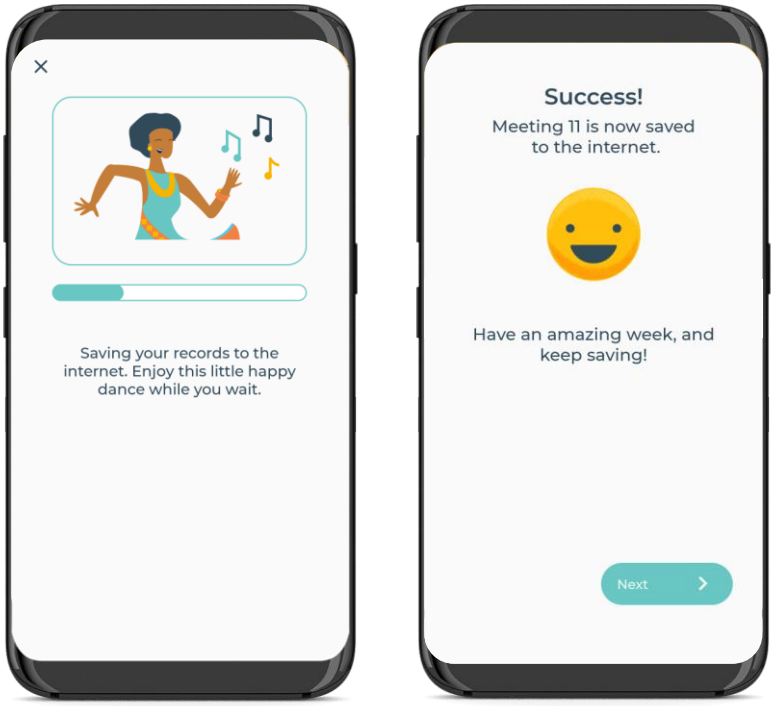



**Figure 8: Backing up Meetings**

DreamSave runs entirely offline. Whenever a mobile signal is available, the app automatically saves all group records to the cloud through a secure connection. This data belongs to the group and is kept secure and private at all times.

If a mobile signal is not available, groups can continue holding offline meetings indefinitely. The app will back up their data automatically any time a mobile signal is discovered.

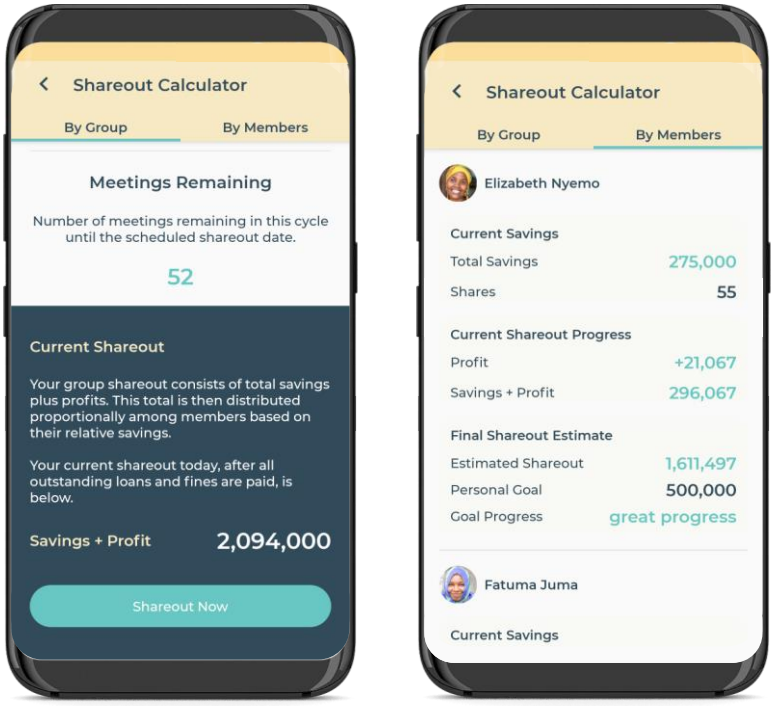



**Figure 9: Shareout Calculator**

With traditional paper-based groups, calculating shareout manually often takes several days and is a frequent source of group conflict.

