Accounting for Empowerment?
Examining Women's Financial Inclusion in India

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Abstract

Bank accounts are an essential first step towards formal savings and credit in most countries, yet their impact on women's control over resources remains underexplored. I investigate the effects of 2014 policy in India that provided free bank accounts and led to an unprecedented increase in women's account ownership. This paper shows that bank account ownership improves households' financial access, and in certain cases increases women's decision making on household spending. Using a difference-in-difference estimation that exploits the sharp timing of the policy and a high-frequency household panel data, I find that women's account ownership increased household's likelihood to save in formal instruments and switch to formal sources of borrowing but did not affect consumption patterns consistent with women's preferences. Exploiting regional variation in pre-policy bank infrastructure, I further analyze the effects on women's self-reported decision-making. While districts with faster account expansion did not exhibit overall improvement of women's participation in household purchase decisions or spending autonomy, there were significant gains in districts where women had greater ex-ante mobility and households trusted banking institutions.

Keywords: Bank Account Ownership; Household Resource Allocation; Women's Decision Making; Government Policy; Women's Empowerment; India

JEL codes: D13; D14; G21; G28; G51; I38; J12; J16; R28

1 Introduction

In the last decade, policymakers promoted savings and credit through bank accounts, drawing on evidence that access reduces poverty and debt, smooths consumption and increases investment (Burgess and Pande, 2005; Brune et al., 2016; Pomeranz and Kast, 2024). In response, bank accounts rapidly increased in low- and middle-income countries, particularly for women (28% to 66% in 2011-21, World Bank 2022). We know from field experiments that account ownership increases women's labor supply (Field et al., 2021), savings and investment (Dupas and Robinson, 2013), and their perceived financial well-being (Prina, 2015). More resource-intensive programs that bundled savings accounts with financial training or social cohesion also improved women's intra-household decision-making (Ashraf et al., 2010; Desai and Joshi, 2013; Kumar et al., 2021). By contrast, we lack evidence on whether the zero-fee accounts that were implemented at scale impacted women's agency.

To answer this, I examine the effects of India's large-scale provision of no-fee bank accounts on married women's participation in financial decisions. Nationally representative data shows that unbanked, married women had lower decision-making power than banked women in 2011-12: 48% vs. 55% report participation in decisions on purchase of large household items and 87% vs. 96% report autonomous spending (Desai et al., 2018). If account ownership improves women's agency over spending and saving decisions, the policy should impact how households allocate resources and women's reports of participation in decision making.

In 2014, about 40% of adults did not have a bank account, and the majority of them were women (Centre for Monitoring Indian Economy, 2025). The government mandated no-fee bank accounts for the unbanked with minimal proof of identification to increase financial access. Within a week, 18 million new accounts were opened (Government of India, 2014) and, a year later, 69% of women had a bank account - a significant jump from the 45% before policy (Centre for Monitoring Indian Economy, 2025). World Bank's Findex (2022) reported that the gender gap in account ownership dropped from 18 percentage points to 3 between 2014 and 2017. The disproportionately larger effect of the policy on women makes it amenable for my analysis.

I use two empirical models, one analyzing changes at the household level and the other at district. In the household analysis, I use a difference-in-differences (DiD) model that estimates the effects of women's account ownership on household resource allocation. I restrict the sample of a high-frequency longitudinal survey to households where the wife of the household head was unbanked before the policy. Then, I compare households

in which the wife opened a bank account as soon as the policy was implemented with households where she remained unbanked for at least one year after. Men's account ownership was universal in this sample, allowing me to isolate the impact of wife's account ownership. I apply inverse probability weights by re-weighting households on the wife's likelihood of being banked using observable characteristics to address potential selection bias between the two groups. Leveraging the sharp timing of the policy, I estimate differences between the two groups before and after policy implementation. The outcome variables include households' take up of saving instruments, formal and informal credit and monthly consumption allocations. The policy governed the opening of bank accounts but not transactions and served as an exogenous shock to households' *take-up* of bank accounts. Therefore, the analysis estimates the effects of *account opening* in response to the policy. Conditional on household characteristics, if wife's account creation shifts resource allocation, it suggests that she previously had limited control over household financial decisions.

Building on this in the district-level analysis, I examine whether new bank accounts improved women's self reported decision making using a second DiD model. The policy created a spatial variation in the expansion of bank accounts by ex-ante bank infrastructure. I exploit this differential trend to examine aggregate changes in women's decision-making with a balanced district panel that combines administrative banking data with nationally representative household surveys. The estimation controls for pre-existing differences in variables correlated with bank infrastructure and women's empowerment. To support the identifying variation, I confirm that account expansion in districts with above- versus below-median bank infrastructure was parallel before the policy. There was 10% faster expansion of bank accounts in districts below median bank infrastructure than the rest after the policy was implemented.

My analyses produce three main sets of results. First, women's account ownership increased households' saving and borrowing through formal channels. When the wife of the household head opened a bank account, households were 11.5 percentage points more likely to save in formal instruments such as fixed deposits and government bonds. There was a shift towards formal credit: households were 0.5 percentage points more likely to borrow from formal sources while credit from informal sources reduced by 0.7 percentage points. Therefore, the addition of wife's account helped meet households' demand for institutional saving and credit.

Second, while the likelihood to save increased, account ownership did not shift household consumption in favor of women's preferences. There were no significant changes in the consumption of goods associated with wives' private consumption (such as clothing,

footwear, beauty products, and services). There were no changes in the consumption of goods correlated with men's preferences (such as intoxicants and non-cooking fuel) either.

The third result examines women's self reports of decisions making on consumption. There were no aggregate improvements in women's participation in decisions around large household purchases or spending autonomy in districts with faster account expansion. However, greater social mobility and trust in banking corresponds with 8 and 25 pp more likelihood of women participating in decisions on large household purchases in the fast growing districts, respectively. These heterogeneity tests help understand differences by women's operability of the account and frequency of account use[1] as women are more likely than men to have inactive accounts in India (Demirguc-Kunt et al., 2022). Therefore, along with a bank account, improving women's mobility and trust in institutions are relevant for women's agency in spending decisions.

This paper makes three important contributions. First, it advances research on women's financial inclusion and empowerment. Studies have examined the economic and social impacts of microfinance institutions (Chliova et al., 2015; Kochar et al., 2022), bank branches (Garg and Gupta, 2021; Bhukta et al., 2024), and digital financial services (Karlan et al., 2016; Schaner, 2016; Suri, 2017; Toth and Greenland, 2023; Riley and Shonchoy, 2024). This paper estimates the effect of account ownership while holding bank infrastructure constant. It builds on the work of Field et al. (2021), who examined female labor supply and empowerment outcomes in four districts of Central India. This paper advances the analysis by using a nationally representative sample across rural and urban India and expanding the outcome set to include household resource allocations.

Second, this paper adds to the literature on women's asset ownership and household consumption allocations. Earlier studies document that increases in women's asset ownership are associated with higher spending on non-durable goods, time-saving appliances, health, education, and food (Beegle et al., 2001; Quisumbing and Maluccio, 2003; Duflo and Udry, 2004; Mishra and Sam, 2016). A multi-country analysis finds that women's ownership of land or housing increases participation in decisions on healthcare, household purchases and mobility (Amir-ud Din et al., 2024). In contrast, I find that women's ownership of a bank account corresponds with increased use of formal saving instruments and higher health spending, but no change in consumption of food, clothing, or jewelry, and a decline in education expenditure.

Finally, this paper presents new evidence on the impacts of the largest account ex-

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[1]Dupas et al. (2014); Karlan et al. (2014); Brune et al. (2016) report lack of trust in banks and transaction costs such as transportation as reasons for low account use.

pansion policy of the 21st century. Agarwal et al. (2023) analyzed 1.5 million accounts opened under this policy and found low deposit and withdrawal activity in the first six months. The newly banked households improved their ability to manage liquidity in response to shocks such as marriage or rainfall. Similarly, an experiment in Nepal offering comparable accounts to female-headed households found that while first-time bankers had limited saving capacity (Prina, 2015), account ownership influenced consumption patterns, coping ability, and perceptions of financial security. This paper builds on these insights by studying not only household saving behavior but also consumption allocations and self-reported spending decisions.

The rest of the paper is organized as follows. Section 2 describes the policy efforts in India aimed at improving financial inclusion. Section 3 described women's empowerment and hypothesized impact of the policy. Section 4 describes the data, and 5 outlines the empirical strategy. Section 6 presents the results and Section 7 concludes with implications for research and policy.

2   Context

The Reserve Bank of India (RBI)'s first consolidated efforts to increase account ownership began in an advisory capacity. In 2005, it recommended commercial banks to provide a "no-frills account" that required low or no minimum balance. This was later restructured into the "Basic Savings Deposit Account" in 2012 to include digital services like ATMs and electronic payments[2]. Financial Inclusion Insights (FII), a nationally representative survey, reported that 47% of adults (three out of five men and two out of five women) owned a bank account at the end of 2013 (Intermedia, 2014). Survey respondents of World Bank's 2011 Findex survey and FII reported the following reasons for now owning an account - insufficient money, the costs of maintaining an account, using another family member's account, distance to the bank, lack of documentation and limited trust in institutions[3].

2.1   Account expansion policy

The GOI intensified its efforts through a policy implemented at the end of August 2014, Pradhan Mantri Jan Dhan Yojana (PMJDY), with the goal for every household having at least one basic savings deposit account. Under PMJDY, banks could not charge account opening or maintenance fees to the account holder and beneficiaries were required to provide only one government validated identification. The account could be opened

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[2]Section 1 in the Supplemental Appendix describes the policy efforts.
[3]Figures 1 and 2 of the Supplemental Appendix.

at a bank branch through banks' traveling agents called Business Corespondent (BC)[4]. The account included additional services such as a debit card free of charge, an accident insurance of USD 1,638 (in nominal terms, USD 5,439 in purchasing power parity (PPP) terms[5]) and an overdraft facility of up to USD 82 (in nominal terms, 272 in PPP) after six months of satisfactory savings/credit performance. Other components of this policy are described in the Supplemental Appendix.

The first phase of the policy was implemented nationwide from August 2014 to August 2015 excluding states in hilly region facing infrastructure and connectivity constraints[6], and districts affected by armed insurgency[7]. By March 2015 (the end of the 2015 financial year), 147 million accounts were opened under this policy, of which 90% were issued a debit card (Ministry of Finance, 2024). The average account balance was INR 1065 (approximately USD 45.5, purchasing power parity). The PMJDY accounts were 10% of the total savings and commercial bank accounts reported by RBI in March 2015. Appendix figure B.1 shows that the largest increase in all bank accounts between 2007 and 2018 in the Phase 1 regions was in the first year of policy. The PMJDY had a comprehensive scope helping individuals store money, transact using ATM and allowing an overdraft for non-business purposes. While the policy did not target women, it offered the potential for women (both income-earners and unemployed) to improve their control over resources through these complementary features. Appendix figure B.2 shows that the gender gap in account ownership reduced significantly after 2014.

The following advancements in financial inclusion are not expected to confound the results of this paper[8]. First, the government's efforts to deposit welfare payments directly into bank accounts starting in 2013 that had a limited impact in the first year of PMJDY. Instead, the expansion of digital payments was slow with only 16% of the targeted schemes covered by December 2016 (Srinivas and Kapur, 2017). The transfer of welfare payments for the three schemes[9] that constituted 90% of the funds transferred digitally was between 50-60% of the total allocations. Second, the penetration of ATMs, internet and mobile banking services was also limited at the time of PMJDY implementation. The annual transaction values through ATMs and mobile banking were a fraction (25% and 1%, respectively) of the value of total bank deposits in 2014. Third, the monetary policy that de-valued currency and introduced high denomination notes in November 2016 and

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[4]Section 1.2 in Supplemental Appendix describes the role of the BC.

[5]Estimated using OECD Data on Purchasing Power Parities available here.

[6]These include states in the North East - Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura - as well as parts of Himachal Pradesh, Jammu & Kashmir and Uttarakhand.

[7]A list of 35 districts worst affected by "Left-Wing Extremism" is available here.

[8]See Section 1.4 of the Supplemental Appendix for descriptive evidence.

[9]Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and Liquefied Petroleum Gas (LPG) subsidies and pensions under the National Social Assistance Programme (NSAP)

influenced greater use of digital platforms has a negligible overlap with the post-policy measurement of women's empowerment[10].

