



Experiencing impact: Evidence on financial services and women's empowerment

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Authors' note

In 2017, Women's World Banking made the bold decision that we would conduct ten rigorous impact studies within the next ten years. The financial inclusion community has nearly two decades of impact evaluations, but most of these studies focused on the presence versus absence of financial services. Women's World Banking strongly believes that our approach to designing financial services—through sustained attention to women's unique needs—increases active use of financial services and in turn the impact that these services have on the material, cognitive, perceptual, and relational aspects of women's lives. We hold ourselves to a higher standard, comparing those who are merely accessing financial services with those who receive a solution designed to increase active use. This summary paper is our transparent findings from the first three of these ten studies, conducted between 2020 and 2023.

Women's World Banking has been impact-driven throughout our 45 years of work with women. Our history is filled with countless stories of the ways financial inclusion has impacted the lives of individuals and communities. At the same time, we recognize that measurement tools have evolved over the past decades, offering new opportunities to build evidence on the linkages between financial inclusion and economic empowerment.

The findings we share in this summary paper are encouraging indications that financial inclusion has a strong, positive link with economic empowerment, even among the harder-to-measure and difficult-to-change dimensions of empowerment. Throughout our impact evaluations, we use the most rigorous techniques possible to measure and assess change within the constraints of working in real-life conditions. The rigor we use means that where we report statistically significant findings we are very confident our findings are representative and

repeatable. Where we do not see strong, statistically significant findings it likely means our research instruments were not sensitive or precise enough to pick up change. It could also mean there is a breakdown in the causal pathway, and things aren't working as expected. We hope and trust this contribution to the literature on economic empowerment increases attention to the transformative power of financial inclusion.

Our studies are all quasi-experimental, utilizing difference-in-difference methods to assess impact. We complement survey data with administrative data, qualitative interviews, and other methods where necessary. In part to increase objectivity, every study includes an external academic researcher, and we are grateful to Dr. Fabrizio Valenti, Dr. Sabina Yasmin, and Dr. Jonathan Fu who were part of the Women's World Banking research teams involved in the studies represented here.

We are also grateful for the trust of our colleagues who agreed to have their work assessed. They worked to ensure precision in the deployment of new financial products, channels, and programs so that our team could maintain conditions favorable to studying impact. We owe a debt of gratitude to the hundreds of enumerators working with Lead in India and IndoChina Research in Cambodia who spent countless days ensuring the voices of women were properly represented. Jenny Morgan (CGAP) and Abdoulaye Ndiaye (J-PAL) provided generous reviews of the final draft. Our funders for this work included Visa Foundation, the Bill & Melinda Gates Foundation, the Swedish International Development Cooperation Agency, and the Australian Government Department of Foreign Affairs and Trade. We are grateful for their trust and support. The views expressed in this publication are the authors' alone and not necessarily the views of these funding institutions. Finally, we thank the thousands of women who gave their time to be surveyed. They entrusted their stories to us, and their contribution to this work is invaluable.

The authors of this report are Jaclyn Berfond, Sonja Kelly, Justin Archer, and Manasi Pant.

Our economic empowerment vision

Women's World Banking is committed to building evidence on the relationship between women's financial inclusion and women's economic empowerment. We define women's financial inclusion as having the choice to access a full suite of responsibly delivered financial services in her own name and the capability to use those services to meaningfully manage financial needs across her lifecycle. This definition distinguishes Women's World Banking's interventions from those focused primarily on access.

We have seen and experienced the transformative power of using financial services for women's economic empowerment. In the past five years, Women's World Banking has heard from over 24,000 women through our research. We have spoken to women who have used accounts to save for their children's school tuition, women who accessed productive credit for the first time and were able to start or grow their small business, women who save valuable time by more easily sending money to family, and women who feel more secure knowing they have insurance in case they need to go to the hospital. We have seen the difference in how women talk about their financial lives once they have the choice to access and capability to use financial services – they are confident, they are in control, they are proud.

This harmony of voices insisting that financial services strongly impacted their finances, thinking, perceptions, and relationships is not enough to answer the question of what would have happened without active use of financial services. Women's World Banking deploys rigorous impact evaluations to answer this question, contributing to the understanding of the drivers of economic empowerment and improving our work. Women's World Banking is conducting ten quantitative and qualitative impact evaluations over the course of our ten-year strategy, assessing the impact of the interventions we designed using our women-centered design approach. This paper is the culmination of the first three of these rigorous and resource-intensive studies on our signature approach to advisory services with financial services providers (FSPs). Included in this report is both a synthesis of our demonstrated impact to date and a detailed look at the outcomes within each study.

We have spoken to women who have used accounts to save for their children's school tuition, women who accessed productive credit for the first time and were able to start or grow their small business, women who save valuable time by more easily sending money to family, and women who feel more secure knowing they have insurance in case they need to go to the hospital. We have seen the difference in how women talk about their financial lives once they have the choice to access and capability to use financial services – they are confident, they are in control, they are proud.

Defining economic empowerment

Defining economic empowerment is difficult. First, the portrait of an "empowered person" may differ by community or even household. Second, it is dynamic, rather than static. Our definition of women's economic empowerment is multi-dimensional and integrated into our mission, vision, and values. Our mission is to "expand the economic assets, participation and power of low-income women and their households by helping them access financial services, knowledge, and markets." Put simply, we aim to economically empower women through financial inclusion.

Our definition also considers economic empowerment as a process rather than as an end-state. We build off the work of Dr. Martha Chen, who developed a conceptual framework to monitor the impact of microfinance on women's lives, identifying four pathways through which women experience change. We have adapted these to our four dimensions of Women's Economic Empowerment (WEE):

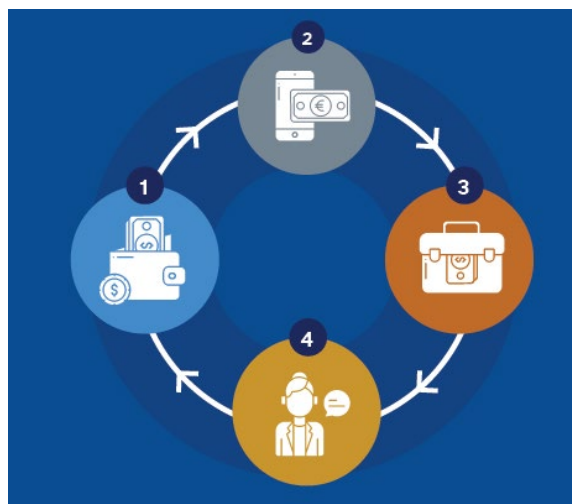
1. **Material change** focuses on change in earning capacity, income, assets, and her ability to meet basic needs. It reflects the more tangible changes women experience as they access and use financial services.
2. **Cognitive change** refers to changes in awareness, knowledge, and skills. It is a vital component of women's economic empowerment as women often have lower education levels, lower digital and financial literacy, and less trust in financial services at the outset.
3. **Perceptual change** is focused on change in women's self-awareness and confidence, as well as her perceived financial security and vision for her future.
4. **Relational change** includes changes in financial decision-making, control over resources, participation, visibility, and respect. It is an important part of economic empowerment as it reflects women's agency in relation to her family, her peers, and her community.

There are many concepts of women's economic empowerment. Naila Kabeer defines empowerment as the process by which women take control and ownership of their lives through expansion of their choices and can be thought of in terms of three inter-related dimensions that make up choice: resources, agency and achievements. The Bill & Melinda Gates Foundation says that "A woman is economically empowered when she has access to: skills, resources, and institutions necessary to effectively participate in markets; [and the] power and agency to act on personal preferences in making economic decisions, including the control of personal and household resources." Our WEE framework similarly addresses these core concepts, with material and cognitive change enabling women to build resources, and perceptual and relational change contributing to her agency, power and participation.

For every Women's World Banking intervention, we map out the economic empowerment outcomes we expect at the outset and design with these outcomes in mind. We use a variety of methods to measure change across these

dimensions, including administrative data from FSP partners, surveys and interviews with women customers, and rigorous impact evaluations. Some of the dimensions of change are harder to measure than others, and a diversity of tools enables us to assess the changes in financial behavior and felt experiences of women, contributing to our understanding of their economic empowerment.