DreamSave simplifies this process with a Shareout Calculator that shows running totals by group and by member. As a result, members see the impact of their actions on future earnings in real-time each week, instead of waiting until the end of a year-long cycle.

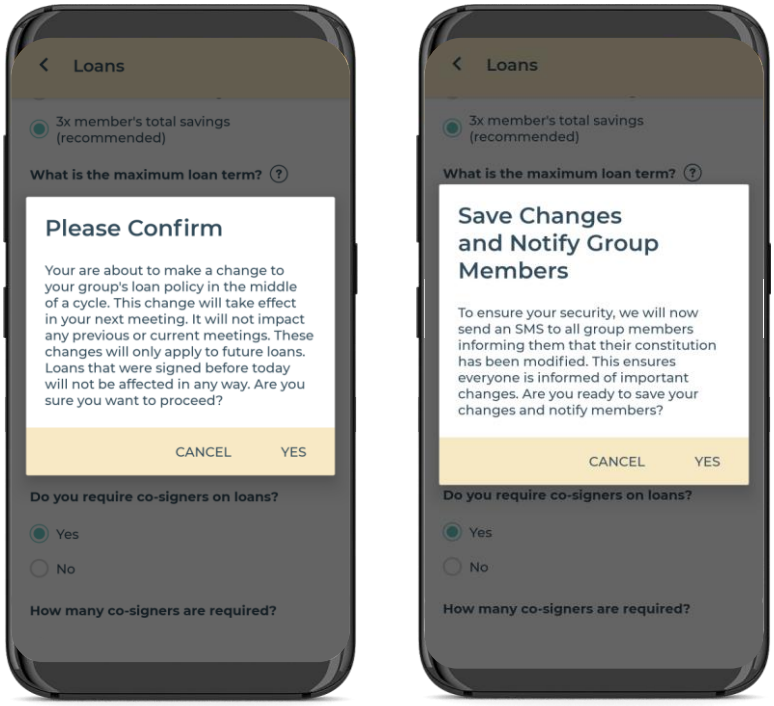



**Figure 10: Changing Group Policies**

Groups can change their loan terms and other policies at any time during the cycle. This flexibility can be especially important if economic conditions change in the region.

For security purposes, all members are notified by SMS of any policy changes to their group. This transparency protects vulnerable members by ensuring leaders cannot change terms behind their backs.

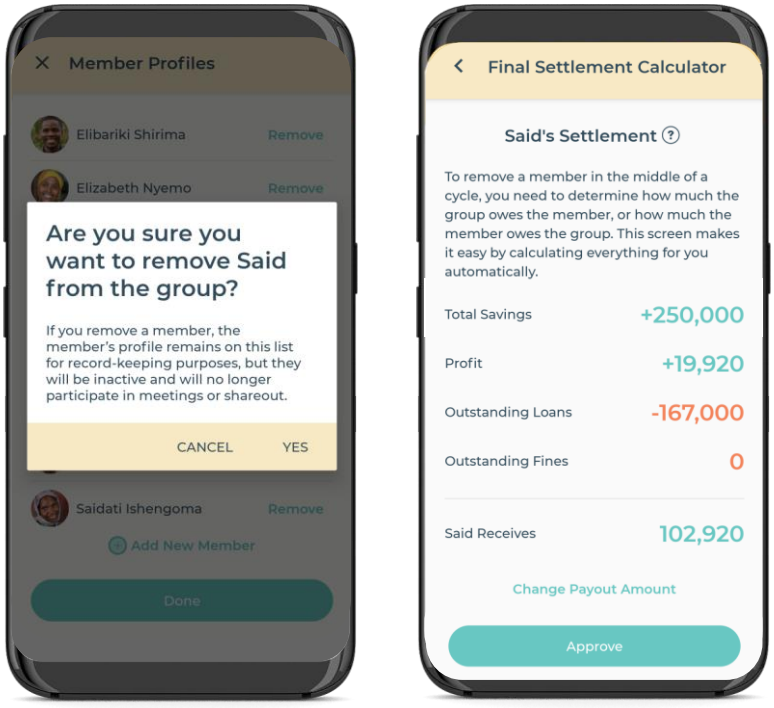



**Figure 11: Removing Members**

Next to each member's name on the member roster is a green link that says "Remove". This can be used to remove a member who leaves the group mid-cycle.