3 Women's empowerment and conceptual framework

3.1 Defining women's empowerment

Household resource allocation

In this paper, I investigate changes in household's decision to save, borrow and invest as well as consumption allocations in response to wife's account ownership. Evidence from Kenya shows that women entrepreneurs were more likely to save than men when provided with a savings account (Dupas and Robinson, 2013) and in response to positive income shocks (Robinson, 2012). Meanwhile, rising account ownership in India (77% in 2017) did not improve women's access to bank credit (7%) (Chavan, 2020). I also investigate household's investment in two categories. The first is gold and related assets which is preferred by women as an asset accumulation strategy (Antonopoulos and Floro, 2005; Quisumbing, 2011); and the second includes mutual funds, private equity and real estate. Pangaribowo et al. (2019) provide evidence of gender-segregated investment patterns in rural Indonesia: more women owned jewelry while more men owned non-agricultural land and house.

The literature suggests that improvements in women's bargaining power within the household affect consumption allocations. For example, women's asset ownership is associated with increased spending on clothing, time-saving appliances, jewelry, food, health, and education (Beegle et al., 2001; Quisumbing and Maluccio, 2003; Duflo and Udry, 2004; Mishra and Sam, 2016). However, effects may differ by asset type. Pangaribowo et al. (2019) find that women's ownership of liquid assets such as jewelry is positively associated with spending on high-nutrient foods, while ownership of non-liquid assets doesn't have a similar effect. In consumption allocations, I analyze household expenditure on items strongly correlated with i) women's private consumption such as clothing, footwear, accessories, cosmetics and beauty services; ii) women's domestic chores such as cooking and cleaning (expenditure on food, utensils and cleaning products); and iii) consumption that substitutes women's time spent on domestic chores (appliances and domestic labor). I also investigate the consumption of items dominated by male preferences such as tobacco products and liquor, shaving articles and fuel for purposes other

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[10]Less than 0.6% of the survey observations on decision making were collected in November and December of 2016.

than cooking[11]. Lastly, I test for household expenditure on education.

Decision making

In this paper, I analyze two variables of women's decisions making: whether they participate in decisions on large household purchases (individually or jointly with spouse), and whether they have money available to use autonomously. Unlike decision making on food preparation or daily household purchases, these variables are not correlated with the stereotypical division of labor between household members and less likely to be delegated to women when the opportunity cost of time spent on decision making is high (Kochar et al., 2022). Instead, these financial decision making variables are more directly influenced by women's ability to save. The survey data show few reports of solo decision-making on large household purchases. Therefore, I combine women's solo and joint decisions with their spouse on large household purchases into a single variable.

Survey based measures of women's decision making ability and household's gender attitudes are frequently used in empirical works examining women's empowerment (Heckert et al., 2023; Doss et al., 2022; Kosec et al., 2022; Annan et al., 2021; Field et al., 2021; Swaminathan et al., 2012; Connelly et al., 2010; Allendorf, 2007)[12]. Financial interventions such as loan provision (Kochar et al., 2022) and poverty alleviation and relocation programs (Ding et al., 2024) have improved women's decision making ability on household durables and routine purchases, clothing, food expenditure and borrowing/lending decisions, and investment in children's education. This paper provides insights on larger household expenses and availability of resources to spend autonomously.

3.2 Potential effects of account ownership on women's empowerment

Bank accounts are likely to increase women's propensity to save (Dupas and Robinson, 2013). Increased savings or control over money through account ownership can improve her participation in household's purchase decisions and spending autonomy as well as change consumption allocations. However, in the setting of limited agency and mobility, women may not be able to fully realize these gains. I describe three potential channels that can determine how account ownership affects married women's empowerment: spousal relations, account operability and frequency of transactions.

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[11]Men are more likely to consume tobacco products and alcohol (Cawley and Ruhm, 2011; Oncini and Guetto, 2018) and have a more inelastic demand than women (Nelson, 2014). Fuel consumption captures usage for automobiles and all purposes other than cooking. With the share of licensed female drivers in India less than 7% as recently as 2023 (Ministry of Road Transport and Highways (India), 2023), fuel expenditure is also expected to be driven by men's demand.

[12]In these papers, women are asked about their participation in decisions on food purchase and preparation, control/ use of income, employment, productive decisions in agriculture, mobility, attitudes towards gender equality, borrowing, lending, health, attitudes towards/experience of violence.

First, trust and cooperation between spouses are essential to women's control over their bank account in patriarchal societies such as India's. For instance, cooperation may reduce spouse's controlling behaviors. Ashraf (2009) find that communication increases resources that men allocate to their wives. This is an important channel regardless of whether women's accounts are individually or jointly owned.

Second, women's ability to operationalize her account is key to realizing her gains from financial inclusion. This ability is dependent on her mobility outside home as well as financial literacy. Greater autonomy in physical mobility increases her likelihood to visit her bank branch, while financial literacy improves her autonomous handling of the bank account.

Third, given positive account balance and easy account operability, a bank account serves as a liquid asset. Frequent transactions from the bank account may improve women's autonomy in saving and spending. Factors that can positively impact women's account balance and, subsequently, transactions with their account are employment and receipt of transfers. Household's trust in banks can also increase the likelihood that money is stored in the account.

4 Data

4.1 Household panel

I analyze household's resource allocation - saving, borrowing and consumption - using the world's largest household panel, Consumer Pyramids Households Survey (CPdx). Starting from January 2014, this survey interviews households every four months. I analyze trends for two survey waves before policy (January to April and May to August 2014) and three survey waves after (September to December 2014, January to April 2015 and May to August 2015). My sample consists of 13,148 households where wife of the household head, also the eldest woman, doesn't have a bank account. This sample excludes households that were in the top 5% of monthly expenditure distribution at least once, relocated to another district, reported no adult member, and where the household head changed during the analysis period. Finally, only the districts where the policy was enforced in the first year are included in the analysis (see 2.1). Appendix Table A.1 describes demographic and financial characteristics of the sample by survey wave. Population-weighted averages of the household panel show that account ownership by men was saturated at the time of policy implementation. The households in the sample had at least 4 members, were predominantly Hindu (about 82%) and resided in towns. The male head of the household and his wife were middle aged at the beginning of the survey, about 42 and 38 years, respectively, and had completed 7 and 5 years of schooling. Almost 70% of the households belonged to backward castes or tribes.

4.2 District panel

The district panel combines cross-sectional household surveys, administrative and census data.

4.2.1 Individual and household surveys

The India Human Development Survey (IHDS) rounds 2004-05 and 2011-12 capture women' decision making before policy and the Demographic Health Survey (DHS) 2015-16 captures post-policy outcomes. Both surveys are nationally representative and their sampling method is described in the Appendix. The two outcome variables are women's reports of (alone or jointly) participating in decisions on large household purchases, and having money available for autonomous use. I restrict my sample to 328 districts that were enumerated in both surveys and where the policy was implemented in Phase 1[13]. The dataset is further restricted to married women. Appendix Table A.2 summarizes the variables included as covariates from each of the household surveys. These households have about 5.5 members, majority have a Hindu household head and reside in rural areas. Respondent women are about 33 years old and have completed 4-6 years of schooling.

4.2.2 Administrative data on bank accounts and branches

I use the the total bank branches and accounts to investigate ex-ante branch density and the impact of the policy on account ownership, respectively. This data is published at the district level by the RBI in the "Database on the Indian Economy". While the Appendix Table aggregates both variables in only two time periods, before and after policy, I use the annual time series for financial years[14] 2006 through 2017 in the analysis. The dataset does not distinguish whether the account is used for savings or business, individual or jointly owned, or the gender of the account owner. It also does not report the volume of transactions. Meanwhile, the total number of bank branches can be disaggregated by their ownership into public, foreign, regional rural, private, and small finance.

4.2.3 Population Census

I include district-level aggregates of rural and urban population, percent literate, percent scheduled caste/ tribe, number of schools and colleges, access to paved road and electricity from the 2001 and 2011 Population Censuses. I extract these variables from the Socioeconomic High-resolution Rural-Urban Geographic Platform for India (SHRUG) dataset.

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[13]I match observations to the 2001 Population Census boundaries for consistency between IHDS and DHS. Details in Appendix A.2.

[14]A financial year starts April 1 of the preceding calendar year and ends March 31 of the current calendar year. Example, financial year 2006 starts April 1 2005 and ends March 31 2006.

5 Empirical strategy

5.1 Women's account ownership and household resource allocation

In this section, I exploit the sharp timing of the policy to estimate changes in household resource allocation in response to the woman opening a bank account. I use a balanced panel of households where the wife of the household head was unbanked before policy. The sample is also restricted to households where she is the eldest woman in the household to capture effects of the woman with the highest potential to influence household spending[15]. The survey data does not identify bank accounts opened under PMJDY, therefore, I analyze the effects of *any new bank account* immediately after the policy was implemented.

The panel observes households eight months before the policy and twelve months after. Households where the wife of the male household head opened a bank account in the survey wave after PMJDY was implemented (n=3,302) are characterized as the "treated" group. All households where the wife remained unbanked in the first year of the policy form the "comparison" group (n=9,846). To address selection concerns of household's assignment into treated and comparison groups, I re-weight outcomes based on household's likelihood to be treated. The following equation estimates the likelihood of the wife being banked for all households in the analytical sample using all the demographic variables available in the survey data as well as information on the household's financial access. These include religion and caste of household head, sex ratio of adults in the household, urban/ rural location, age and years of completed education of household head and his wife, and the number of women and men in the household owning a bank account, trading account, credit card and mobile phone. The binary variable D_{hw} is equal to 1 whether the wife opened an account and 0 otherwise. The model also includes household (θ_h) and survey wave (ϕ_w) fixed effects.

$$Pr(D_{hw} = 1 | \boldsymbol{X_{hw}}; \theta_h; \phi_w) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1 + ... + \beta_k X_k; \theta_h; \phi_w)}} \qquad (1)$$

Table 1 reports pre-policy averages of the covariates in $\boldsymbol{X_{hw}}$ in the original sample and after re-weighting using the propensity score weights. The treated and comparison groups are statistically more similar after this reweighting. Figure 1 shows a significant overlap (common support) between the likelihood estimate for households in the treated and comparison groups allowing me to estimate the aggregate treatment effect of wife's account ownership next. Outcomes of households who are more likely to be treated, receive

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[15]The literature predicts lower autonomy for women in the household in the presence of mother in-law. For instance, Anukriti et al. (2020) find that mother in-laws limit women's social networks and decision making ability on family planning, and Gram et al. (2018) highlight the negative implications of mother in-laws on women's financial autonomy.

a weight close to 1 while households with expected unlikely treatment are assigned a weight greater than 1. I combine the propensity score weights with a regression adjusted model below that estimates differences pre and post policy (in time t) in the comparison group units C conditional on covariates $\boldsymbol{X_{hw}}$, household (θ_h) and survey wave (ϕ_w) fixed effects.

$$m(X_{hw}, \theta_h, \phi_w) = E[Y_{w>t} - Y_{w<t} | \boldsymbol{X_{hw}}, \theta_h, \phi_w, C = 1] \tag{2}$$

The resulting DiD model is consistent if either equation 1 or 2 are correctly specified, making it doubly robust. $\hat{Y}^{AIPW}$ is the average treatment on the treated group ($D_{hw} = 1$).

$$\hat{Y}^{AIPW} = E\left[\frac{D_{hw} = 1}{E(D_{hw} = 1)}(\triangle y_{hw} - m(\boldsymbol{X_{hw}}, \theta_h, \phi_w) - \frac{\frac{\hat{p}}{1-\hat{p}}C}{E[\frac{\hat{p}}{1-\hat{p}}C]}(\triangle y_{hw} - m(\boldsymbol{X_{hw}}, \theta_h, \phi_w)) \right] \tag{3}$$

Observations in the treatment group are weighted by the share of treated households in the sample $D_{hw} = 1/E(D_{hw} = 1)$ for treatment observations reduce the variance in estimation of treatment effects. The estimated probability of treatment $\hat{p}$ (propensity score) is conditional on covariates $\boldsymbol{X_{hw}}$, household (θ_h) and survey wave (ϕ_w) fixed effects. Observations in the comparison group are re-weighted to represent the treatment group in the absence of treatment. These weights are stabilized by the expected odds of treatment for the observations in the comparison group $E[(\hat{p}/1 - \hat{p})C]$. Standard errors are clustered by household to allow serial correlation of trends within household.

I analyze two types of outcome variables. First, binary indicators of household's saving, borrowing and investment behavior. These are - whether household saves in formal sources, saves in microfinance institutes, borrows from formal sources, borrows from informal sources, saves in gold and invests in real estate/ private equity. Second, per capita monthly consumption allocations for women, men and children. I construct three consumption categories that are likely influenced by women's decision making. The first category includes items most strongly correlated with women's private consumption: clothing and footwear, cosmetics, accessories, and beauty goods and services. The second category includes items that are correlated with women's time spent on domestic chores such as cooking and cleaning. These are food, utensils and toiletries. The third category includes items that help women minimize the time they spend on household chores. These include time saving appliances (e.g. kitchen appliances and washing machine) and services such as domestic help. The fourth consumption category includes items influenced by male preferences. This includes intoxicants such as tobacco products and liquor, shaving articles and fuel for purposes other than cooking. The fifth category is household's total expenditure on education including fees to schools, colleges and private tuition; books; uniforms etc. All consumption values are analyzed in real terms. They

are converted into per-capita so that the outcome variable is scale invariant[16]. Appendix table A.3 describes each variable in detail.