Figure 1: Women's economic empowerment operationalized through 1) material change, 2) cognitive change, 3) perceptual change, and 4) relational change



Source: Women's World Banking's interpretation of Chen (1997).

The evidence gap

There has been a proliferation of impact evaluations on financial inclusion interventions over the last 15 years. This literature shows impacts of financial inclusion on women's material resources. Despite the asserted linkages with women's economic empowerment, there is inconclusive evidence illustrating non-material changes in economic empowerment.

The literature finds that use of savings, loans, and insurance products leads to moderate increases in assets, reduction of debt, and investments in businesses, health and education. Active use of accounts in Kenya¹ led to an increase in women's saving and investment in their businesses. Low-cost savings accounts in Nepal² enabled female heads of households to experience a more than 50 percent increase in monetary assets, a more than 16 percent increase total assets, and increased investments in health and education relative to the control group. Formal bank account usage in Chile led female street vendors to reduce their informal, short-term debts by up to 20 percent,

¹ Dupas & Robinson (2013).

² Prina (2015).

grow resilient to shocks, lower financial stress³ and related risky coping mechanisms such as transactional sex.⁴ A study in India found that access to a bank account alone is not sufficient to lead to positive outcomes - supplementing an account with capacity-building can lead to increased labor force participation and private sector earnings.⁵

Access to credit has resulted in positive outcomes for women, such as a 1.6 percentage point increase in self-employment and having independent bank accounts in India,⁶ and a 3 percentage point increase in average child weight gain over seven years in Indonesia.⁷

Saving groups led to increased savings, increased credit opportunity, increased loan size, more control over education and more spending (Ghana, Uganda, Malawi).⁸ Savings groups led to more household assets (Mali)⁹ and fostered entrepreneurship (Uganda).¹⁰

Finally, insurance promoted women's food security and agricultural outcomes in West Africa.¹¹ In India, insurance usage led to a rise in health-related expenditure from 12.3% to 244%, while improving health-seeking behaviors.¹²

There are gaps in the literature around non-material changes in women's economic empowerment. Definitions of women's economic empowerment are often restricted to material changes in savings and resilience to economic shocks. Many studies also suffer from a lack of streamlined definitions, with diverging understandings of economic empowerment.¹³

A more holistic view of empowerment incorporates the ability to access material, human, and social resources that strengthen the ability to exercise one's agency, as well as the avenues and capacity for women to participate in decision-making. Currently, there remain major gaps in the scholarly work of measuring impacts related to women's ability to earn a livelihood and their representation in their communities. There is also a limited exploration of changes in intra-household decision-making processes, and growth in social capital as an outcome.¹⁴

Women's World Banking's contribution

Our approach to comprehensively measuring women's economic empowerment maintains an emphasis on measuring women's material, perceptual, cognitive, and relational changes. This report fills in the gaps in the literature by considering metrics such as future planning, aspirational changes and bargaining power within the household, all of which push economic empowerment beyond its material dimension.

Beyond its contributions to the impact evaluation literature, Women's World Banking's commitment to evaluating impact calls all financial inclusion advocates to build evidence to support the bold claims they make about the impact of their work. While not easy, in a time of scarce resources and growing threats to progress made on economic empowerment, rigorous evaluation is one of the best ways to ensure intent leads to impact.

Box 1: Why we care about control groups and statistical significance

It is hard to establish impact without assessing a counterfactual (what would have happened in the absence of an intervention). In all our impact evaluations we establish a "control group" that does not get the solution alongside a "treatment group" that does get the solution. We also conduct analysis on the results to establish which of our findings are "statistically significant," meaning we are confident they were not due to chance, and we differentiate between statistically significant and other results. We report findings where possible at the 90% confidence level. In math terms, this threshold means if we conducted this same study 100 times, we would be confident the change could be attributed to the solution 90 times.

³ Kast & Pomeranz (2018).

⁴ Jones & Gong (2021).

⁵ Field et al. (2019).

⁶ Menon & van der Meulen Rodgers (2011).

⁷ DeLoach & Lamanna (2011).

⁸ Karlan et al. (2017).

⁹ Beaman et al. (2014).

¹⁰ Blattman et al. (2016).

¹¹ Delvallade et al. (2015).

¹² Prinja et al. (2017).

¹³ Duvendack & Mader (2020).

¹⁴ Lwamba et al. (2022).



Impact summary

There is strong evidence supporting the relationship between financial inclusion and women’s economic empowerment as we look at interventions with Ujjivan (India), Bank of Baroda (India), and Wing (Cambodia). Women saved more and chose more secure places to save. In one study, women customers with the solution saved \$15 more on average than the control group and were 26% less likely to keep savings at home in cash. Women had greater confidence, increasing their capability to conduct more transactions, from sending or receiving money to paying bills. They felt more resilient and prepared to handle financial shocks. In one study, 58% of women customers with the solution could come up with emergency funds, compared to 48% for the control group. Women engaged more in household financial decisions, either as the sole decision-maker or jointly with another family member. Taken together, these findings tell a story of how digital financial capability, use of accounts and savings build women’s economic empowerment. We summarize these findings in Table 1.

TABLE 1. SUMMARY OF EVIDENCE

	MATERIAL	COGNITIVE	PERCEPTUAL	RELATIONAL
	Women save more or more frequently	Women have more confidence and choose more secure, formal places to save	Women feel more prepared to handle financial shocks	Women participate more in household financial decisions
SIGNIFICANT*	Ujjivan’s women customers who accessed the savings solution made 19 more deposits on average over the course of the year when compared to the control group.	Bank of Baroda’s women customers who accessed the savings solution were 57% more likely to keep savings in their PMJDY account.	At Ujjivan, 58% of women customers who accessed the solution could come up with emergency funds within 7 days for a sudden need (compared to 48% of the control group).	Ujjivan’s women customers who said they were the sole decision-maker on savings in their household increased by 12 percentage points after receiving the solution (compared to a 3-percentage point increase among the control group).
COMPELLING BUT NOT SIGNIFICANT	The proportion of Bank of Baroda customers who made a meaningful (\$6) deposit in the past 3 months increased from 35% to 41%. Bank of Baroda’s women customers who accessed the savings solution saved ₹1,250 (\$15) more on average than the control group.	Wing’s women customers who received the solution increased their confidence in making different types of transactions, from an average rating of 3.85 to 4.6 out of 5. Ujjivan’s women customers who accessed the solution chose to save more of their income in formal channels (71% of their income on average at endline compared to 33% at baseline).	At Bank of Baroda, 72% of women customers who accessed the savings solution could come up with emergency funds within 7 days for a sudden need. After receiving the Wing solution, 72% of women customers had an emergency fund large enough to cover unplanned expenses (compared to 57% at the baseline).	Bank of Baroda’s women customers who said they participate in savings decisions increased by 21 percentage points after receiving the solution (compared to a 10-percentage point increase among the control group).

Source: Data include survey responses and administrative data collected between 2020 and 2023. *Asterisk indicates confidence at the 90% level even after controlling for other demographic and contextual factors. Full case studies are found in the following sections.

Case studies of impact

The three completed impact evaluations focused on solutions to drive engagement of women account or mobile wallet holders. While the solutions were different – in target segment, in geography, in components to drive behavior change – the underlying hypothesis was that by raising women’s knowledge about her account, and ensuring she had the capabilities to use it, women would actively use the services, resulting in financial security, and ultimately, economic empowerment. The three interventions studied are:

- **Ujjivan Small Finance Bank (India):** A solution for micro loan customers, to build awareness of an existing savings account and encourage use of the account for saving.
- **Bank of Baroda (India):** A solution to reach and welcome female Pradhan Mantri Jan Dhan Yojana (PMJDY or “Jan Dhan”) account holders, to make saving with the bank relatable and rewarding, and to develop channels to deepen engagement.
- **Wing (Cambodia):** A peer training solution for factory workers to more actively engage with the mobile wallet through which they receive their salaries.