When this option is selected, DreamSave calculates that member's relative share of group earnings in the cycle, and subtracts any outstanding loans, to determine the final settlement amount. Groups can modify this amount if needed.

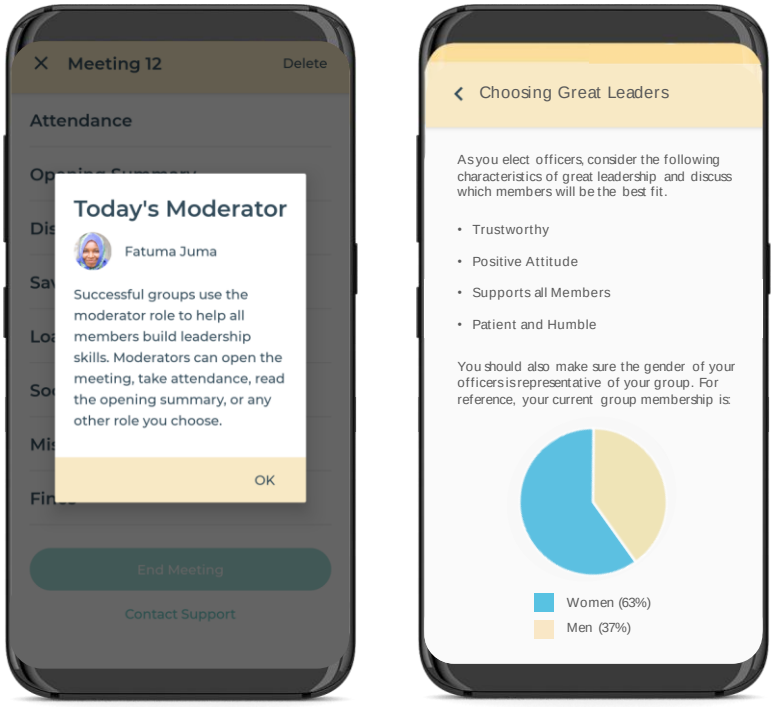



**Figure 12: Leadership Development**

DreamSave includes multiple features designed to encourage broader leadership development, especially among women.

For example, the app offers a rotating moderator role that gives every member an opportunity to practice leadership (left screen). And when electing officers, it shows the current gender mix of the group to encourage more representative elections (right screen).

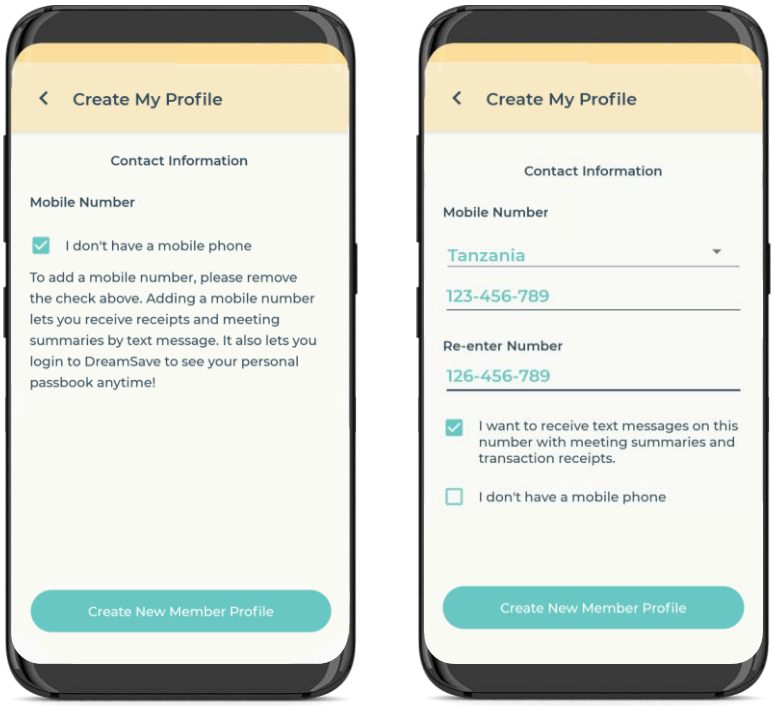



**Figure 13: Member Phone Numbers**

During setup, members who have their own phone can choose to receive personalized meeting summaries and transaction receipts at the end of each meeting.