Monthly disaggregation of per-capita consumption shows significant pre-trends in the first survey wave between treatment and comparison group (results in Supplemental Appendix). This may be the result of noise generated from recall bias as respondents have to report consumption of past four months as the time of interview. To address this, I restrict consumption data of every household to the month prior to interview date. This results in one month's observation for every survey wave. I use equation 3 to analyze effects of wife's account ownership and include month fixed effects instead of survey wave fixed effects to control for seasonal trends in consumption by the month of recall selected.

I include two tests for parallel trends in the outcome variables between the two groups in the pre-treatment time periods. First, I report aggregate differences between re-weighted treatment and comparison groups by survey wave in Tables 3 and 4. Second, I report the chi-squared test for whether treatment effects in all pre-treatment time periods are jointly 0 and the p-value of this estimate in the last two rows of Tables 5 and 6. Finally, I report sharpened q values of δ coefficient to control for the risk of false discovery rate (Type 1 errors) from testing multiple hypotheses (Benjamini et al., 2006) in each of the results tables.

5.2 District-wise account expansion and women's decision making

5.2.1 Identifying the impact of PMJDY on account ownership

Figure 3 shows that the supply of bank branches before the policy was positively correlated with account ownership in a district. Therefore, the provision of no-fee bank accounts is likely to have the largest impact in under-banked districts, viz, districts with lower bank branch availability. I classify districts as having the highest *potential* for impact (henceforth, "High Impact") if their ex-ante branch density[17] (bank branches per 100,000 population) was equal to the state median or below and the remaining as low potential for impact or "Low Impact". Sorting districts by the state median instead of the national accommodates the heterogeneity in levels of bank infrastructure and economic growth between states[18]. The equation below measures annual differences in bank

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[16]Chen and Roth (2023) show that if treatment affects the extensive margin, then rescaling the outcome variable affects the coefficient estimate of the treatment effect.

[17]District-level branch density was reported by RBI in March 2014 and the policy was implemented in August of the same year.

[18]Figure 6 in the Supplemental Appendix summarizes the heterogeneity in the state median values in the sample.

accounts and bank infrastructure between High and Low Impact districts.

$$Y_{dy} = \rho_0 + \sum_{j=2006}^{2017} \rho_j \mathbb{1}(\tau_y = j) \times HighImpact_d + \omega \mathbf{X_{dy}} + \phi_d + \tau_y + \epsilon_{dy} \qquad (4)$$

where

$$HighImpact_d = \begin{cases} 1, & \text{if District's bank branch density} \leq \text{State median} \\ 0, & \text{Otherwise} \end{cases}$$

The following outcome variables are analyzed - the total bank branches in a district per 100,000 population, total bank accounts per 100,000 population, and percent change in number of bank accounts since 2014. Differences by the continuous variable of bank branch density are reported in Appendix Table C.3. The data does not identify sex of the primary account owner, therefore, I cannot test for expansion of women's accounts specifically. Analysis of the survey data shows an increase in the proportion of banked women in High Impact districts by 3 percentage points [19]. The coefficient ρ_j estimates mean difference in the outcome variable between High and Low impact districts for financial years 2006 to 2017. I include unit (district) fixed effects, ϕ_d, and time (financial year) fixed effects, τ_y. Table 2 describes ex-ante differences between High and Low Impact districts in household and population characteristics. The matrix $\mathbf{X_{dy}}$ includes variables from Table 2 as well as inter-temporal differences that predict a district's classification as High/Low Impact[20]. The household variables are extracted from the 2012 IHDS and district-level variables such as total urban/rural population, literacy and caste composition and infrastructure (schools, electicity and roads) from the 2001 and 2011 Population Censuses. I cluster standard errors at the district level.

5.2.2 Women's decision making in High versus Low Impact districts

Equation 5 estimates the effect of account expansion on women's empowerment between High and Low Impact districts in response to the policy. Empowerment in this model is measured using two binary variables - women reporting participation in decision making on large household expenditures (alone/ jointly with spouse), and having spending autonomy. Due to survey design, this test is restricted to married women between ages

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[19]Due to discrepancies in survey questions between IHDS and DHS, this analysis is imprecise. IHDS asks whether the woman has her name on a bank account while DHS asks whether she has a bank account that she uses. See Table 3 in Supplemental Appendix)

[20]These variables are selected using post-double-selection methodology by Belloni et al. (2013) which runs two Least Absolute Shrinkage and Selection Operator (LASSO) regressions and reports the intersection of controls that are significantly correlated with the dependent variable in both estimations. The first regression tests for effects of all potential controls on the outcome variable in equation 4 and the second tests the effect of the same controls on the binary variable of High/Low impact. This is operationalized using the STATA module pdslasso.

15 and 49. A difference-in-difference estimation eliminates the residual differences between districts that explain women's empowerment levels. Table 8 tests the identifying assumption that empowerment outcomes between High and Low Impact districts did not vary before policy. Verifying that women's empowerment evolved statistically similarly between the two district types, the coefficient β_1 in the equation below captures the effect of unanticipated acceleration of bank accounts on women's empowerment.

$$Empowerment_{idt} = \beta_0 + \beta_1(HighImpact \times Post)_{dt} + \beta_2 Post_t + \eta_d + \boldsymbol{\mu Z_{idt}} + \epsilon_{idt} \quad (5)$$

The variable $HighImpact = 1$ for districts with bank branch density equal to the state median or below at the time of policy implementation, and 0 otherwise. The binary variable $Post$ measures the average differences before and after policy. Women and household-specific covariates included in $\mathbf{Z_{idt}}$ are selected using post-double selection method (Belloni et al., 2013). Finally, η_d controls for district-wise differences in the outcome variables, and standard errors are clustered at the district level. In this analysis, empowerment outcomes and covariates are observed over the calendar year t instead of financial year y.

I strengthen the analysis by controlling for any bank branches opening up in anticipation of rising demand from the policy by including controls for annual changes in bank branch density in 2015 and 2016 (columns 3-4, Table 9). I also investigate whether women's outcomes are consistent for High/ Low Impact districts defined by public or private sector bank branches, and effects of the continuous measure of bank branch density in Appendix Table C.3.

Mechanisms

I also explore different factors that may interact with account ownership to impact women's empowerment - control over the account, account operability and balance. In the absence of public datasets on whether a bank account is individually or jointly owned, and high prevalence of joint ownership among married couples, I investigate women's relations with their spouse and perceptions on wife beating as proxies for women's control over her bank account. Both variables are constructed from indicators using IHDS 2012[21]. Next, I similarly construct two district-level measures of women's account operability. Visiting the bank branch can be a significantly larger transaction cost for women than men. While the IHDS does not directly measure mobility related to bank access, it captures a number of situations in which women can leave their home without seeking permission from their spouse or other family members that I use to construct a score of her mobility. Another factor that impacts women's ability to operate their account is financial literacy. I use years of completed schooling as a proxy for this. Finally,

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[21]Definition of each variable is provided in Appendix Table A.5.

since account balance and transactions are not directly observable, I infer account use through women's employment, household's confidence in banks and household's receipt of government transfers.

Other outcomes of women's empowerment

In this section, I apply the DiD model in equation 5 to other non-financial measures of women's empowerment. These are district-wise aggregates of women's fertility, mobility outside home, and dowry-related violence by spouse or his relatives[22]. The first three indicators are extracted from the household surveys IHDS and DHS, and the violence data is reported by the National Crime Records Bureau. Domestic violence is likely under-reported to the police, therefore, the analysis will provide a lower bound estimate of the impact of account ownership on violence against women linked with dowry payments.

6   Results

6.1   Effect of wife's account ownership on household's resource allocation

Tables 3 and 4 report differences in household resource allocation between treatment and comparison groups by survey wave. Each row estimates the difference relative to the pre-policy survey (May to August 2014). The first row in both tables verifies parallel trends in the outcome variables before policy implementation. There were no pre-trends in formal savings, or formal and informal borrowing. Two other variables do not satisfy the test for parallel trends. Before, policy, households in the treated group were significantly less likely to save in self-help groups, chit funds and other microfinance institutions than the comparison group (column 2) and invest in real estate/ private equity before the policy (column 6)[23].

After policy, households in the treated group were 11.5 percentage points more likely to save in formal instruments such as bank and post office deposits or government saving bonds (column 1, Table 5). This supports the findings of Ashraf et al. (2010) and Robinson (2012) where women were more likely to save when provided commitment savings accounts or in response to positive, income shocks, respectively. This result can be interpreted as a lower bound estimate of women's preferences to save in formal institutions as the variable captures household-level decisions and not individual demand. The treated

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[22]Dowry is the transfer of wealth, property, or goods from the bride's family to the groom or his family at the time of marriage. Such transfers are prohibited in India by law since 1961.

[23]Table 5 provides additional evidence as the p-value of pre-trends. p-value of the chi-squared estimate of joint significance of these outcome variables is less than 10%.

group's likelihood to save in gold and related assets, a traditional form of saving and more directly influenced by women's choice, increased by 1.6 percentage points. The addition of the wife's bank account also influenced households' borrowing behavior. Uptake of formal loans from banks, registered companies and employers increased by 0.5 percentage points while borrowing from informal sources such as moneylender, shops and relatives reduced by 0.7 percentage points.

The parallel trends test for household consumption allocations shows no significant pre-trends in per-capita household expenditures on women's consumption, cooking and sanitation, and education (first row of Table 4). Consumption of time-saving goods and services and articles preferred by men (reported in columns 3 and 4) do not satisfy the test for parallel trends. In response to wife's bank account, I find no changes in the consumption of goods that are strongly correlated with women's private consumption in (column 1) Table 6. Household spending on food and sanitation (column 2) is potentially influenced by women but these are essential goods and the small but statistically significant decline of 0.36% doesn't necessarily imply greater control over spending. The treated group households reported 6% lower spending on education. The literature evaluating non-income transfers to women finds contrasting effects on education making it difficult to predict women's preferences. The results also differ between countries: while women's assets at the time of marriage increased the share of expenditure on education in Bangladesh and South Africa, there is a negative correspondence in Indonesia. There was a positive effect of men's asset ownership in Ethiopia instead (Quisumbing and Maluccio, 2003). In the case of women's representation in local leadership positions in India, while the gender gap in education of adolescents reduced (Beaman et al., 2012), education was not the focus of decisions on the provision of public goods by elected women (Chattopadhyay and Duflo, 2004). I also investigate households' consumption patterns on miscellaneous categories (Appendix Tables C.1 and C.2) and find that women's account ownership increased spending on more visible items such as entertainment (movies, concerts and sports), rent and utilities and healthcare.

The combined results on households' saving and borrowing behavior as well as consumption offer insights into the nuanced aspects of women's empowerment. The addition of wife's account allowed households to expand saving and borrowing. This is consistent with experimental evidence that establishes women's preference for saving. More specifically, these households were more likely to save in gold which is an asset preferred by women. The implications of consumption allocations on women's decision making ability is ambiguous. While reducing transaction costs of savings account increased daily private expenditure in Kenya (Dupas and Robinson, 2013) and educational expenditures in Nepal (Prina, 2015), in my sample; women's private consumption remained unaffected

and there was a decrease in expenditure on cooking, sanitation and education. I build upon this discussion of women's control by examining changes in women's self reports of decision making in the next section.

6.2 Policy's effect on account ownership and women's empowerment

6.2.1 Policy-induced acceleration on bank account ownership

Figure 4 plots the differential trends between High and Low Impact districts in bank infrastructure and account ownership. The High Impact districts had fewer estimated bank branches (top panel) and accounts (middle) per 100,000 population for financial years 2006 through 2017. The bottom panel reports the percent growth of bank accounts in High and Low Impact districts since 2014, the year the policy was implemented. Given the level differences in account ownership before policy, High Impact districts saw faster growth of accounts relative to Low Impact. Anchoring differences with respect to the financial year 2014 (starting April 1, 2013 and ending on March 31, 2014) shows that the expansion of bank accounts was statistically similar before the policy and diverged after 2014[24]. The growth of bank accounts in High Impact districts was almost 10 percentage points larger than the Low Impact districts (Table 7). Since account ownership was closer to saturation in the Low Impact districts, they were not affected by the policy significantly. I exploit this unanticipated change in expansion rates of bank accounts and test for changes in women's decision making while controlling for differences in the ex-ante characteristics of the two types of districts.