In order to assess the impacts of these solutions, teams of researchers from Women’s World Banking and independent institutions conducted quasi-experimental impact evaluations with a treatment and control group.¹⁵ We also complement these findings with results from qualitative research and administrative data (portfolio and customer-level data from internal FSP information systems) where available and appropriate. Results for each study are detailed both in the following case studies and in the tables in the Annex.

Nudging goal-based savings through Ujjivan Small Finance Bank in India

Women’s World Banking together with Ujjivan Small Finance Bank in India developed a solution for microloan customers. The intervention aimed to build awareness of an existing savings account that accompanied the loan and encouraged use of the account for saving. The solution was designed with four components: 1) a “My Ujjivan Savings” marketing campaign, 2) a card to track savings goals and amount saved each month, 3) reminders by Customer Relationship Officers to save at monthly group meetings, and 4) public recognition for groups that saved the most. However, due to restrictions on group meetings during Covid, the rollout of the solution ultimately focused on the savings goal card and information about savings shared by Ujjivan staff at the branch during loan disbursement. The solution was rolled out in the fall of 2021, with a baseline survey conducted just before the intervention rollout. The endline data collection was in the fall of 2022.

Women’s World Banking’s hypothesis was that the savings information and goal card would increase women’s awareness of the benefits of the Ujjivan account and enable her to set personal savings goals, which would prompt her to start saving. Over time, the intervention was designed to increase women’s trust in Ujjivan and lead to her to save more, which would ultimately lower her financial stress and economically empower her to participate in financial decisions.

Impact: We found that women who received the solution increased their awareness of the account features and built trust in Ujjivan as a secure place to save. These women started using their Ujjivan accounts more. Overall savings balances at Ujjivan did not increase, but the treatment group “shifted” a greater proportion of their savings to formal channels. Women who received the solution were more resilient and more likely to participate in financial decisions, key elements of economic empowerment.

¹⁵ Full write-ups of these impact evaluations are at various stages of publishing in the academic literature, and are available on request.

These outcomes are framed as a series of questions below. It is notable that the control group in this case was also Ujjivan customers with loans and savings accounts, so the intervention we were measuring was not a financial service but rather an awareness mechanism and behavioral nudge.

Material change:

Have women started saving at Ujjivan? Yes. When women customers were asked what services, beyond their loan, they had used from Ujjivan at the endline, women in the treatment group were 2.3x more likely than the control group to say their savings account. Further, women in the treatment group increased their likelihood to have reported ever depositing money into their Ujjivan account by 13 percentage points (compared to a 5-percentage point increase for the control). This finding supports the hypothesis that when women are aware of the features and benefits of their account, they will start using that account to save.

Do women build balances in their Ujjivan accounts? Yes, but this change may be due to other factors. Administrative data from Ujjivan shows overall increasing balances in their savings portfolio among women microloan customers (more than doubling average account balances from approximately INR 700 to INR 1,700). However, there were no consistent trends demonstrating that customers who received the intervention had higher (or lower) balances over time. Further, in the impact evaluation, there were no statistically significant differences between women in the treatment and control group in terms of how much they reported saving in their Ujjivan account.

What we did see, however, was customers who were exposed to the intervention we designed with Ujjivan were more likely to “shift” their financial services to formal channels overall—sometimes with other financial institutions. The proportion of savings (“share of wallet”) in formal sources increased from 33% to 71% of total savings among the treatment group.

Do women increase savings and build household assets? No, but this is likely due to Covid. Overall, women surveyed reported saving less in both formal and informal mechanisms over the course of the study. Given that this decrease occurs in both the treatment and control groups, this is likely due to environmental conditions more broadly, most notably the impacts from Covid. At the endline, 76% of respondents saw reduced business income due to Covid, and 78% of respondents said they had to tap into more than half of their existing savings to cover expenses during the pandemic. 58% said they were still finding it difficult to save.

Cognitive change:

Are women aware of account features and benefits? Yes. We found near universal awareness of the Ujjivan account, with 99% of both the treatment and control groups naming Ujjivan at the endline when asked where they have an account. Ujjivan borrowers are automatically given an account when they receive their loan, so awareness is not assumed. In order to assess understanding of the account features and benefits, we used a proxy of customers who used the account for different purposes and found that the treatment group was slightly more likely to have used the account for other financial transactions like sending or receiving money, making a purchase or bill payments.

Do women trust Ujjivan as a secure place to save? Yes. Trust is both an input to and an outcome of savings behavior. Women need to trust that their money is safe at Ujjivan in order to use the account, and by using the account, this trust is validated and can inform future account use. We believe that trust was integral to the outcomes demonstrated – namely starting and continuing to use Ujjivan as a place to save. When asked where they usually save, women in the treatment group were 2.5x more likely than the control group to say Ujjivan. Further, women in the treatment group saved more frequently, from a reported 11.9 deposits at baseline to 28.3 deposits per year at endline.

Perceptual change:

Are women setting savings goals? No, but this may not be a necessary step to increase savings activity. While all women surveyed increased their likelihood of articulating a savings goal, the increase over time was larger for the control group, signaling that it was not the intervention that drove this change. While the solution included a goal-setting card as a key component, this finding signals that it may not have been the driving factor in the behavior changes experienced. Instead, we hypothesize that it was the communications around savings that accompanied the card, as well as more broadly throughout Ujjivan, that may have led to stronger savings behavior.

Do women have lower financial stress? Yes. We see indications that women have increased resilience in the face of financial shocks, which we believe is correlated with lower financial stress. At the endline, we asked women if they could come up with INR 7500 (\$90) in 7 days for a sudden need. 58% of the treatment group said it was “very” or “somewhat” possible (compared to 48% of the control group). This finding also demonstrates that Ujjivan customers overall are more resilient when compared with the 44% of people in developing countries globally who say that they could access relatively similar amounts of money in 7 days with little or no difficulty.¹⁶

Relational change:

Do women participate in financial decisions? Yes. Women in the treatment group had an increased likelihood of saying they were the sole decision-maker in savings decisions (an increase of 12 percentage points from baseline to endline compared to a 3-percentage point increase for the control group). This trend was similar for decision-making on how to spend loan money, as well as decision-making on purchasing expensive goods.

Other notable findings:

Beyond the articulated outcomes for the intervention, the study revealed some additional findings with implications for women’s savings behavior and economic empowerment.

- **What women are saving for changes over time.** At the endline, women were more likely to be saving for children’s education and marriage, home improvements, preparation for emergencies and medical treatment. They were less focused on investing in businesses or general financial security. We hypothesize that this change is driven by Covid, and renewed focus on re-building savings that may have been depleted. This hypothesis is further supported by the fact that these changes were experienced by both the treatment and control groups.
- **Women are not transacting independently.** Over 70% of women surveyed have someone help them to withdraw money, and for most it is their husband or son. This was universal, with no change over time, and no difference between treatment and control. However, it does indicate that there is more to be done to build women’s digital financial capabilities and empower them to transact independently.
- **Social and gender norms are evolving.** Over the course of the study, women respondents increased their likelihood of disagreeing with statements that a woman having power takes power away from her husband, that sons are more useful than daughters, and that it is more important for boys to go to school. These changing perceptions indicate evolving social and gender norms, which also contribute to women’s perceived empowerment.

Our research and data analysis indicate that the intervention with Ujjivan Small Finance Bank successfully achieved many of the intended women’s economic empowerment outcomes, even with challenges to the deployment and research due to Covid. The learnings will be incorporated into the design of future savings solutions and represent an indication of the women’s economic empowerment impact for Ujjivan’s more than 4 million women customers.