If a member shares her phone with a spouse or other family member, she will typically choose to keep this feature turned off to ensure her private financial information is not shared with others.

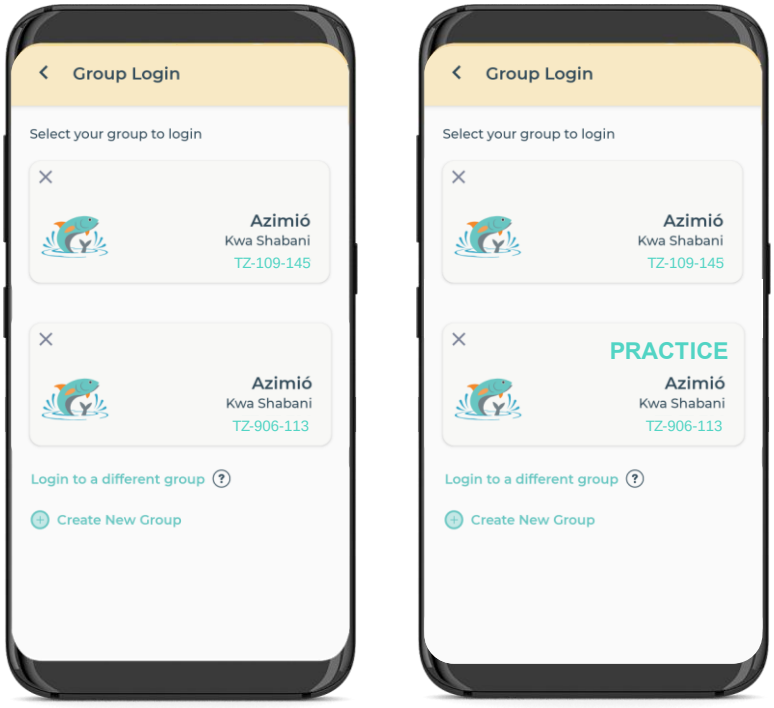



**Figure 14: Practice Groups**

Practice groups are one simple example of how DreamStart Labs made improvements to the app based on the findings of this study. After a few weeks, PCI noticed that some groups were creating practice groups with the same name and logo as their real group, which created confusion at login (left screen). To address this, DreamStart Labs modified the login screen to more clearly differentiate practice groups (right screen).

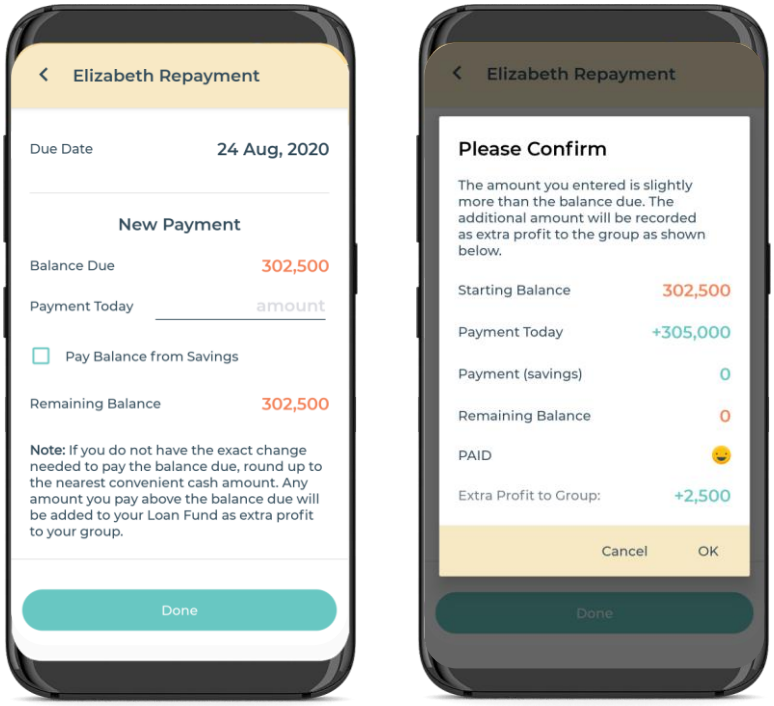



**Figure 15: Rounding Policy**

Rounding uneven currency amounts is another example of an improvement that was made to DreamSave as a result of this study.