6.2.2 Account expansion and women's empowerment

Table 8 verifies there were no pre-trends in empowerment outcomes between High and Low Impact districts. The first row reports differences between the two types of districts and across two pre-policy survey rounds. After policy, women's involvement in decision making did not change in response to the faster growth of bank accounts in High Impact districts. Table 9 reports that the coefficient of the interaction term from equation 5, β_1, is close to 0. The results are consistent when I control for changes in bank branch density after policy (columns 3-4).

Appendix Table C.3 reports the effects on account expansion and women's empowerment for different definitions of High/ Low Impact. Columns 1 and 2 use the state median branch density of government and private-owned banks, respectively while column 3 uses the district's continuous measure of total branch density. Panel A reports that the post-policy expansion of account ownership is largely explained by the ex-ante differences in

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[24]Tabular results in Supplemental Appendix.

the supply of private bank branches. Column 3 verifies the negative linear correspondence between the acceleration of account ownership and bank branch density after the policy was implemented. Panels B and C show that women's participation in decision making was unaffected by either definition of ex-ante bank infrastructure in columns 1-2 with one exception. Women's spending autonomy reduced by 3.5 pp in districts with less than median density of private banks lower. Column 3 shows a positive correspondence in women's decision making ability as branch density increases. However, this result is driven by the upper quintile of the density distribution. (Effects by quintile of branch density are available on request.)

Mechanisms

Table 10 shows no heterogeneous treatment effects between High and Low Impact districts by ex-ante measures of spousal relations and acceptability of wife beating. Factors affecting account operability yield ambiguous results in Table 11 - while women in High Impact districts report more participation in purchase decisions when they have greater mobility, they report lower autonomous use of money in districts with increasing years of schooling. Table 12 reports heterogeneity by variables that proxy women's account use. In High Impact districts where households had greater confidence and prior engagement with banking institutions, women were more likely to participate in purchase decisions after the policy. This supplements the findings in Pelras and Renk (2023) where lack of trust in institutions resulted in lower uptake of public health services. Employment and receipt of transfers from the government did not affect women's decision making any differently between High and Low Impact districts.

Other outcomes of empowerment

The lack of relative improvement in women's participation in spending decisions also corresponds with no changes in other dimensions of women's empowerment in the High versus Low Impact districts during this time. Applying the DiD estimation to non-financial measures of women's empowerment in Table 13, I find that changes in women's fertility, mobility and dowry-related violence were statistically similar between the two district types.

7   Conclusion

This paper stems from the global emphasis on financial inclusion as a pathway to alleviate poverty and small-scale experiments on the impacts of account ownership on women's economic empowerment and agency. There is limited study of the large-scale policies that directly increased bank account ownership in low and middle income coun-

tries, particularly in relation to women's empowerment. This paper seeks to fill that gap by investigating the effects of India's 2014 bank account expansion policy, which mandated free, on-demand accounts to unbanked individuals. Specifically, the research examines the impact of this exogenous shock to account ownership on household resource allocation and women's decision-making ability.

The paper exploits a high frequency household longitudinal survey and examines changes in household resource allocation when the wife of the household head opened a bank account. I compare households where the wife opened a bank account within four months of the policy's implementation (*treatment*) with households where the wife remained unbanked at least a year (*comparison*) after using an augmented inverse probability-weighted DiD. In a separate analysis at the district level, I exploit the pre-policy differences in bank branch density that led to differential trends in growth of bank accounts, and analyze whether unexpectedly higher rates of account ownership impacted women's decision making.

Households with newly banked wives showed an increased propensity to save in formal instruments and gold as well as switch out borrowing from informal sources to formal financial institutions. However, there were no significant changes in women's discretionary spending patterns. The district-level analysis finds no significant improvement in women's participation in household's decisions on large purchases or autonomous use of money in districts that experienced substantial increases in account ownership after policy. There are heterogeneous effects by ex-ante aggregates of women's mobility outside their home and household's trust and engagement with banks. The results suggest that in settings with rigid social norms around women's agency and mobility, women's bank accounts may be treated as a joint asset for the household, thereby improving household's financial behavior. Women's accounts translate into greater control over money or spending decisions only in regions where women had greater ex-ante mobility. Household trust in banking institutions also matters in the the impact of bank account ownership as it corresponds with greater involvement of women in decision making.

This paper's findings are relevant to global policy debates on financial inclusion as the analysis adds empirical evidence from the largest account expansion policy of the 21st century. Although bank accounts are a low-cost tool to promote savings and credit access, they may not directly enhance women's control over resources. Like Dupas et al. (2018), this paper studies increased demand for accounts driven by reduced costs, without evaluating service quality or financial literacy. While policy attention has shifted towards digital financial services to reduce transaction costs and expand access (Lauer and Lyman, 2015; Pazarbasioglu et al., 2020; Brown et al., 2024), traditional accounts remain a key

entry point for financial inclusion in many low- and middle-income countries. They are particularly crucial for rural women and low-income households who continue to face barriers to digital adoption. The results of this paper suggest that more targeted interventions are needed to improve women's financial autonomy.

8 Figures
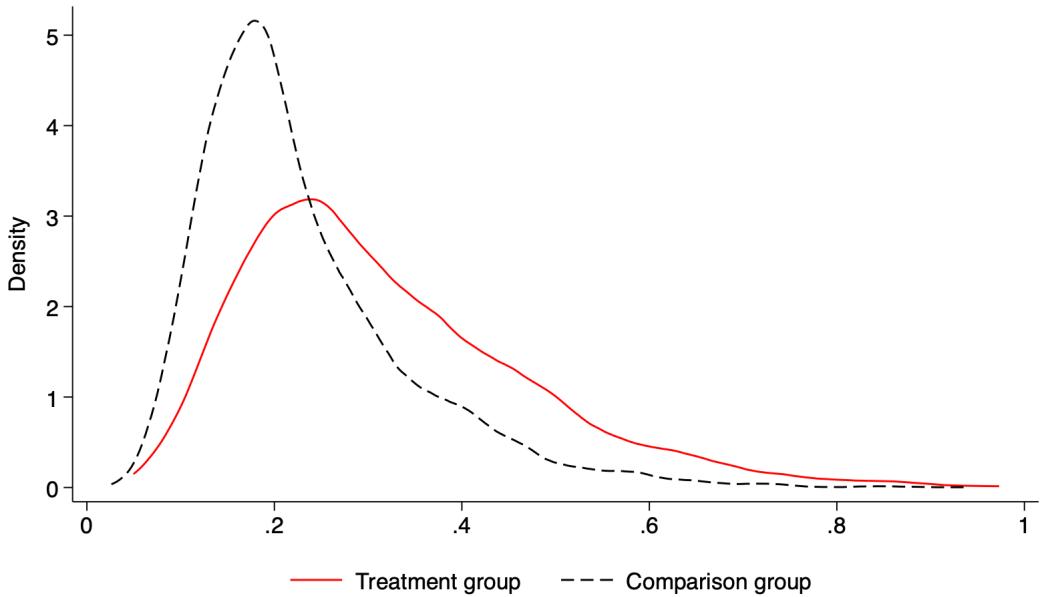
Figure 1: Distribution of Propensity Score across Treatment and Comparison Groups

Notes: The figure plots the predicted likelihood of household's assignment to treatment or comparison group based on household's observed characteristics before policy was implemented. The treatment group includes all households where the wife was unbanked before policy and opened a bank account in the survey wave after policy (September through December 2014). The comparison group includes households where the wife remained unbanked in the first year of the policy. Table 1 describes the covariates included in predicting wives' propensity to be banked.
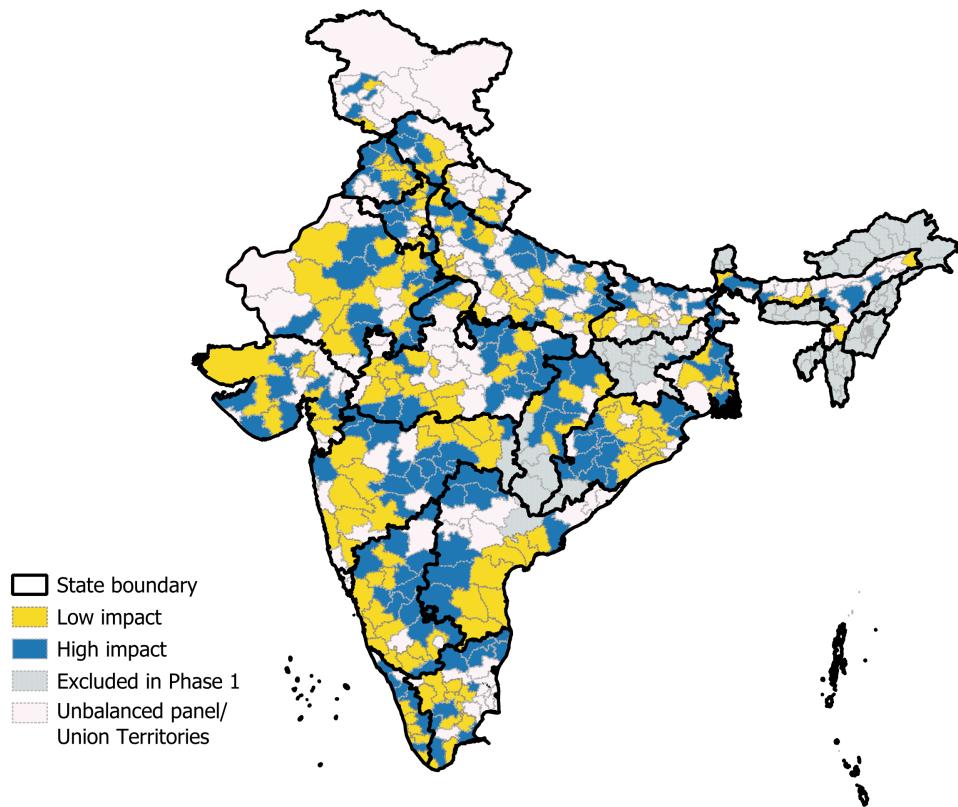
Figure 2: Districts included in sample

Notes: This map of India uses boundaries consistent with the 2001 Population Census. Districts are characterized by their exposure to the policy. "High impact districts" are districts with less than/equal to state median bank branch density in March 2014 and "Low impact" are districts above state median branch density. Districts that were excluded from phase 1 of the account expansion policy are highlighted in gray. Remaining districts in white were excluded from the analysis if they were either not enumerated both before and after policy in the household surveys on women's decision making (unbalanced panel), or part of Union Territories.
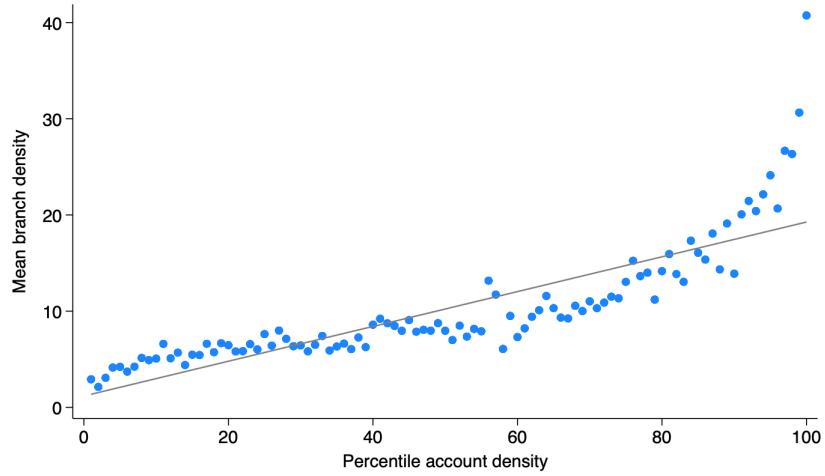
Figure 3: Correlation between bank branch and account density before policy