Encouraging active engagement with accounts at Bank of Baroda in India

Women’s World Banking together with Bank of Baroda in India developed a solution for women and men Pradhan Mantri Jan Dhan Yojana (PMJDY or “Jan Dhan”) account holders. The intervention was intended to make saving with the bank relatable and rewarding and to simultaneously develop channels to deepen engagement. The cornerstone of the solution was the Jan Dhan Plus savings scheme, which encourages customers to save a minimum of INR500 (\$6) at least once per month for five months to be eligible for an overdraft on their account. This incentive came with marketing collateral, tools, and games to nudge savings, and direct communications to customers. In addition, Women’s World Banking and Bank of Baroda trained, supervised, and incentivized bank agents called Business Correspondents (BCs) to better engage with women customers and offer a variety of services, including the Jan Dhan Plus scheme, microinsurance, and micro pension products. The solution was rolled out in mid-2021, a midline survey was completed in early 2022, with an endline survey completed in early 2023. This data allows us to explore statistically significant differences in

¹⁶ Demircuc-Kunt et al. (2021).

responses to key survey questions at the endline, while using midline responses and other sociodemographic information to identify the impacts attributable to the solution.

Women's World Banking's hypothesis was that as BCs and branches increased engagement with customers, and as customers learned more about the benefits of savings and related products, these customers would feel welcome by the bank and find a range of services that meet their needs. Over time, the intervention was designed to prompt women to start saving with the bank, access overdrafts as needed, and enroll in other products like insurance and pensions, moving them to deeper engagement with formal financial tools. In the longer-term, the solution would enable women to grow their account balances and feel more financially secure, economically empowering them by conferring confidence in their capabilities, strengthening their autonomy, and enabling them to participate in financial decisions.

Impact: We found that women who received the solution started saving with the bank, moving from informal to formal financial mechanisms, and increasing balances in their accounts. The evidence is mixed on whether the solution led to women being more aware of the range of services available, and whether they were more likely to access products like insurance or credit. Women who received the solution were more resilient and while measures of decision-making and autonomy increased for women, it was not always directly related to the intervention.

These outcomes are framed as a series of questions below. It is worth noting that in this study the control group not receiving the intervention was made up of other Jan Dhan customers of Bank of Baroda in areas without the focus on account activation. In this study we also surveyed men in the treatment and control areas at the request of Bank of Baroda.

Material change

Do women start saving with the bank? Yes. Administrative data from Bank of Baroda showed that the percentage of Jan Dhan customers making at least 1 deposit of >INR500 (\$6) in the last 90 days increased from 35% to 41% during the pilot. Further, women who received the solution were more likely to report depositing money in their Jan Dhan account, with an 11-percentage point increase from baseline to endline for the treatment group (compared to a 2-percentage point increase for the control group).

Do women move from informal to formal savings mechanisms? Yes. Women who received the intervention were 57% more likely than the control group to name their Jan Dhan account at Bank of Baroda as the place they keep their money to save. That is accompanied by women in the treatment group being 26% less likely than the control group to keep savings at home in cash, confirming the hypothesis that women are shifting from informal to formal savings mechanisms.

Do women become active savers and grow their balances? Yes, women grow their balances, but there is mixed evidence on savings activity. Administrative data from Bank of Baroda shows that savings balances for women enrolled in the Jan Dhan Plus scheme was 51% higher than the broader Jan Dhan portfolio. The surveys further supported this, with women who received the intervention increasing their savings in the Jan Dhan account an average of ₹1,250 (\$15) as compared to the control group. However, this growth in balances does not appear to be driven by frequency of savings, based on the self-reported surveys, which showed a slight decrease in frequency for both the treatment and control groups.

Do women access the related credit, insurance, and pensions products? Maybe. Administrative data from Bank of Baroda showed that women who were saving also increased uptake of other financial products, including overdrafts (102% increase), life insurance (46% increase), accident insurance (24% increase) and pensions (119% increase). However, in the impact evaluation, we didn't detect any change in women reporting having insurance, in either the treatment or control groups, and too few women availed of the overdraft facility to understand the implications of the solution.

Cognitive change

Do women feel welcomed by the bank? Yes, based on qualitative research. Women customers did get exposure to the marketing materials, and messages shared in the materials resonated with them, piquing their curiosity. As Neelam, a customer from Delhi said; "the photo of the kid in her mother's arms with a piggy bank in her arm attracted me." While

not generalizable, these types of responses indicate that women felt “welcome” at the bank, a key goal of the intervention.

Are women aware of the products and channels, and do they find them relevant? Maybe. Jan Dhan accounts were opened in mass as part of a government initiative, and data showed many people solely used the accounts to receive government benefits and had limited understanding of the account features or other products offered by the bank. Therefore, a key part of the solution was building women’s awareness of the different products and channels available. Given that recruitment for the study was conducted at the BC point of service, we would expect awareness and use of BCs to be universal, which was supported in the data. As a proxy for awareness, we looked at uptake of the offered products, and as noted above, found mixed evidence on whether customers were more likely to take up the credit, insurance and pension products. Therefore, we find the data on this question to be inconclusive.

Perceptual change

Are women confident in their ability to conduct financial transactions on their own? Yes. Women who received the solution were 33.6% more likely than the control group to say that they did not have help with their transactions, an indication that they were more capable to conduct financial transactions on their own.

Do women feel financially secure in case of an emergency? Yes. We asked women if they could come up with ₹7500 (\$90) in the next week for a sudden need. Women in the treatment group had a 10 percentage point greater increase than the control group in their ability to come up with the funds. At the endline, 72% of the treatment group reported that they would be able to raise the funds, which is significant given that just 44% of people in developing countries globally say that they could access a relatively similar amount of money in 7 days with little or no difficulty.¹⁷

Relational change

Do women participate in household financial decisions? Yes, but not necessarily due to the intervention. At the endline, 69% of women who received the solution reported participating in decisions about saving (themselves or jointly with someone else), an increase of 21 percentage points from the baseline. There was little change in the proportion of women who reported being the sole decision-maker, indicating that most of the change was driven by women who had not previously participated now jointly making decisions. This trend was similar for decisions around purchasing expensive goods. However, the control group also experienced increased participation in decision-making, indicating that the results were not due to the intervention. Men in both treatment and control groups also reported a higher likelihood of making decisions with their spouses, further supporting evidence of women’s participation.

Do women gain autonomy? Yes, but not necessarily due to the intervention. Women who were surveyed increased their likelihood of believing they should have some control over money earned (themselves or jointly) from baseline to endline, however there were similar results for the treatment and control group, indicating that the change was not due to the intervention. There were similar trends of women saying that a wife has the right to spend money that she has earned without asking permission of her husband, and that she can use money she earned to buy unnecessary good or services for yourself or your children without asking permission.

Our research and data analysis indicate that the intervention with Bank of Baroda successfully achieved many of the intended outcomes, although not all. The learnings will be incorporated into the design of future savings solutions, and represent an indication of the women’s economic empowerment impact for Bank of Baroda’s 3 million+ women Jan Dhan customers who are currently receiving the solution.

Building capabilities to use mobile wallets in Cambodia

Women’s World Banking together with Wing in Cambodia developed a solution for women factory workers who received their salary payment through a Wing wallet, to enhance their knowledge of and confidence to use the various services and channels available with their account. The solution included marketing posters displayed in public factory areas,

¹⁷ Demircuc-Kunt et al. (2021).

in-person, interactive coaching sessions delivered to factory workers by trusted team leads, learning-by-doing transaction tutorials, and waived transaction fees and a raffle prize as incentives. The baseline survey was conducted before the intervention rollout with pre-determined “treatment factories” and “control factories,” a midline was conducted nine months later, and the endline nine months after the midline.

Women’s World Banking’s hypothesis was that communications and training would increase women’s awareness of the features and benefits of the Wing account, as well as other Wing products. Over time, the intervention was designed to build women’s confidence, and enable her to transact more with the account, which would ultimately economically empower her to build and control funds in her account and participate in financial decisions.

Impact: We found that women who received the solution did have greater awareness of the account features and were more confident in making many different types of transactions. Women used their accounts more, however this was not necessarily driven by the intervention, and was highly contingent on the economic conditions she faced. Overall, the women factory workers are not saving in their Wing accounts, however they do exhibit indications of stronger financial health over time. Women are more likely to be the sole decision-maker on financial decisions, although overall participation did not increase.

These outcomes are framed as a series of questions below. It is worth noting that in this study the control group was made up of factory workers who also received wages through a Wing account, but had not received the training intervention.