Initially, the app automatically rounded off amounts that were difficult to pay in local currency. In practice, this confused some members, so the process was simplified. Today, if a member doesn't have the exact change, the app records any overpayment as extra profits to the group.

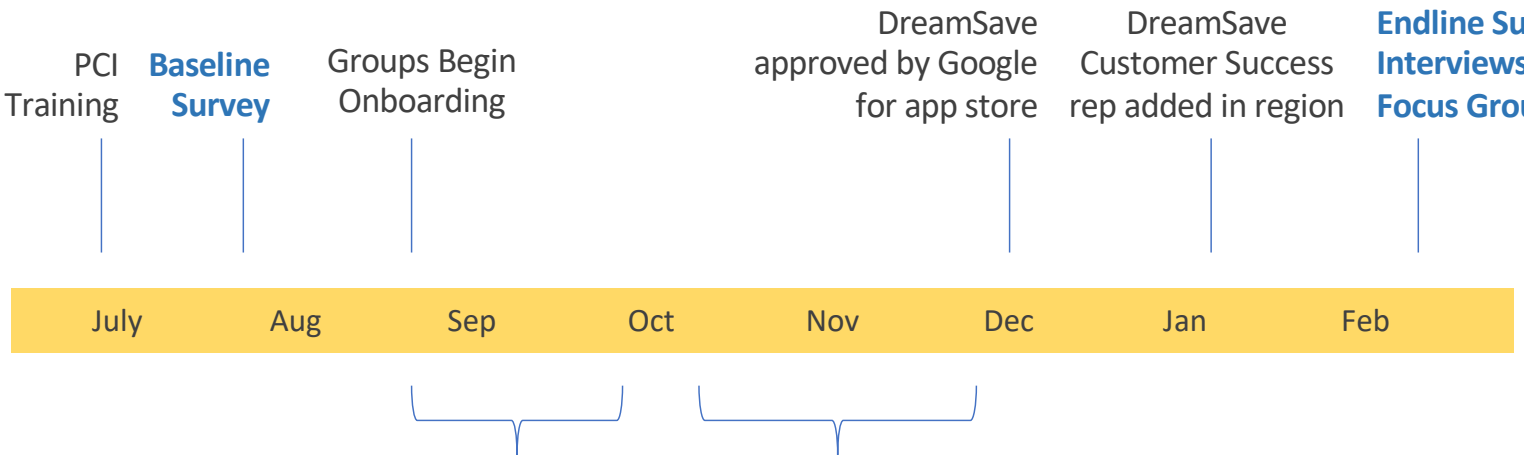
## Annex 2: DreamSave Enhancements During Study Period

The following table provides a summary of enhancements DreamStart Labs made to DreamSave during this study that came directly from observing end users and field staff in this project.