Notes: The figure plots the correspondence between district-level bank branches and accounts before policy implementation. Districts are binned into percentile scores of total density. Plotting the average bank branches or branch density for each percentile shows that districts with more physical branches had more total accounts per person. The density variables are estimated per 100,000 population. All variables are district-wise estimates from April 2013 until March 2014. Data sources: Reserve Bank of India and Population Census of India 2011. Author's calculations.
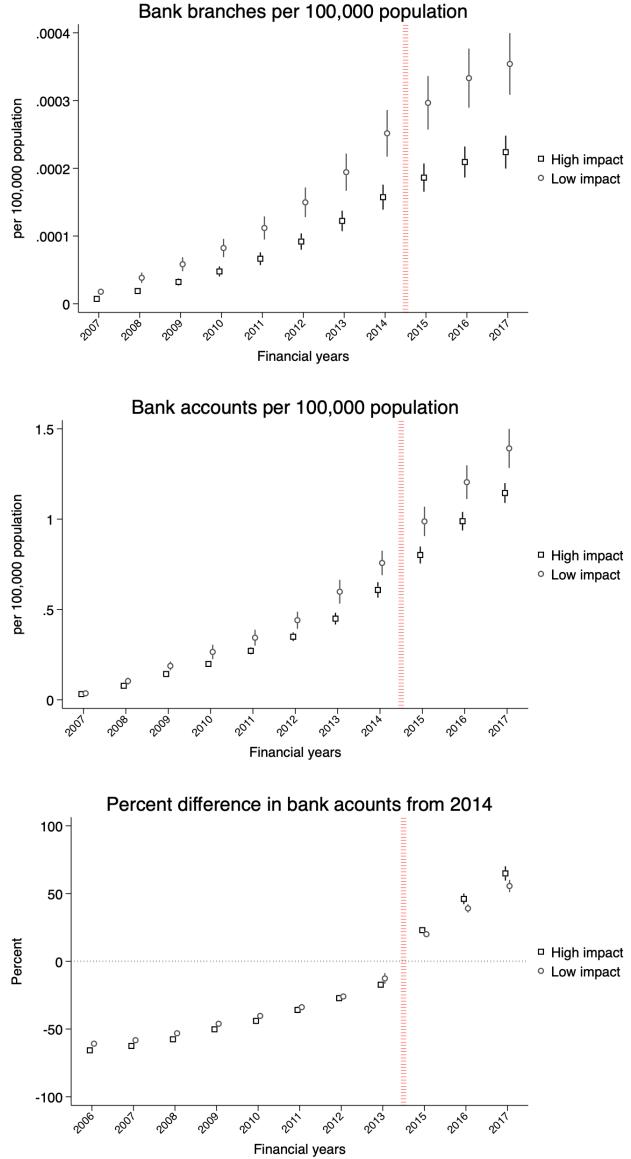
Figure 4: Trends in bank infrastructure and account ownership for High/Low Impact districts

Notes: This figure reports estimated annual trends in bank branch and accounts for High and Low Impact districts. Using Eq. 4, these results control for time-invariant characteristics of a district and variables correlated with both the outcome variable and assignment to High/Low Impact. The top panel plots the estimated bank branch density (total bank branches per 100,000 population) in a district, middle panel reports bank account density, and bottom panel depicts percent difference in accounts since 2014. The x axis depicts financial years where the financial year 2006 includes observations from April 1, 2005 until March 31, 2006, and so on. Each square is the estimated mean of the dependent variable for a High Impact district in that year, while every circle reports estimates for a Low Impact district. The vertical solid lines depict 95% confidence intervals and the red dashed line indicates time of policy implementation (August 2014). In the top panels, the financial year 2006 is omitted as reference group while in the bottom panel, 2014 is omitted as the reference year.

9 Tables

Table 1: Balance of covariates in original and inverse probability weighted (IPW) sample

	Original Sample					Inverse Probability Weighted Sample				
	Treatment		Comparison		Pairwise	Treatment		Comparison		Pairwise
Covariate	Mean	SE	Mean	SE	t-test	Mean	SE	Mean	SE	t-test
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number Children	1.57	-0.04	1.67	-0.03	-0.1	1.7	-0.05	1.64	-0.03	0.06*
Adult sex ratio	0.98	-0.01	0.96	0	0.02**	0.96	-0.01	0.96	-0.01	0
Household size	4.24	-0.05	4.38	-0.04	-0.14	4.38	-0.06	4.34	-0.04	0.05**
Buddhist (%)	0.85	-0.4	0.09	-0.05	0.76	0.28	-0.14	0.31	-0.19	-0.03
Christian (%)	0.55	-0.16	0.35	-0.11	0.2	0.39	-0.12	0.39	-0.13	0
Hindu (%)	84.46	-1.69	82.47	-1.66	1.99*	83.87	-1.77	84.01	-1.52	-0.14
Jain (%)	0.15	-0.1	0.04	-0.02	0.11	0.07	-0.05	0.07	-0.04	0
Muslim (%)	10.42	-1.19	13.62	-1.33	-3.2	11.6	-1.33	11.77	-1.12	-0.17
Intermediate Caste (%)	8.94	-1.08	5.79	-0.92	3.14	6.11	-0.77	7.01	-1.09	-0.89**
Other Backward Caste (%)	40.27	-1.68	41.84	-1.71	-1.57	41.43	-1.88	41.45	-1.68	-0.02
Scheduled Caste (%)	23.84	-1.36	25.17	-1.52	-1.33***	24.77	-1.48	24.55	-1.48	0.21
Scheduled Tribe (%)	4.04	-0.68	4.57	-0.86	-0.54**	4.76	-0.83	4.37	-0.81	0.4
Male head: Education	7.36	-0.2	6.13	-0.23	1.23***	6.47	-0.2	6.5	-0.24	-0.03***
Wife: Education	5.16	-0.21	3.59	-0.17	1.57***	4.07	-0.2	4.05	-0.19	0.03**
Wife: Age	39.79	-0.28	39.52	-0.29	0.27	39.7	-0.3	39.56	-0.28	0.14
Male head: Age	45.23	-0.34	44.47	-0.32	0.76	44.78	-0.35	44.65	-0.32	0.13
Urban (%)	73.77	-2.58	62.14	-2.93	11.64***	64.1	-3.36	65.55	-2.78	-1.45
Quantile of asset index	2.94	-0.07	2.43	-0.07	0.51***	2.75	-0.07	2.5	-0.07	0.25***

(Contd.)

Covariate	Original Sample					Inverse Probability Weighted Sample				
	Treatment		Comparison		Pairwise	Treatment		Comparison		Pairwise
	Mean	SE	Mean	SE	t-test	Mean	SE	Mean	SE	t-test
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Wife has Bank account (%)	0	0	0	0		0	0	0	0	
Wife has Credit card(%)	0.06	-0.04	0	0	0.06	0	0	0	0	
Wife has mobile phone (%)	23.83	-2.06	9.63	-1.21	14.21***	19.44	-1.79	10.5	-1.27	8.93***
Women have Bank account (num)	0.09	-0.01	0.04	0	0.05***	0.07	-0.01	0.05	0	0.03
Women have Credit card (num)	0	0	0	0	0	0	0	0	0	
Women have mobile phone (num)	0.35	-0.03	0.15	-0.02	0.20***	0.28	-0.02	0.16	-0.02	0.12***
Men have Bank account (num)	1.29	-0.02	1.28	-0.01	0.01	1.29	-0.02	1.28	-0.01	0.01
Men have Credit card (num)	0.01	0	0.01	0	0.01**	0.01	0	0.01	0	0
Men have mobile phone (num)	1.34	-0.02	1.27	-0.02	0.08	1.29	-0.02	1.28	-0.02	0.01**
Household size	4.24	-0.05	4.38	-0.04	-0.14	4.38	-0.06	4.34	-0.04	0.05**
Number Adults	2.67	-0.03	2.71	-0.03	-0.04	2.68	-0.03	2.7	-0.02	-0.01
Adult sex ratio	0.98	-0.01	0.96	0	0.02**	0.96	-0.01	0.96	-0.01	0

Notes: The table reports mean values and standard errors of variables in wave 2 (pre-policy) for the (original) sample of households drawn from CPdx (columns 1-4), and the differences between mean values of the treatment and comparison group (column 5). The treatment groups includes where the wife was unbanked before policy and opened a bank account in the survey wave after policy (September through December 2014). The comparison group includes households where the wife did not own a bank account before and in the first year of the policy (until August 2015). Columns 6-9 report means and standard errors of the sample transformed using inverse probability weighting, and column 10 estimates the mean difference. The sample includes households where the wife of the male household head did not have a bank account in wave 2. In these households, there is no older female present. The following households are excluded from analysis - Households with no adult member, where the head of the household changed or household relocated outside district between waves 1 and 5, members switched out of account ownership and whose total monthly expenditure was above the 95th percentile at least once. * p< 0.1, ** p< .05, *** p< .01

Table 2: Balance test of High/ Low impact districts before policy

| Variable | High impact (n=168) | | Low impact (n=160) | | Pairwise t-test |
| | Mean | SE | Mean | SE | Difference |
	(1)	(2)	(3)	(4)	(5)
Respondent has bank account	0.35	-0.01	0.4	-0.01	-0.05***
Alone/Joint decision on big purchases	0.5	-0.01	0.5	-0.01	0
Spending autonomy	0.9	-0.01	0.91	-0.01	-0.01
Household size	5.62	-0.06	5.44	-0.06	0.18**
Household asset quintile	2.82	-0.07	3.26	-0.06	-0.44***
Female headed household	0.12	-0.01	0.13	-0.01	-0.01
Household head: Schooling	5.4	-0.13	6.19	-0.13	-0.79***
Household head: Hindu	0.83	-0.02	0.83	-0.02	-0.01
Household head: Muslim	0.13	-0.01	0.11	-0.01	0.02
Household head: Christian	0.01	0	0.03	-0.01	-0.02**
Household head: Scheduled Caste	0.22	-0.01	0.21	-0.01	0.01
Household head: Scheduled Tribe	0.09	-0.01	0.07	-0.01	0.03
Head: Other Backward Caste	0.45	-0.02	0.44	-0.02	0.02
Household head: Intermediate Caste	0.19	-0.01	0.24	-0.02	-0.04*
Household head: Upper Caste	0.05	0	0.06	-0.01	-0.01*
Respondent: Age	33.88	-0.12	34.77	-0.13	-0.89***
Age gap between spouses	4.89	-0.11	5.28	-0.12	-0.39**
Respondent: Years of schooling	4.73	-0.17	5.95	-0.18	-1.21
Respondent is employed	0.59	-0.02	0.53	-0.02	0.06**
Respondent: employed in agriculture	0.4	-0.02	0.33	-0.02	0.07**
Respondent has children	0.92	0	0.92	0	-0.01
Number of children	2.54	-0.04	2.39	-0.03	0.14***
Spouse: Years of schooling	6.86	-0.14	7.66	-0.13	-0.80***
Spouse is employed	0.95	0	0.94	0	0.01**
Spouse employed in agriculture	0.31	-0.02	0.26	-0.02	0.06**
Rural (%)	78.03	-1.11	67.09	-1.49	10.94***
Scheduled Caste/ Tribe (%)	29.24	-1.19	24.66	-0.93	4.58***
Literate (%)	60.58	-0.74	66.86	-0.7	-6.28***
Electricity (hours)	3.78	-0.23	3.03	-0.13	0.75***
Paved road (kms.)	3.88	-0.2	3.08	-0.11	0.80***
Number of colleges	322.71	-29.22	313.75	-23.03	8.96
Number of high schools	971.64	-73.19	843.23	-52.98	128.42
Number of middle schools	7225.36	-571.76	5588.43	-313.46	1636.93**
Number of primary schools	11037.29	-908.84	8019.15	-454.32	3018.14***

Notes: The table reports averages and standard errors of household and population-level characteristics of High (columns 1-2) and Low Impact districts (columns 3-4) before policy. Column 5 reports mean differences between High and Low Impact districts. Household variables are extracted from IHDS 2011-12 while information on population and infrastructure is merged from the 2011 Population Census. $* \text{ p} < 0.1, ** \text{ p} < .05, *** \text{ p} < .01$

Table 3: Differences in household borrowing, saving and investment between treatment and comparison groups by survey-wave

	Formal Saving (1)	Saving SHG/MFI (2)	Formal Borrowing (3)	Informal Borrowing (4)	Gold Savings (5)	Investment (6)
Jan-Apr 2014	-0.003	-0.005*	-0.002	0.000	0.001	-0.012*
	[0.006]	[0.003]	[0.002]	[0.004]	[0.006]	[0.007]
Sep-Dec 2014	0.100***	0.006**	0.008***	-0.001	0.012*	-0.010
	[0.009]	[0.003]	[0.003]	[0.004]	[0.006]	[0.007]
Jan-Apr 2015	0.110***	0.007***	0.004	-0.016***	0.014**	0.003
	[0.009]	[0.003]	[0.003]	[0.004]	[0.006]	[0.007]
May-Aug 2015	0.135***	0.010***	0.001	-0.003	0.024***	0.014*
	[0.010]	[0.003]	[0.003]	[0.004]	[0.007]	[0.008]
Observations	64558	64558	64558	64558	64558	64558