Cognitive change

Are women aware of the Wing account features and benefits? Yes. Women who received the solution had greater awareness of all the types of transactions that can be done with their Wing account. The treatment group increased awareness of sending/ receiving money by 9 percentage points more than the control group, and awareness of phone top-ups by 5 percentage points more. Awareness of the ability to use the account to pay bills increased by 16 percentage points, compared to a decrease for the control group.

Do women make common transactions using Wing accounts? Yes, but not necessarily due to the intervention. All women increased their likelihood of using the Wing account for different purposes, including phone top-ups, sending or receiving money transfers, paying bills and applying for loans. In fact, these increases were particularly large for transferring money (20-percentage point increase for the treatment group) and phone top-up (26-percentage point increase for the treatment group). However, the control group often saw similar or larger increases than the treatment group, indicating that the change was not due to the intervention. We believe this may be due to Wing’s overall growth and market saturation in Cambodia over the course of the study.

The impact evaluation also looked at the sub-set of women who were not affected by wage shocks related to Covid, and found that women who received the intervention saw a 41.8% relative increase in app-based transactions and a 50.2% relative increase in transaction volume, excluding withdrawals. These increases in transaction and volume appear to persist in the longer-term (at least up to 15 months out) rather than a one-time uptick at the time of the intervention. This demonstrates the potential of the intervention to drive transactions, had there not been external factors.

Material change

Do women increase savings and build balances in their Wing accounts? No, but this may have been due to wage shocks during Covid lockdowns. The women factory workers do not generally seem to be saving. Less than 30% of both the treatment and control groups said that they save any of their salary payments. This is mirrored by little change in use of the account for saving, as only 5% of the treatment group used the account for saving and there was no change over time. For those that do save, there was an increase in the amount saved in their Wing account, however this amount was still lower than saving through other accounts or at home in cash or in kind. We found significant effects of wage shocks across the study participants (roughly 60% of the treatment group saw average wage decreases in the time period after the training intervention), and we hypothesize that this may have affected overall ability to save.

Perceptual change

Do women feel confident making transactions? Yes. Women who received the solution are more confident in making all types of transactions (except for taking a loan), increasing their rating of their confidence by more than the control group. The largest increases were for confidence in paying bills (increased from an average score of 3.55 to an average score of 4.7) and confidence in sending/ receiving money (increased from an average score of 3.78 to an average score of 4.7).

Further support for women feeling more confident making transactions is evidenced through increased use of the Wing app, which is largely self-service, rather than through agents. Women in the treatment group who sent money to or received money from family or friends increased their likelihood of using the Wing app to do so by 18 and 34 percentage points respectively, slightly more than the control group. This is mirrored by a decrease in using Wing agents for these transactions between baseline and endline.

Relational change

Do women participate in financial decisions? Yes, and most of the change was from joint decision-making to being the sole decision-maker. Women who received the solution increased being the sole decision-maker on how to use their salary payments by 8 percentage points from baseline to endline, which was the same as the control group. Women who received the solution were slightly more likely than the control group to say they were the sole decision-maker on savings. However, this change was offset by a decrease in joint decision-making, indicating that women did not increase participation overall but did increase the likelihood of being the sole decision-maker.

Other notable findings

Beyond the articulated outcomes for the intervention, the study revealed some additional findings with implications for women's economic empowerment:

- **Women reported enhanced financial health.** At the endline, women were more likely to say they have enough money to pay for their living expenses (9 percentage point increase for the treatment group), that they earn enough money to pay back debt (7 percentage point increase for treatment), and that they have a saving/emergency fund that is large enough to cover unplanned expenses (15 percentage point increase for treatment). These increases were similar for the treatment and control groups, indicating that the change was not due to the intervention, however reflect a promising trend correlated with women increasingly using mobile accounts.
- **Greater use of mobile apps reduces reliance on agents, with implications for women's time and privacy.** As articulated above, women who received the solution shifted from using agents to transact on their Wing accounts to using the mobile app. We found that women spent an average of 21 minutes on each agent-based transaction for travel and transaction time, not accounting for finding agents closed, systems down or time-consuming transactions. Reduced reliance on agents means time savings for women, who we know are time-poor and value convenience. Further, we believe that this shift also provides women with greater agency over their resources, by increasing privacy around their finances (as they shift from visible transactions at agent networks to those made from the privacy of their mobile phone).

Our research and data analysis indicate that the intervention with Wing achieved many of the intended outcomes related to digital financial capability, although not all the anticipated outcomes around linking this behavior to savings. The learnings will be incorporated into the design of future account activation solutions and represent an indication of the impact for the 375,000 women workers who receive their salary through Wing.

Lessons Learned

Women's World Banking's insights from these studies do not stop at our contributions to the literature. We also learned valuable lessons about women's preferences, how to improve our work, and ways to measure impact. Consistent with our commitment to transparency in these studies, in this section we articulate lessons learned in these areas.

Lesson 1: Rigorous impact evaluation is resource-intensive and not always successful.

Impact evaluation involves establishing a control group, finding a representative sample, ensuring an ideal set-up amidst real-world conditions, securing (and storing, managing, and disposing of) data, upholding rigorous ethics standards, and respecting the boundaries of our FSP partners. These activities are difficult for any researcher in the best of circumstances. The three successful impact evaluations you see in this write-up were also accompanied by a handful of failed evaluations that never got to the data collection phase because of challenges with the partner, challenges with the solution, or challenges with the research methodology. We have had to deploy creative and innovative ways to overcome roadblocks, and the results in this report are consequently hard-won.

Lesson 2: Women's needs and preferences are sometimes different than we expect them to be.

All three solutions discussed here focused on active account use, and in all three cases the Women's World Banking team working on the solution initially assumed women would use the account to build a sufficiently large savings balance to achieve their goals. What we found, however, was that during the study periods women preferred accessing and withdrawing their capital rather than building a balance. The time in which these studies were conducted included systemic economic challenges related to Covid-19 lockdowns, severe weather events which decreased agricultural yields, and contractions of the labor market with massive layoffs. While we did find that women were more actively using their accounts, often depositing more frequently and saving small balances, we also found that they were withdrawing their funds, and we could argue they were more resilient as a result.

In two of the three studies, we saw that income was a predictor of financial services use. From this and other research around the world on "use cases" of financial services, we conclude that women must see value in financial services to actively use and therefore benefit from them. We often quip at Women's World Banking that no one wakes up and says, "I really need to open a bank account because I really like bank accounts." Instead, we see products being more successful among people who have a strong reason to use them, such as income management.

Finally, given our work with individual FSPs we assumed that an intervention with an institution's product would simply increase engagement with the product at our partner institution. We instead found in at least one institution that engagement with our partner also created more engagement with products at other institutions as well. Customers who were exposed to the intervention we designed with Ujjivan were more likely to "shift" their financial services to formal channels overall—sometimes with other financial institutions.

Lesson 3: Women-centered design is a journey, not a destination.

Women's World Banking's women-centered design approach is a process rather than a set of design elements. From these studies we get more data on what worked and what did not work for deepening women's financial inclusion. Building this knowledge is part of the process. Some of the insights we are moving forward with include:

- Some impacts are easy to gain and easy to lose without active financial services use. If we want to see sustained impact, we likely need to create sustained rather than one-time interventions.
- Account usage solutions do not always create savings behavior. Account activation and savings interventions may need to look different from one another.
- Women don't always engage with all aspects of the solution but can still be empowered by it. Women customers in the treatment group at Ujjivan received a savings card but did not report setting a savings goal as the card told them to. They did, however, save more frequently.
- Women customers are experiencing a myriad of "interventions" that complicate the deployment and assessment of our interventions. Our samples were receiving COVID-19 relief funds, experiencing job changes, and participating in government interventions like insurance or food subsidies.

- Fidelity to the solution is rare. Products shift over time in response to business and customer needs, and that is ok. If women-centered design is indeed a process rather than an end-product, then changes to the solution will be informed by women's needs.

We incorporate these lessons into future work so that we can better target and serve low-income women customers.

Lesson 4: Research on impact may not result in data that shows impact, but not necessarily because impact does not exist.