| CHALLENGES OBSERVED IN THE FIELD DURING THE STUDY PERIOD | ENHANCEMENTS MADE IN DIRECT RESPONSE TO FIELD OBSERVATIONS |
|---|---|
| **DATA ENTRY ERRORS**<br><br>Even though DreamSave automates all calculations, it is still possible for users to enter the wrong data. In the first few weeks, we noticed bookkeepers in some groups making very basic data entry errors (e.g. Typing 10,000 instead of 1,000 or entering the number of currency units instead of shares). We realized most of these errors could have been caught by the app. | **SMART ALGORITHMS TO CATCH ERRORS**<br><br>All user input fields in DreamSave now have smart algorithms built into them to catch user entries that look questionable. When a number is entered that seems incorrect, users see a friendly pop-up message with specific hints such as "That number seems a little high, are you sure?". This improvement simplified data entry and made user errors far less likely. |
| **LOGGING INTO TEST GROUPS BY MISTAKE**<br><br>During DreamSave training, new users often create practice groups to learn the setup process. In this pilot, some trainers unfortunately created multiple practice groups with the exact same name as real groups. Members who logged into these test groups by mistake saw practice data instead of real data and became worried that the app had somehow changed their records. | **IMPROVED PRACTICE GROUPS**<br><br>To prevent users from making this mistake, we changed the look-and-feel of practice groups to make them visually distinct on the login screen and dashboard. We also made it easier to delete old practice groups directly from the login screen. These enhancements eliminated the problem. |
| **NON-ROUTINE ACTIONS**<br><br>One interesting challenge we saw with some groups came when they wanted to change something in the app (e.g. removing a member from the group, changing an interest rate mid-cycle, reversing a transaction, etc.). While these functions were all supported in the app and seemed intuitive in user testing, we noticed some new smartphone users were hesitant to try anything new for fear of making a mistake. | **FRIENDLY TIPS AND VISUAL CUES**<br><br>To address this, we added several friendly tips, hints, and visual cues throughout the app to ensure groups know how to make changes and feel safe doing so. In some cases, this involved adding a timely pop-up with a happy face, changing the color of button to green, or placing options in more prominent locations with a friendly look-and-feel to make sure new smartphone users feel comfortable making changes when needed. |
| **AUTO-BACKUP WAS TOO TRANSPARENT**<br><br>DreamSave works entirely offline and backs up records automatically whenever a mobile network is available. This innovative process is | **MORE VISIBLE BACKUP PROCESS**<br><br>Several improvements were made to give users more confidence. These include: |

| | |
|---|---|
| optimized for rural 2G networks and works even if the DreamSave app is not open.<br><br>Since this process is entirely transparent and automatic, some groups didn't always realize their records were being backed up. This was especially true during rainy season when mobile networks were spotty, and backups didn't always happen immediately after a meeting. This created unnecessary worry for groups in the early part of the study. | • "Last Backup" timestamp made more visible on the main dashboard<br>• If a backup is not current (e.g. group turned off phone after the meeting), the "Last Backup" time is displayed in red and invites users to try a manual backup<br>• Manual "Backup Now" buttons added so groups can initiate a backup anytime<br><br>These changes improved confidence and helped reassure groups their data was safe. |
| **OPTIONAL ROUNDING POLICY**<br><br>Initially, the app included an option to automatically round off cash amounts that were difficult to pay in local currency. While this rounding policy was optional, it confused some groups who didn't fully understand it. | **ALLOW CASH OVERPAYMENTS**<br><br>Today, if a member doesn't have exact change, the app simply records any overpayment as extra profit to the group and makes the process clear and simple. Users responded positively because it mirrors how they handle uneven currency in daily life. |
| **MANUAL APP UPDATES**<br><br>In the beginning, PCI community facilitators had to manually distribute new app updates as a result of delays from Google on their Play Store distribution process. This required manual steps and lead to some delayed and inaccurate app installations. | **AUTOMATIC UPDATES FROM APP STORE**<br><br>Midway through this study, DreamSave was approved for distribution on the Google Play store. This greatly simplified app updates, making the process much simpler and ensuring correct installations with full verification and data integrity assurance. |
| **STANDARD PHONE SUPPORT**<br><br>In the beginning, there was no support feature built into the DreamSave app. If an NGO staff member or group had a question, they would proactively contact DreamStart Labs by phone or WhatsApp. This method proved challenging in part because it was easy for groups to inadvertently communicate inaccurate or incomplete information to support staff. | **"SMART TICKET" PHONE SUPPORT**<br><br>Today, groups can also press a "Support" button in the app, and a DreamSave agent will be automatically sent a detailed support ticket including all the relevant and accurate information about the group. A local language support agent then calls the group, ready to help. This has dramatically improved the quality of communication and support. |

## Annex 3: Born Digital Savings Group Pilot Study Timeline




**Communication Challenges**

Feedback from groups did not consistently get to the DreamSave team effectively in the first few weeks. This resulted in some delays in responding to early user feedback.

**Manual App Updates**

Once these communication issues were resolved, a series of app updates were quickly provided to respond to ideas for improvement from users. While these updates were well received by groups, DreamSave was not on the Google Play app store yet, so app updates had to be done manually.

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