Notes: The table reports estimated differences in household's uptake of financial services between the treatment and comparison groups by survey wave from the augmented inverse-probability weighted DiD. The first row provides evidence of parallel trends before policy. The survey wave, from May through August is omitted as the reference group. The dependent variables are specified in column titles and are binary indicators of whether- household has saved in bank/ post office deposits or government bonds (column 1), savings in Self-Help group, Chit fund, microfinance institute (column 2), outstanding borrowing from a bank/ registered company (column 3), loans from friends, moneylender and other informal sources (Column 4), saved in gold/ related assets (column 5) and invested in shares, mutual funds/ real estate (column 6). The sample is restricted to households where the wife of household head didn't have a bank account in the second survey wave. The treatment group includes households where female spouse of household head opened a bank account in survey wave 3 (September - December 2014) and comparison group includes households where the spouse didn't own a bank account at least 1 year after implementation (waves 1-5). The outcome and treatment models include covariates listed in Table 1. The estimation includes household fixed effects. Standard errors are clustered by household and reported in brackets. $*$ p$<$ 0.1, $**$ p$<$ .05, $***$ p$<$ .01

Table 4: Differences in consumption allocations between treatment and comparison groups by survey wave

	Women's consumption	Cooking & sanitation	Time saving	Men's consumption	Education
	(1)	(2)	(3)	(4)	(5)
Jan-Apr14	-0.506	-2.396	-0.797***	-10.612***	0.755
	[4.401]	[6.253]	[0.236]	[2.896]	[1.908]
Sep-Dec14	11.300**	11.301*	-1.042***	-14.446***	-8.294***
	[4.675]	[6.402]	[0.190]	[3.229]	[2.206]
Jan-Apr15	-3.081	-24.600***	-0.762***	-16.067***	-11.929***
	[4.589]	[6.666]	[0.198]	[3.457]	[2.393]
May-Aug15	-3.742	-26.085***	-1.538***	-4.154	-13.873***
	[4.819]	[7.122]	[0.228]	[3.724]	[2.434]
Observations	48165	48165	48165	48165	48165

Notes: The table reports estimated differences in per capita monthly consumption allocations between the treatment and comparison groups by survey wave from the augmented inverse-probability weighted DiD. The first row provides evidence of parallel trends before policy. Survey wave May through August is omitted as the reference group. The dependent variables are household's per capita monthly consumption expenses in real terms and are listed as column titles. Column 1 includes household's expenditure on clothing and footwear, cosmetics, accessories, and beauty goods and services; column 2 includes items complementary to domestic chores of cooking and cleaning such as food, utensils and toiletries; column 3 includes time saving appliances (kitchen appliances) and services (domestic help). Column 4 includes expenditure on tobacco products and liquor, shaving articles and fuel for purposes other than cooking. Column 5 analyzes total expenditure on education such as fees to schools, colleges/ private tuition, books, uniforms etc. The sample is restricted to households where the wife of household head didn't have a bank account in the second survey wave. The treatment group includes households where female spouse of household head opened a bank account in survey wave 3 (September - December 2014) and comparison group includes households where the spouse didn't own a bank account at least 1 year after implementation (waves 1-5). The outcome and treatment models include covariates listed in Table 1. The estimation includes household fixed effects. Standard errors are clustered by household and reported in brackets. $*$ p< 0.1, $**$ p< .05, $***$ p< .01

Table 5: Aggregate treatment effect: Wife's account ownership and household borrowing, saving and investment

	Formal saving	Saving SHG/ MFI	Formal borrowing	Informal borrowing	Gold	Invest-ment
Post × Treatment	0.115***	0.008***	0.005**	-0.007**	0.016***	0.002
	(0.008)	(0.002)	(0.002)	(0.003)	(0.006)	(0.006)
	[0.000]	[0.002]	[0.051]	[0.044]	[0.003]	[0.71]
Sharpened q-value	0.001	0.005	0.032	0.032	0.006	0.135
Control group mean	0.063	0.003	0.006	0.03	0.055	0.074
Observations	64558	64558	64558	64558	64558	64558
Chi-squared value	0.257	3.252	0.914	0.004	0.014	2.936
p-value	0.612	0.071	0.339	0.952	0.904	0.087

Notes: This table reports the effect of wife's account ownership on household's financial behavior using an augmented inverse probability weighted DiD. The first row reports aggregate treatment effect. The treatment group includes households where female spouse of household head opened a bank account in survey wave 3 (September - December 2014) and comparison group includes households where the spouse didn't own a bank account at least 1 year after implementation. The post-treatment dummy variable is assigned 1 for CPdx's surveys 3-5 (September 2014 to August 2015) and 0 for survey waves 1 and 2 (January to August 2014). The dependent variables are specified in column titles and are binary indicators of whether- household has saved in bank/ post office deposits or government bonds (column 1), savings in Self-Help group, Chit fund, microfinance institute (column 2), outstanding borrowing from a bank/ registered company (column 3), loans from friends, moneylender and other informal sources (Column 4), saved in gold/ related assets (column 5) and invested in shares, mutual funds/ real estate (column 6). The second row includes standard errors in parentheses that are clustered by household. The third row reports p values in square brackets and fourth row reports sharpened two- stage q-values that correct the p-value of the interaction coefficient for false discovery rate from testing multiple hypotheses. The last two rows are a test for joint significant of differences between treatment and comparison groups before policy reporting the chi-squared statistic and corresponding p value. The sample is restricted to households where the wife of household head didn't have a bank account in the second survey wave.The estimation controls for time varying characteristics of households and total monthly consumption expenditure. It also includes household and survey wave fixed effects. ∗ p< 0.1, ∗∗ p< .05, ∗ ∗ ∗ p< .01

Table 6: Aggregate treatment effect: Wife's account ownership and household consumption allocations

Dependent variable: per capita monthly expenditure in real terms

	Women's consumption	Cooking & sanitation	Time saving	Men's consumption	Education
Post × Treatment	1.494	-13.125**	-1.114***	-11.556***	-11.365***
	(4.055)	(5.618)	(0.175)	(2.936)	(2.093)
	[0.713]	[0.019]	[0.000]	[0.000]	[0.000]
Sharpened q-value	0.167	0.01	0.001	0.001	0.001
Control group mean	397.494	3656.113	2.687	517.588	185.821
Observations	48165	48165	48165	48165	48165
Chi-squared value	0.013	0.147	11.444	13.428	0.156
p-value	0.908	0.702	0.001	0.0002	0.692

Notes: This table reports the effect of wife's account ownership on household's financial behavior using an augmented inverse probability weighted DiD. The first row reports aggregate treatment effect. The treatment group includes households where female spouse of household head opened a bank account in survey wave 3 (September - December 2014) and comparison group includes households where the spouse didn't own a bank account at least 1 year after implementation. The post-treatment dummy variable is assigned 1 for CPdx's surveys 3-5 (September 2014 to August 2015) and 0 for survey waves 1 and 2 (January to August 2014). The dependent variables are household's per capita monthly consumption expenses in real terms and are listed as column titles. Column 1 includes household's expenditure on clothing and footwear, cosmetics, accessories, and beauty goods and services; column 2 includes items complementary to domestic chores of cooking and cleaning such as food, utensils and toiletries; column 3 includes time saving appliances (kitchen appliances) and services (domestic help). Column 4 includes expenditure on tobacco products and liquor, shaving articles and fuel for purposes other than cooking. Column 5 analyzes total expenditure on education such as fees to schools, colleges/ private tuition, books, uniforms etc. The second row includes standard errors in parentheses that are clustered by household. The third row reports p values in square brackets and fourth row reports sharpened two-stage q-values that correct the p-value of the interaction coefficient for false discovery rate from testing multiple hypotheses. The last two rows are a test for joint significant of differences between treatment and comparison groups before policy reporting the chi-squared statistic and corresponding p value. The sample is restricted to households where the wife of household head didn't have a bank account in the second survey wave.The estimation controls for time varying characteristics of households and total monthly consumption expenditure. It also includes household and survey wave fixed effects. $*$ p$<$ 0.1, $**$ p$<$ .05, $***$ p$<$ .01

Table 7: DiD: Effect of policy on expansion of account ownership between High and Low Impact districts

	(1) Percent difference in accounts since 2014
High impact × Post	9.686***
	[2.761]
Observations	3156
R^2	0.921
District FE	Yes
Time FE	Yes
LASSO controls included	Yes

Notes: The table reports the average expansion of bank accounts since 2014 between High and Low Impact district after policy. High impact includes districts at state median bank branch density and below. Low impact includes the districts above state median. The estimation includes district fixed effects and controls selected by post double (LASSO) selection method (Belloni et al., 2013). The control variables are number of primary schools and senior secondary schools in towns in 2011, and changes in - total rural population, composition of scheduled tribes, length of paved roads connecting villages and hours of electricity supply to domestic users. Standard errors are reported in brackets and clustered at district level. ∗ p< 0.1, ∗∗ p< .05, ∗ ∗ ∗ p< .01

Table 8: Parallel trends test: Effect of expansion in account ownership on women's empowerment

	Alone/ joint decision on big household purchases (1)	Money available for autonomous use (2)
High impact ×	0.003	0.005
Pre-treatment time dummy	[0.020]	[0.013]
Observations	37653	37986
R^2	0.203	0.083
Comparison group mean	.51	.86
District FE	Yes	Yes
Time FE	Yes	Yes
LASSO controls included	Yes	Yes

Notes: This table reports differences in empowerment outcomes between High and Low Impact districts in the years before policy implementation. Dependent variables are listed as column titles. The decision making variables - whether woman participates jointly or with spouse on decisions to purchase big household items, and has money available for autonomous use - are binary. High impact includes districts with bank branch density equal to the state median or less. Low impact includes the districts with branch density greater than state median. Bank branch density is calculated per 100,000 population. Only coefficients of interaction terms of High Impact districts with year dummy are reported. Districts are defined by 2001 Population Census Boundary. The sample includes districts where the account expansion policy (PMJDY) was implemented from August 2014 to August 2015. Decision making variables are extracted from nationally representative household surveys (IHDS 2005 and 2012), bank branch density is estimated using data from RBI and Population Census. All specifications include district fixed effects and controls selected from Table 2 by post double (LASSO) selection method (Belloni et al., 2013). Standard errors are clustered by district and reported in brackets. ∗ p< 0.1, ∗∗ p< .05, ∗ ∗ ∗ p< .01

Table 9: DiD: Effect of expansion in account ownership on women's empowerment

			Changes in bank infrastructure	
	Alone/ joint decision on big household purchases	Money available for autonomous use	Alone/ joint decision on big household purchases	Money available for autonomous use
	(1)	(2)	(3)	(4)
High impact ×	0.007	-0.034	0.007	-0.034
Post	[0.022]	[0.023]	[0.022]	[0.023]
Observations	40510	36735	40510	36735
R^2	0.248	0.343	0.248	0.343
Comparison group mean	0.65	0.62	0.65	0.62
District FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
LASSO controls included	Yes	Yes	Yes	Yes

Notes: This table reports differences in empowerment outcomes between High and Low Impact districts before and after policy implementation. Dependent variables are listed as column titles. The decision making variables - whether woman participates jointly or with spouse on decisions to purchase big household items, and has money available for autonomous use - are binary. High impact includes districts with bank branch density equal to the state median or less. Low impact includes the districts with branch density greater than state median. Bank branch density is calculated per 100,000 population. Post is a binary variable estimating differences before and after policy. Post is 1 for observations from DHS 2015-16 and 0 for IHDS 2011-12. Districts are defined by 2001 Population Census Boundary. The sample includes districts where the account expansion policy (PMJDY) was implemented from August 2014 to August 2015. Decision making variables are extracted from nationally representative household surveys (IHDS, DHS), bank branch density is estimated using data from RBI and Population Census. Districts not surveyed in both IHDS and DHS are excluded from analysis. All specifications include district fixed effects and controls selected from Table 2 by post double (LASSO) selection method (Belloni et al., 2013). Columns 3-4 also control for changes in bank branch density between 2014-16. Standard errors are clustered by district and reported in brackets. $*$ p$<$ 0.1, $**$ p$<$ .05, $***$ p$<$ .01

Table 10: Heterogeneous treatment effects: Trust between spouses

	Spousal relations		Acceptability of wife beating	
	Alone/ joint decision on big household purchases	Money available for autonomous use	Alone/ joint decision on big household purchases	Money available for autonomous use
	(1)	(2)	(3)	(4)
Characteristic × High Impact × Post	-0.006	0.002	-0.006	-0.014
	[0.059]	[0.060]	[0.023]	[0.022]
High impact × Post	0.028	-0.043	0.018	-0.007
	[0.183]	[0.185]	[0.058]	[0.053]
Observations	40510	36735	40510	36735
R^2	0.248	0.343	0.249	0.346
Comparison group mean	.65	.62	.65	.62
District FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
LASSO controls included	Yes	Yes	Yes	Yes