Women's economic empowerment is hard to measure. It relies on questions that are extremely sensitive and subjective, and still being tested to a large degree. Some aspects of women's economic empowerment are also quite slow to change, and impact evaluation timelines may not be long enough to see such change. We are actively engaged with the impact community to test questions and establish best practices. Lack of evidence of impact can also mean a difference between our theory of change and the reality for women, and in these cases a process evaluation may have been useful to understand where a breakdown could have emerged.

Leveraging a range of research methods is important. Fully randomized research designs are the gold standard, but they are difficult to achieve under real-world conditions. Women's World Banking prioritizes scalability and partner-buy in over full randomization, and after three studies we feel confident about this decision. It does mean, though, that some of our results are difficult to interpret. We are starting to improve our capacity for interpretation by incorporating qualitative research. Quantitative methods tell us "what" the impact is, but qualitative methods tell us "why" we see this impact. Our future evaluations will more intentionally incorporate qualitative methods. Finally, administrative data is less expensive, more reliable, and more representative than surveys. While limited in scope and requiring a strong partnership with the financial institution, administrative data is tremendously helpful in telling stories of impact.

While financial service interventions do lead to outcomes around women's economic empowerment, the pathways to that outcome are not always the same as we expected when we set out to deliver these solutions. Learnings from these impact studies are testing our assumptions as an organization, pushing us to further refine our offerings to ensure that we are achieving the outcomes we want to see in the world – namely the financial security, prosperity and therefore economic empowerment of women.

Moving forward

Women's World Banking has committed to fielding ten rigorous impact evaluations by the end of 2027. These three studies are only the first tranche. Our key stakeholders can expect from us a strong commitment to building the evidence base for the value of women's financial inclusion for real-life outcomes at the individual, household, and community levels. As we move forward, we are making changes to the way we set up research studies, collect data, analyse results, and share with our audiences. We are actively engaging with our findings on both an intellectual and a practical level.

First, the findings in this report are accompanied by a range of follow-up questions, many of which we cannot answer with the data we have. Most notably, non-material change (what we operationalize as cognitive, relational, and perceptual change) is difficult to measure, and our measurement tools are constrained by what we can ask in a 30-minute survey. In addition, explanations for why we see puzzling trends in the data are elusive. The limitations to studies that are primarily survey-based have compelled us to include qualitative data and analysis in our upcoming and ongoing studies where possible. We are even attempting a triangulated research study with qualitative original data collection to assess the more intangible outcomes of a solution. We are also leveraging administrative data and project monitoring reports, and more experimental methods like financial diaries research.

Second, while we are sharing these results with the academic community through appropriate channels, we are creating more easy-to-read results summaries to democratize our findings. The insights we gain in these studies have been impressive. At the same time, the development community's pressure to show more and better results could unfairly minimize the findings. We group the studies so that one complicated or difficult-to-understand impact does not spoil the rest. We look for trends across studies to confirm the scalability of results. We share results with our partners in ways they understand.

Finally, these studies do not sit on a shelf, gathering dust. We use the outcomes studies to actively improve our work. This action-focused strategy is part of Women's World Banking's commitment to be evidence-based and highly responsive to our experience. These studies are part of a range of inputs driving our strategic plan and ongoing programs. These findings help us to ask the right questions and challenge our mental models of empowerment against women's own goals.



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Annex: Results summary tables

These tables offer a multi-dimensional review of the women's economic empowerment goals in each study. We chose only the most frequently cited answers as of the endline evaluation. We highlight percentage point or absolute change in the treatment and control groups between baseline and endline. Cells shaded blue indicate a promising change greater than zero in either. Importantly, however, we also report whether this difference is statistically significant in the last column, controlling for other variables including gender, urban/rural setting, marital status, educational attainment, employment, and age. Sometimes, the last column reveals that the inclusion of co-variates changes the interpretation of the result. We report the volume of this significance, whether in greater or lesser likelihood than the control group chose this response or in the financial difference that is due to the solution. Cells shaded gold indicate statistically significant results ($p < .1$).

Table A1: Key impact indicators among Ujjivan customers by treatment or control group

	Treatment baseline	Treatment endline	Control baseline	Control endline	Treatment percentage point change	Control percentage point change	Statistically significant when controlling for other variables
ARE WOMEN AWARE OF ACCOUNT FEATURES AND BENEFITS?							
At what type of institution do you have a formal account?							
Ujjivan	100%	99%	100%	99%	-1 pp	-1 pp	13.1% less likely (p=.818)
Commercial bank	70%	74%	69%	71%	+4 pp	+2 pp	4.9% more likely (p=.742)
Which of the following transactions have you done with your Ujjivan account?							
Sending money	3%	4%	3%	3%	+1 pp	0 pp	46.2% more likely (p=.332)
Receiving money	1%	4%	3%	3%	+3 pp	0 pp	78.2% more likely (p=.025)
None of the above	95%	84%	93%	81%	-11 pp	-12 pp	57.7% less likely (p=.000)
HAVE WOMEN STARTED SAVING AT UJJIVAN?							
Apart from taking loans, what other services from Ujjivan have you availed?							
Savings account		63%		27%			134.8% more likely (p=.000)
Have you ever deposited money into your Ujjivan account?							
Yes	26%	39%	14%	19%	+13 pp	+5 pp	40.3% more likely (p=.043)
ARE WOMEN SETTING SAVINGS GOALS?							
Do you have a specific reason/goal that you are saving for?							
Yes	56%	75%	57%	82%	+19 pp	+25 pp	9.0% less likely (p=.604)
What is the specific reason/goal that you are saving for?							
Children's education	11%	19%	18%	33%	+8 pp	+15 pp	4.6% more likely (p=.870)
Children's marriage	11%	14%	18%	24%	+3 pp	+6 pp	Insufficient observations
Medical treatment	9%	10%	9%	13%	+1 pp	+4 pp	Insufficient observations
Home improvement	14%	22%	9%	29%	+8 pp	+20 pp	60.9% less likely (p=.003)

Prepare for emergencies	22	23	30	35	+1 pp	+5 pp	168.5% more likely (p=.003)
DO WOMEN TRUST UJJIVAN AS A SECURE PLACE TO SAVE?							
Where do you usually save?							
Gold/Jewelry	8%	7%	3%	4%	-1 pp	+1 pp	15.3% less likely (p=.541)
Other account	41%	48%	19%	20%	+7 pp	+1 pp	3.0% less likely (p=.835)
Ujjivan account	36%	39%	14%	11%	+3 pp	-3 pp	153.2% more likely (p=.000)
LIC policy	25%	15%	14%	11%	-10 pp	-3 pp	14.5% more likely (p=.500)
Post office	4%	5%	7%	5%	+1 pp	-2 pp	17.1% more likely (p=.588)
How frequently do you save?							
Average	11.86 times/year	28.31	14.58	19.71	+16.45	+5.13	19.3 more per year (p=.001)
DO WOMEN BUILD BALANCES IN THEIR UJJIVAN ACCOUNTS?							
In the past 12 months, how much were you able to save in the following places?							
Gold/Jewelry	46487	3962	35,847	7,370	-42525	-28477	Insufficient observations
Other account	3680	2798	5,177	3,853	-882	-1324	INR 1,697.21 less (p=.234)
Ujjivan account	1782	1531	2,808	1,481	-251	-1327	INR 982.37 more (p=.311)
LIC policy	3959	8525	6,376	6,962	+4566	+586	INR 2082.31 more (p=.563)
Post office	6118	10093	4,344	5,834	+3975	+1490	INR 8,849.5 less (p=.079)
DO WOMEN INCREASE SAVINGS AND BUILD HOUSEHOLD ASSETS?							
In the past 12 months, have you, personally saved any money for any reason?							
Yes	41.90%	49%	40.78%	41%	+7.1 pp	+0.22 pp	20.3% more likely (p=.162)
In the past 12 months, how much were you able to save?							
Formal	3599.21 (33% of total)	2353.31 (71% of total)	2542.30 (35% of total)	1588.02 (37% of total)	-1245.9 (+38% of total savings)	-954.28 (+2% of total savings)	INR 71.23 less (p=.889)
Informal	7465.66	951.07	4706.32	2721.01	-6514.66	-1985.31	INR 1,150.8 less (p=.002)
Total	11064.87	3304.38	7248.62	4309.03	-7760.49	-2939.59	INR 1,239.1 less (p=.077)
DO WOMEN HAVE LOWER FINANCIAL STRESS?							
How possible is it for you to come up with Rs. 7,500 in 7 days for a sudden need?							
Rank difference	-	-	-	-	-	-	(p=.204)
Very	-	21%	-	18%	-	-	-
Somewhat	-	37%	-	30%	-	-	-
Not very	-	20%	-	23%	-	-	-
Not at all	-	24%	-	26%	-	-	-
DO WOMEN PARTICIPATE IN FINANCIAL DECISIONS?							
Who makes decisions in your household about how much to save?							
Me	26%	38%	36%	39%	+12 pp	+3 pp	34.0% more likely (p=.051)
Who decided how to spend the loan you took from Ujjivan?							

Me	22%	33%	30%	36%	+11 pp	+6 pp	0.7% less likely (p=.970)
If money is available, who decides whether to buy expensive goods like gold, two-wheeler, or refrigerator?							
Me	12%	23%	24%	26%	+11 pp	+2 pp	11.1% more likely (p=.528)
DO WOMEN HAVE INCREASED CONTROL OVER SAVINGS?							
Does someone help you to withdraw money?							
Yes	74%	72%	71%	73%	-2 pp	+2 pp	1.8% more likely (p=.917)
Who helps you to withdraw money?							
Husband	46%	45%	35%	37%	-1 pp	+2 pp	20.2% more likely (p=.402)
Son	26%	23%	30%	30%	-3 pp	0 pp	41.9% less likely (p=.022)
Daughter	10%	8%	9%	6%	-2 pp	-3 pp	67.8% more likely (p=.153)
OTHER UNEXPECTED OUTCOMES OF NOTE							
If a woman has power in the household, it means she is taking power away from her husband. Agree or disagree?							
Disagree	10%	18%	20%	22%	+8 pp	+2 pp	14.0% more likely (p=.432)
Adult sons are more useful than daughters since daughters leave the house after marriage. Agree or disagree?							
Disagree	20%	37%	33%	42%	+17 pp	+9 pp	4.9% more likely (p=.722)
It is more important that a boy go to school than a girl. Agree or disagree?							
Disagree	12%	17%	19%	18%	+5 pp	-1 pp	4.9% more likely (p=.803)

Table A2: Key impact indicators among Bank of Baroda customers by treatment or control group

	Treatment baseline	Treatment endline	Control baseline	Control endline	Treatment percentage point change	Control percentage point change	Statistically significant when controlling for other variables
ARE WOMEN AWARE OF THE PRODUCTS AND CHANNELS, AND DO THEY FIND THEM RELEVANT?							
Some Jan Dhan Plus accounts are eligible for a small loan of up to INR 10,000 based on the savings history in the account. Have you ever heard of this small loan product?							
Yes	4%	20%	3%	19%	+16 pp	+16 pp	3.1% less likely (p=0.811)
List all places where you know that you can transact with your Jan Dhan account							
Business Correspondent (BC)	96%	99%	93%	100%	+3 pp	+7 pp	21.7% less likely (p=0.839)
Branch	71%	99%	75%	100%	+28 pp	+1 pp	6.8% more likely (p=0.917)
Where have you transacted with your Jan Dhan account?							
Business Correspondent (BC)	97%	99%	94%	98%	+2 pp	+4 pp	Insufficient variation in the sample
Branch	55%	99%	61%	98%	+44 pp	-37 pp	30.4% more likely (p=0.700)
Which service point do you use most often to transact with your Jan Dhan account?							
Business Correspondent (BC)	83%	88%	58%	77%	+5 pp	+19 pp	2.4% less likely (p=0.827)
Branch	15%	11%	39%	22%	-4 pp	-17 pp	39.8% less likely (p=0.034)
DO WOMEN START SAVING WITH THE BANK?							
Where do you keep the money you save?							

Bank of Baroda (non-PMJDY account)	7%	5%	7%	8%	-2 pp	+1 pp	4.7% less likely (p=0.881)
Bank of Baroda (PMJDY account)	51%	67%	59%	60%	+16 pp	+1 pp	57.3% more likely (p=0.030)
At home in cash	47%	42%	35%	39%	-5 pp	+4 pp	26.0% less likely (p=0.139)
SHG	3%	5%	16%	19%	+2 pp	+3 pp	77.6% less likely (p=0.002)
What transactions have you made with the Jan Dhan account?							
Deposit money	82%	93%	88%	91%	+11 pp	+3 pp	18.5% more likely (p=0.454)
Receive money from government scheme	50%	36%	45%	39%	-14 pp	-6 pp	4.6% less likely (p=0.753)
Transfer/ send money	12%	11%	19%	13%	-1 pp	-6 pp	10.5% less likely (p=0.434)
Receive money	12%	9%	21%	12%	-3 pp	-9 pp	20.3% less likely (p=0.181)
DO WOMEN ACCESS THE RELATED CREDIT, INSURANCE, AND PENSIONS PRODUCTS?							
Does anyone in your household currently have insurance?							
Yes	36%	36%	47%	42%	+0 pp	-5 pp	6.9% less likely (p=0.547)
DO WOMEN MOVE FROM INFORMAL TO FORMAL SAVINGS MECHANISMS?							
Where do you keep the money you save?							
Bank of Baroda (non-PMJDY account)	7%	5%	7%	8%	-2 pp	+1 pp	4.7% less likely (p=0.881)
Bank of Baroda (PMJDY account)	51%	67%	59%	60%	+16 pp	+1 pp	57.3% more likely (p=0.030)
At home in cash	47%	42%	35%	39%	-5 pp	+4 pp	26.0% less likely (p=0.139)
SHG	3%	5%	16%	19%	+2 pp	+3 pp	77.6% less likely (p=0.002)
DO WOMEN BECOME ACTIVE SAVERS AND GROW THEIR BALANCES?							
In the PAST 12 MONTHS, have you, personally, saved any money for any reason?							
Yes	42%	45%	51%	57%	+3 pp	+6 pp	7.7% more (p=0.519)
How often are you able to save?							
Transactions per year	8.47	4.87	11.77	7.90	-3.6	-3.87	2.8 fewer (p=0.002)
More frequently than every month	-	-	-	-	-	-	
Every month	15%	13%	22%	18%	-2 pp	-4 pp	
Every 2 months	13%	16%	10%	16%	+3 pp	+6 pp	
Every 6 months	12%	17%	7%	12%	+5 pp	+5 pp	
Less frequently than every 6 months	-	-	-	-	-	-	
In the past 12 months, how much are you able to save in ___?							
Bank of Baroda (non-PMJDY account)	8818.18 rupees	5727.27	12653.85	8082.35	-3090.91	-4571.5	Insufficient observations