Notes: This table tests for heterogeneity in women's decision making between High and Low Impact districts in response to the policy. Dependent variables - whether woman participates jointly or with spouse on decisions to purchase big household items, and has money available for autonomous use - are binary. "Characteristic" specifies the heterogeneity variable which are district-wise ex-ante aggregates of cooperation between spouses (results in columns 1-2) and acceptability of wife beating (columns 3-4). Description of these scores is provided in Appendix Table A.5. High impact includes districts with bank branch density equal to the state median or less. Low impact includes the districts with branch density greater than state median. Bank branch density is calculated per 100,000 population. Post is a binary variable estimating differences before and after policy. Post is 1 for observations from DHS 2015-16 and 0 for IHDS 2011-12. Districts are defined by 2001 Population Census Boundary. The sample includes districts where the account expansion policy (PMJDY) was implemented from August 2014 to August 2015. Decision making variables are extracted from nationally representative household surveys (IHDS, DHS), bank branch density is estimated using data from RBI and Population Census. Districts not surveyed in both IHDS and DHS are excluded from analysis. All specifications include district fixed effects and controls selected from Table 2 by post double (LASSO) selection method (Belloni et al., 2013). Standard errors are clustered by district and reported in brackets. ∗ p< 0.1, ∗∗ p< .05, ∗ ∗ ∗ p< .01

Table 11: Heterogeneous treatment effects: Account operability

	Mobility outside home		Woman's education	
	Alone/ joint decision on big household purchases	Money available for autonomous use	Alone/ joint decision on big household purchases	Money available for autonomous use
	(1)	(2)	(3)	(4)
Characteristic ×	0.080*	-0.023	0.006	-0.020*
High Impact × Post	[0.044]	[0.049]	[0.010]	[0.011]
High impact × Post	-0.171*	0.019	-0.012	0.094
	[0.096]	[0.110]	[0.058]	[0.066]
Observations	40510	36735	40510	36735
R^2	0.249	0.345	0.248	0.344
Comparison group mean	.65	.62	.65	.62
District FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
LASSO controls	Yes	Yes	Yes	Yes

Notes: This table tests for heterogeneity in women's decision making between High and Low Impact districts in response to the policy. Dependent variables - whether woman participates jointly or with spouse on decisions to purchase big household items, and has money available for autonomous use - are binary. "Characteristic" specifies the heterogeneity variable which are district-wise ex-ante aggregates of whether the respondent can visit friends/relatives and public spaces by herself (results in columns 1-2), and her years of completed schooling (columns 3-4). Description of these scores is provided in Appendix Table A.5. High impact includes districts with bank branch density equal to the state median or less. Low impact includes the districts with branch density greater than state median. Bank branch density is calculated per 100,000 population. Post is a binary variable estimating differences before and after policy. Post is 1 for observations from DHS 2015-16 and 0 for IHDS 2011-12. Districts are defined by 2001 Population Census Boundary. The sample includes districts where the account expansion policy (PMJDY) was implemented from August 2014 to August 2015. Decision making variables are extracted from nationally representative household surveys (IHDS, DHS), bank branch density is estimated using data from RBI and Population Census. Districts not surveyed in both IHDS and DHS are excluded from analysis. All specifications include district fixed effects and controls selected from Table 2 by post double (LASSO) selection method (Belloni et al., 2013). Standard errors are clustered by district and reported in brackets. $* \text{ p} < 0.1$, $** \text{ p} < .05$, $*** \text{ p} < .01$

Table 12: Heterogeneous treatment effects: Account use

	Respondent is employed		Trust in banking		Household receives transfers	
	Alone/ joint decision on big household purchases	Money available for autonomous use	Alone/ joint decision on big household purchases	Money available for autonomous use	Alone/ joint decision on big household purchases	Money available for autonomous use
	(1)	(2)	(3)	(4)	(5)	(6)
Characteristic × High	-0.041	0.085	0.247*	-0.099	0.008	0.092
	[0.102]	[0.103]	[0.146]	[0.179]	[0.136]	[0.154]
Impact × Post						
High impact × Post	0.031	-0.080	-0.293*	0.085	0.005	-0.060
	[0.065]	[0.062]	[0.176]	[0.214]	[0.049]	[0.047]
Observations	40510	36735	40510	36735	40510	36735
R^2	0.248	0.343	0.248	0.343	0.248	0.343
Comparison group mean	.65	.62	.65	.62	.65	.62
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
LASSO controls included	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table tests for heterogeneity in women's decision making between High and Low Impact districts in response to the policy. Dependent variables - whether woman participates jointly or with spouse on decisions to purchase big household items, and has money available for autonomous use - are binary. "Characteristic" specifies the heterogeneity variable which are district-wise ex-ante aggregates of whether respondent is employed (results in columns 1-2), household's confidence and engagement with banking institutions (columns 3-4) and whether household has received a government transfer (columns 5-6). Description of these scores is provided in Appendix Table A.5. High impact includes districts with bank branch density equal to the state median or less. Low impact includes the districts with branch density greater than state median. Bank branch density is calculated per 100,000 population. Post is a binary variable estimating differences before and after policy. Post is 1 for observations from DHS 2015-16 and 0 for IHDS 2011-12. Districts are defined by 2001 Population Census Boundary. The sample includes districts where the account expansion policy (PMJDY) was implemented from August 2014 to August 2015. Decision making variables are extracted from nationally representative household surveys (IHDS, DHS), bank branch density is estimated using data from RBI and Population Census. Districts not surveyed in both IHDS and DHS are excluded from analysis. All specifications include district fixed effects and controls selected from Table 2 by post double (LASSO) selection method (Belloni et al., 2013). Standard errors are clustered by district and reported in brackets. * p< 0.1, ** p<.05, * * * p< .01

Table 13: DiD: Other empowerment outcomes

	Women's fertility	Mobility outside home	Cruelty by spouse/ his family
	(1)	(2)	(3)
High impact × Post-treatment time dummy	-0.012 [0.033]	-0.024 [0.021]	-12.392 [8.932]
Observations	29744	41319	1821
R^2	0.556	0.120	0.931
Comparison group mean	2.22	.091	190.45
District FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
LASSO controls included	Yes	Yes	

Notes: This table reports differences in empowerment outcomes between High and Low Impact districts before and after policy implementation. Dependent variables are listed as column titles - women's fertility (number of children), ability to visit friends/relatives and public spaces on her own and annual dowry-related violence cases in a district. High impact includes districts with bank branch density equal to the state median or less. Low impact includes the districts with branch density greater than state median. Bank branch density is calculated per 100,000 population. Post is a binary variable estimating differences before and after policy. Post is 1 for observations from DHS 2015-16 and 0 for IHDS 2011-12. Districts are defined by 2001 Population Census Boundary. The sample includes districts where the account expansion policy (PMJDY) was implemented from August 2014 to August 2015. Decision making variables are extracted from nationally representative household surveys (IHDS, DHS), bank branch density is estimated using data from RBI and Population Census and crimes data is extracted from the National Crime Records Bureau. Districts not surveyed in both IHDS and DHS are excluded from analysis. All specifications include district fixed effects and columns 1-5 include controls selected from Table 2 by post double (LASSO) selection method (Belloni et al., 2013). Standard errors are clustered by district and reported in brackets. $*$ p$<$ 0.1, $**$ p$<$ .05, $***$ p$<$ .01

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A Data and variables

A.1 Sampling methodology of household surveys

This section describes the sampling methodology of the three nationally representative household surveys used in the analysis.

Consumer Pyramids Household Survey (CPdx)

The CPdx stratifies 640 districts of the 2011 Population Census into 110 homogeneous regions (HRs) which groups districts with similar agro-climatic conditions, urbanization and female literacy levels as well as number of households. The North-Eastern states and Union Territories are each treated as a single HR. Each HR is further stratified based on population into a Rural stratum, a Very Large Towns stratum, a Large Towns stratum, a Medium-sized Towns stratum and a Small Towns stratum based on the number of households. The following regions were not fully surveyed: Andaman & Nicobar Islands, Arunachal Pradesh, Dadra & Nagar Haveli, Diu & Daman, Lakshadweep, Manipur, Meghalaya, Mizoram, Nagaland and Sikkim. The sampling strategy across the stratum is different: 25-30 villages were selected from each rural stratum using simple random sampling and at least 1 town from each town-size stratum (if available). Households within each village are selected using Systematic Random Sampling where every n^{th} household was selected (n ranging from 5 to 15) to survey a total of 16 households per village. For each selected town, 21 CEBs were randomly selected and 16 households were selected from each CEB using systematic random sampling. The survey, therefore, has a larger sample of urban households. There were 166,744 households (47,715 rural and 119,029 urban) in 438 districts surveyed in the first wave (January to April 2014) and 158,666 households (46,604 rural and 112,062 urban) in 425 districts in the fifth wave (May-August 2015). Every sample household within a strata is meant to represent the same number of households from the population using the survey weight. These weights are calculated using population projections by the survey implementers. This weight is generated for each round of survey.

India Human Development Survey (IHDS)

The survey was conducted in all states and union territories (except two - Andaman & Nicobar Islands and Lakshwadeep). It surveyed 384 out of 593 districts from the 2001 Census. The primary sampling units were villages and urban blocks. The number of urban blocks were selected using probability proportional to population. From each urban block, 15 households were surveyed. Half the rural sample comprised of 13,900 rural households from an older survey by the National Council of Applied Economics

Research India. In each re-surveyed district, two additional villages were identified based on probability proportional to population, and 20 households were randomly included in the sample from these villages. The 2005 round covered 26,734 rural and 14,820 urban households while the 2012 round interviewed 27,579 rural and 14,573 urban households. Both samples were selected by stratified sampling. The second round in 2011-12 re-interviewed 83% of households in the first survey round.

Demographic Health Surveys

The survey uses 2011 Census information to draw a stratified two-stage sample. The primary sampling unit (PSU) is the village in rural areas and the census enumeration block (CEB) in urban areas. Villages are selected with probability proportional to size from the sampling frame. Within each stratum (rural/urban), six substrata are created based on number of households in village and percentage share of scheduled casts and scheduled tribes in a village. The PSUs were sorted by literacy rate of women aged 6 and more, and final selection used probability proportional to size. Each selected urban and rural primary sampling unit was divided into segments of 100-150 households each and from each randomly selected segment, 22 households were randomly selected with systematic sampling.

A.2   Constructing district panel by 2001 Census boundaries

The DHS and RBI's administrative data is published using 2011 Population Census boundaries while both rounds of the IHDS are defined by the 2001 Census. Therefore, all districts in the DHS and RBI data were matched to their parent district in 2001. Districts which were formed from splitting of more than one parent district were excluded from the analysis to avoid misclassifications in the absence of population information at the time of split.

A.3   Summary statistics of sample

Table A.1: Descriptive statistics of household panel

	Wave 1 (Jan-Apr'14)		Wave 2 (May-Aug'14)		Wave 3 (Sep-Dec'14)		Wave 4 (Jan-Apr'15)		Wave 5 (May-Aug'15)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Male head owns bank account (%)	95.08	21.63	100	0	100	0	100	0	99.99784	0.47
Wife of household head owns... (%)										
Bank account	0	0	0	0	23.54	42.43	23.55	42.43	24.22	42.84
Credit card	0.01	0.8	0.01	1.	0.43	6.57	0.15	3.88	0.11	3.37
Own mobile phone	12.33	32.88	13.57	34.25	22.72	41.91	24.45	42.98	28.47	45.13
Number of women in the household with...										
Bank account	0.04	0.23	0.05	0.25	0.31	0.57	0.33	0.59	0.37	0.64
Credit card	0.	0.01	0.	0.01	0.01	0.08	0.	0.05	0.	0.05
Own mobile phone	0.19	0.45	0.2	0.47	0.31	0.55	0.34	0.57	0.4	0.62
Number of men in the household with...										
Bank account	1.2	0.59	1.27	0.56	1.3	0.59	1.32	0.61	1.37	0.65
Credit card	0.01	0.09	0.01	0.09	0.03	0.2	0.02	0.14	0.02	0.16
Own mobile phone	1.21	0.65	1.27	0.63	1.31	0.63	1.33	0.64	1.36	0.66
Household demographics										
Household size	4.27	1.33	4.27	1.33	4.27	1.34	4.27	1.34	4.26	1.35
Number Adults	2.64	0.97	2.67	1.	2.71	1.03	2.75	1.05	2.8	1.08
Adult sex ratio	0.97	0.38	0.97	0.4	0.97	0.41	0.97	0.42	0.98	0.44
Real per-capita monthly total expenditure (INR)	1631.45	959.58	1663.37	887.69	1703.81	845.69	1741.13	827.85	1825.06	900.04

	Wave 1 (Jan-Apr'14)		Wave 2 (May-Aug'14)		Wave 3 (Sep-Dec'14)		Wave 4 (Jan-Apr'15)		Wave 5 (May-Aug'15)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Urban (%)	94.31	23.17	94.19	23.39	94.17	23.43	94.09	23.58	94.02	23.71
Hindu (%)	82.58	37.93	82.47	38.03	82.49	38.	82.52	37.98	82.68	37.85
Muslim (%)	13.41	34.08	13.5	34.17	13.49	34.17	13.47	34.15	13.1	33.74
Christian (%)	0.74	8.56	0.66	8.09	0.66	8.07	0.66	8.1	0.78	8.8
Jain (%)	0.1	3.16	0.1	3.23	0.1	3.23	0.1	3.16	0.1	3.2
Buddhist (%)	0.32	5.67	0.33	5.7	0.31	5.57	0.32	5.69	0.31	5.57
Scheduled Caste (%)	23.64	42.49	23.83	42.61	23.82	42.6	23.83	42.61	23.97	42.69
Scheduled Tribe (%)	2.97	16.99	2.94	16.88	2.94	16.89	2.94	16.9	3.06	17.23
Other Backward Caste (%)	42.74	49.47	42.58	49.45	42.57	49.45	42.6	49.45	42.35	49.41
Intermediate Caste (%)	5.02	21.83	4.87	21.53	4.89	21.57	4.87	21.52	5.21	22.23
Upper Caste (%)	25.63	43.66	25.79	43.75	25.77	43.74	25.76	43.73	25.4	43.53
Male head: Age	44.01	11.67	44.31	11.63	44.63	11.61	44.92	11.63	45.4	11.62
Male head: Education	7.26	5.31	7.27	5.33	7.28	5.33	7.28	5.32	7.3	5.3
Wife: Age	38.93	10.95	39.23	10.94	39.56	10.9	39.86	10.91	40.31	10.91
Wife: Education	4.78	4.94	4.79	4.96	4.81	4.97	4.83	4.97	4.87	4.96
N					13148					

Notes: The table describes household characteristics of the sample using household weight provided by the survey to reports statistics for five survey waves. Each wave includes four consecutive months.