Bank of Baroda (PMJDY account)	6641.21 rupees	9314.87	11760.91	8323.66	+2673.66	-3437.25	1,250.16 more (p=0.847)
At home in case	4197.66 rupees	3577.66	5347.12	3148.81	-620	-2198.31	2,124.29 less (p=0.435)
SHG	9248.00 rupees	1301.67	3527.53	1181.17	-7946.33	-2346.36	Insufficient observations
DO WOMEN FEEL FINANCIALLY SECURE IN CASE OF AN EMERGENCY?							
What would be the MAIN source of money that you would use to come up with Rs 7,500 within the NEXT MONTH?							
Borrowing from family and friends	60%	57%	62%	62%	-3 pp	0 pp	24.2% less likely (p=0.013)
Savings	13%	14%	12%	12%	+1 pp	0 pp	11.1% more likely (p=0.527)
Borrowing from a bank, employer	10%	16%	10%	16%	+6 pp	+6 pp	18.8% more likely (p=0.307)
Money from working	10%	8%	9%	5%	-2 pp	-4 pp	41.7% more likely (p=0.098)
Selling assets	4%	2%	1%	0%	-2 pp	0 pp	189.4% more likely (p=0.048)
Now, imagine that you have an emergency and you need to pay Rs 7,500. Could you come up with Rs 7,500 within the NEXT MONTH?							
Yes	40%	72%	52%	75%	+32 pp	+23 pp	0.6% more likely (p=0.967)
ARE WOMEN CONFIDENT IN THEIR ABILITY TO CONDUCT FINANCIAL TRANSACTIONS ON THEIR OWN?							
Does any individual, other than the BC themselves, help with your transactions at BCs?							
No	91%	93%	97%	97%	+2 pp	+0 pp	33.6% more likely (p=0.33)
DO WOMEN PARTICIPATE IN HOUSEHOLD FINANCIAL DECISIONS? DO WOMEN GAIN AUTONOMY?							
Who makes decisions in your household about how much to save?							
Me	22%	21%	36%	26%	-1 pp	-10 pp	6.1% more (p=0.658)
Together with someone else	26%	48%	26%	46%	+22 pp	+20 pp	2.5% less (p=0.844)
If money is available, who decides whether to purchase expensive goods like gold jewellery, two-wheeler, or fridge?							
Me	9%	11%	11%	11%	+2 pp	0 pp	33.9% more (p=0.063)
Together with someone	41%	50%	41%	54%	+9 pp	+13 pp	7.8% less likely (p=0.460)
Who do you think should have control over the money you earn?							
Me	26%	22%	24%	17%	-4 pp	-7 pp	18.8% more (p=0.247)
Together with someone	42%	53%	40%	54%	+11 pp	+14 pp	13.6% more likely (p=0.260)
In general, if a wife has earned some money, does she have the right to buy clothing for herself or her children without asking the permission of her husband?							
Yes	70%	78%	66%	76%	+8 pp	+10 pp	2.8% more (p=0.848)
If you have some money you have earned, can you use it to purchase unnecessary goods or services for yourself or your children without asking the permission of anyone else?							
Yes	55%	65%	56%	67%	+10 pp	+11 pp	10.5% less (p=0.348)

Table A3: Key impact indicators among Wing Bank customers by treatment or control group

	Treatment baseline	Treatment endline	Control baseline	Control endline	Treatment percentage point change	Control percentage point change	Statistically significant when controlling for other variables
ARE WOMEN AWARE OF THE WING ACCOUNT FEATURES AND BENEFITS?							

Types of transactions you are aware you can do with your Wing account?							
Do phone top ups	53%	68%	63%	73%	+15 pp	+10 pp	6.2% more (p=0.037)
Send/ receive money transfers	47%	71%	55%	70%	+24 pp	+15 pp	9.9% more (p=0.001)
Pay bills, utility, fees, rent, etc.	31%	47%	41%	33%	+16pp	-8 pp	24.1% more (p=0.000)
Save or deposit money	16%	18%	22%	18%	+2 pp	-4 pp	5.8% more (p=0.017)
Apply for a loan	7%	19%	11%	21%	+12 pp	+10 pp	2.8% more (p=0.177)
The WING app helps me to manage my financial needs easier.							
Strongly Agree/ Agree	68%	87%	62%	90%	+19 pp	+28 pp	8.2% less (p=0.002)
DO WOMEN FEEL CONFIDENT MAKING TRANSACTIONS?							
On a scale of 1-5 (with 1 being lowest and 5 being highest), how confident are you in being able to [transaction types] through your Wing app by yourself?							
Receiving and withdrawing money	3.68	4.33	3.83	4.41	+0.65	+0.58	0.068 more (p=0.313)
Doing phone top ups	4.12	4.72	4.17	4.55	+0.6	+0.38	0.236 more (p=0.000)
Sending or receiving money transfers	3.78	4.7	3.78	4.62	+0.92	+0.84	0.091 more (p=0.306)
Paying bills, utility, fees, rent, etc.	3.55	4.78	3.84	4.68	+1.23	+0.84	0.371 more (p=0.048)
Saving or depositing money in the account	3.86	4.57	4.37	4.33	+0.71	-0.04	0.748 more (p=0.010)
Taking a loan or making payments on a loan	4.13	4.58	4	4.71	+0.45	+0.71	0.276 less (p=0.460)
I have the skills and knowledge to manage my finances well							
Strongly Agree/ Agree	84%	86%	78%	90%	+2 pp	+23 pp	9.3% less (p=0.000)
DO WOMEN MAKE P2P TRANSFERS AND/OR PHONE TOP UP USING WING ACCOUNTS?							
Since you have had a Wing account, for what purposes did you use your account?							
Receive and withdraw salary payments	100%	100%	100%	100%	0 pp	0 pp	0.2% less (p=0.606)
Do phone top ups	44%	70%	43%	73%	+26 pp	+30 pp	2.6% less (p=0.371)
Send/ receive money transfers	32%	52%	29%	58%	+20 pp	+29 pp	9.9% less (p=0.001)
Pay bills, utility, fees, rent, etc.	11%	16%	7%	11%	+5 pp	+4 pp	1.3% more (p=0.511)
Save or deposit money	6%	6%	3%	8%	0 pp	+5 pp	4.9% less (p=0.000)

Apply for a loan	1%	7%	0%	7%	+6 pp	+7 pp	1.0% less (p=0.387)
DO WOMEN INCREASE SAVINGS AND BUILD BALANCES IN THEIR WING ACCOUNTS?							
Do you save any of your salary payments?							
Yes	29%	-	27%	-	-	-	22.6% more likely (p=0.260)
Where did you save/put money aside in the last 12 months?							
Wing account	24%	-	31%	-	-	-	6.5% less likely (p=0.883)
At home in cash	62%	-	54%	-	-	-	33.7% more likely (p=0.130)
At home in kind	31%	-	39%	-	-	-	11.0% less likely (p=0.565)
Bank account separate from Wing	8%	-	6%	-	-	-	3.6% more likely (p=0.921)
In the past 12 months, how much were you able to save in each of the selected ways?							
Wing account	302.2 riel	481.02	259.79	401.63	+178.82	+141.84	26.20 more (p=0.778)
At home in cash	650.75 riel	631.27	702.96	769.51	-19.48	+66.55	72.84 less (p=0.412)
At home in kind	865.58 riel	988.37	821.91	1066.62	+122.79	+244.71	140.55 less (p=0.439)
Bank account separate from Wing	537.62 riel	859.17	780.83	795.16	+321.55	+14.33	278.42 more (p=0.281)
In the past 12 months, have you personally saved any money for any reason?							
Yes	-	36%	-	51%	-	-	39.3% less likely (p=0.000)
Where do you usually save?							
Wing account	-	10%	-	17%	-	-	39.7% less likely (p=0.000)
At home in cash	-	45%	-	49%	-	-	5.8% less likely (p=0.760)
At home in kind	-	26%	-	40%	-	-	45.1% less likely (p=0.020)
I have a saving/emergency fund that is large enough to cover unplanned expenses							
Strongly Agree/ Agree	57%	72%	48%	75%	+16 pp	+27 pp	10.5% less likely (p=0.000)
I have enough money to pay for my living expenses							
Strongly Agree/ Agree	73%	82%	70%	83%	+9 pp	+13 pp	3.5% less likely (p=0.195)
DO WOMEN PARTICIPATE IN FINANCIAL DECISIONS?							
Who makes the decision in your household about how to make use of your salary payments?							
Self	63%	71%	60%	68%	+8 pp	+8 pp	10% more likely (p=0.727)
Together with someone else	33%	27%	37%	31%	-6 pp	-6 pp	0.6% less likely (p=0.824)
Who makes decisions in your household about how much to save from your salary?							
Self	64%	66%	60%	60%	+2 pp	0 pp	2.9% more likely (p=0.314)
Together with someone else	30%	24%	35%	28%	-6 pp	-7 pp	0.2% more likely (p=0.931)
OTHER UNEXPECTED OUTCOMES OF NOTE							
Do you personally have a bank account or microfinance account registered in your name, apart from the WING account?							
Yes	9%	-	8%	-	-	-	14.1% more (p=0.606)



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