Table A.2: Descriptive statistics of district panel

	Before policy				After policy	
	Panel A: Individual and household covariates					
	IHDS 2005		IHDS 2011-12		DHS 2015-16	
	Mean	SD	Mean	SD	Mean	SD
Respondent has bank account	.16	.37	.36	.48	.53	.5
Household has bank account	.35	.48	.68	.47	.92	.28
Household size	5.66	2.49	5.51	2.43	5.45	2.57
Number Adults	3.04	2.46	3.05	2.5	3.51	1.74
Adult sex ratio	1.11	.54	1.16	.6	1.13	.58
Female headed household	.05	.22	.09	.29	.09	.29
Household in urban area	.32	.47	.31	.46	.3	.46
Household head: Hindu	.83	.38	.83	.38	.81	.39
Household head: Muslim	.12	.33	.13	.33	.14	.35
Household head: Christian	.02	.14	.02	.12	.02	.14
Household head: Sikh	.01	.12	.01	.11	.02	.13
Household head: Jain	.	.05	.	.04	.	.04
Household head: Buddhist	.01	.08	.01	.09	.01	.1
Head: Scheduled Caste	.23	.42	.23	.42	.22	.41
Head: Scheduled Tribe	.06	.25	.07	.25	.08	.28
Head: Other Backward Caste	.05	.22	.43	.5	.45	.5
Head: Education	5.35	4.77	5.63	4.82	6.21	5.08
Head: Age	32.64	8.05	47.16	12.6	46.96	12.99
Respondent: Education	4.08	4.59	5.15	4.87	6.18	5.16
Respondent: Age	33.33	7.91	33.9	8.36	32.95	8.51
Respondent is employed	.55	.5	.56	.5	.31	.46
Respondent: employed in agriculture	.45	.5	.37	.48	.16	.37
Respondent: employed non-agriculture sector	.08	.27	.17	.38	.14	.34

	Panel B: Population Census			
	2001		2011	
	Mean	SD	Mean	SD
Rural (%)	74.6	16.4	70.76	18.72
Scheduled Caste/ Tribe (%)	24.57	12.09	25.81	12.65
Literate (%)	56.36	11.3	64.64	9.81
Electricity (hours)	.79	.33	.72	.3
Number of primary schools	1653.77	893.85	2065.74	1212.89
Number of middle schools	804.6	482.53	1425.1	909.26
Number of high schools	88.87	60.04	212.96	157.96
Number of colleges	28.05	26.	71.12	59.42

	Panel C: District-level banking			
	Mean	SD	Mean	SD
Total branches	725.54	620.42	1,099.98	892.41
Total accounts	1,517,502.72	1,564,091.81	3,156,879.08	2,569,767.17
Number districts		328		

Notes: Variables in panel A are population weighted aggregates from nationally representative household surveys, IHDS and DHS. The districts are defined by 2001 Population Census boundaries. Variables in panel C are district level aggregates generated using RBI's administrative census data. "Before Policy" includes mean estimates of the banking data from April 2006 through March 2014. "After Policy" includes April 2014 through March 2017.

A.4 Variable definition

Table A.3: Description of raw indicators: household resource allocation

Category	Variable	Description
Women's private consumption	Clothing and Footwear	Garments, Footwear and accessories such as accessories such like socks, tie, scarves, handkerchiefs, fabric and tailoring
	Accessories	Artificial jewelry, bags, wallets, watches, goggles, glasses and gems and jewelry
	Cosmetics	Includes 'dental care products', 'bathing soap', 'face wash', 'shaving articles', 'hair oil', 'shampoo and hair conditioner', 'powder', 'creams', 'deodorants and perfumes', 'henna, hair color, hair gel, etc.', 'lipstick and other cosmetics'
	Beauty products and services	Beauty enhancement services like beauty parlors, hair stylists, barber services, salons and spas, masseur services, etc.
Domestic chores	Food	Includes cereals & pulses, edible oils, spices, vegetables & fruits, meat, fish & eggs, milk & milk products, ready-to-eat food, spices, bread, biscuits, namkeens & salty snacks, noodles & pasta, flakes, muesli & oats, confectionery & ice-creams, health supplements, tea, coffee, sweeteners, and beverages, juices & bottled water
	Utensils	Cookware including cups, saucers, plates, spoons, containers, frying pans etc. and kitchen accessories including kitchen knives, cutting plates, sieves (chalni), can openers, coffee filters, etc.
	Toiletries	Includes detergent bar,powder,liquids, scourer and housecleaning agents, and other housecare products
Substitutes for women's time in domestic chores	Time saving appliances and services	Gadgets such as toasters, water filters, microwave oven, refrigerator, cooking range, stove, mixer/grinder, juicer, coffee machine, grill, induction, chimney, exhaust system and any other appliances that are used in kitchens to improve the efficiency of cooking
		Salary paid to maid servants, cooks, drivers, guards, gardeners, baby sitters and other staff, and laundry services

Men's preferences	Shaving articles	Shaving brush, razors, blades, shaving foams, shaving gels, shaving lather sticks, after shave lotions and shaving creams
	Intoxicant	Cigarettes, 'bidis', other tobacco products and liquor
	Fuel other than cooking	Petrol and diesel or any other petroleum fuel product for its own consumption
Education	School and college fees	Admission and exam fees, uniform, lab and library fees, extra classes, use of sport facilities etc.
	Private coaching	Private tutors or classes
	Stationery	Notebooks, writing pads, paper, pens and pencils, markers, erasers, rulers, compass set, pins, staplers, post-it and related articles
Savings	Formal sources	- Bank fixed deposits - Schemes offered by India Post (eg. Post Office Savings Account, Post Office Time Deposit Account, Senior Citizen Savings Scheme etc.) - Government bonds and Public Provident Funds - Kisan Vikas Patra - Employee Provident Fund
	Microfinance	- Self-Help Groups - Chit funds - Microfinance Institution
Borrowing	Household has outstanding debt in formal sources	- Banks - Employer - Registered companies engaged in the business of loans and advances, insurance business or chit business - Microfinance Institution - Credit card
	Informal sources	- Moneylender - Relatives or friends - Shops - Other sources such as non-professional money-lender, religious institutions and missionaries etc.
Investment	Household has outstanding investment	- Mutual funds - Listed shares - Private business enterprise including equity capital of an unlisted company, limited liability partnership or a contribution to a partnership or a proprietorship concern - Real investment including house, plot of land, apartment, bungalow, office space, shop or farmhouse
	Gold	- Gold assets or funds including gold bars, ornaments, jewelry and Gold Exchange Traded Funds

The variables used to measure women's decision making are - self-reported participation in household's big purchase decisions, autonomous use of money and violence from spouse or his relatives. These variables are extracted from IHDS and DHS. Table A.4 lists the survey questions used to create the indicators. The first indicator, women's self reported participation in household's decisions on purchase of big/ expensive items is constructed as binary indicator which assigns the value 1 when women respond if they make the decision independently or jointly with their spouse and 0 if the spouse and/or other members of the household make this decision. The indicator constructed for analysis is essentially a measure of joint decision making because the DHS asks respondents if she or other members "usually" make this decision, failing to capture whether the woman makes this decision independently always. The second indicator asks respondents if they have access to any money that they can autonomously decide how to spend. The variables in IHDS and DHS allow for a lower bound estimate of women's autonomous use of money as they differ in the source of money and type of expenditure they capture. The DHS asks if the money available to the woman is her own while the responses captured in IHDS could potentially include cash from another member's earnings. The IHDS specifically asks about household expenditures while the DHS does not limit the use of money by type of expenditure. The binary indicator constructed from these two variables is assigned 1 when they respond yes to a question and 0 if they respond no. Both indicators generate estimates for married women between the ages 15 and 49.

Table A.4: Description of raw indicators: women's self-reported participation in decision-making

	Participation in purchase decisions (1)	Autonomous use of money (2)
IHDS (2005, 2012)	Who in your family decides the following: Whether to buy an expensive item such as a TV or fridge?	Do you yourself have any cash in hand to spend on household expenditures?
DHS (2015-16)	Who usually makes decisions about making major household purchases: mainly you, mainly your husband, you and your husband jointly, or someone else?	Do you have any money of your own that you alone can decide how to use?

The following variables measured using the IHDS 2012 round are included in the analysis of mechanisms through which account ownership can affect women's empowerment. Each categorical variable is a count of its constituent variables.

Table A.5: Description of mechanisms

| Indicator	Type	Description
Spousal relations	Count	1. Respondent and spouse discuss things that happen at work/farm 2. Respondent and spouse discuss what to spend money on 3. Respondent and spouse discuss things about the community such as elections or politics
Wife beating	Count	1. Is it usual for husband to beat wife if she goes out without telling him? 2. Is it usual for husband to beat wife if her natal family does not give gifts (money/ jewellery)? 3. Is it usual for husband to beat wife if she neglects house or child? 4. Is it usual for husband to beat wife if she doesn't cook food properly? 5. Is it usual for husband to beat wife if he suspects her of having relations with other men?
Mobility	Count	1. Health centre 2. Friends and relatives 3. Local convenience store
Education	Continuous	Years of completed schooling
Employment	Binary	Whether respondent is employed
TrustBanks	Count	1. Whether household took loan from bank in last 5 years 2. Whether household has confidence in bank to keep money safe
Transfers	Binary	Whether household received government transfers

B   Appendix Figures
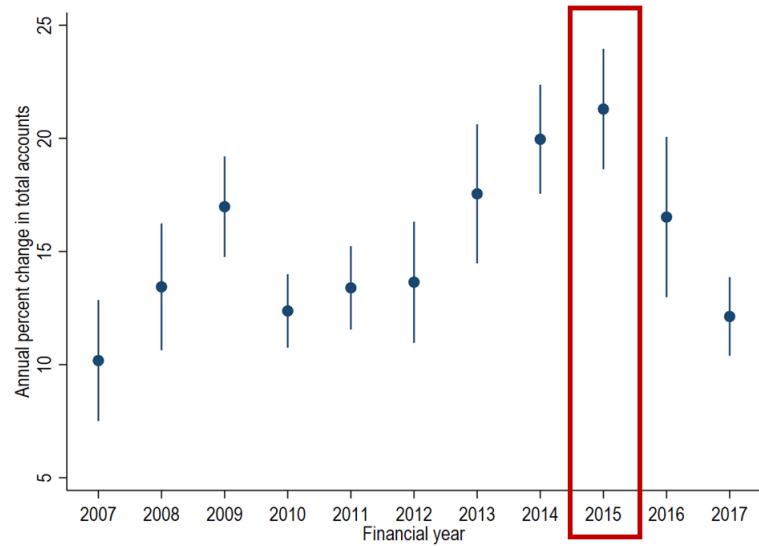
Figure B.1: Percent annual increases in account ownership

Notes: This figure shows that the annual percentage increase in bank accounts for a given district was largest after PMJDY policy. The blue dots depict the average percentage change in total bank accounts for a district by financial year and the vertical lines represent 95% confidence intervals. The financial year 2015 starts April 1, 2014 and ends March 31, 2015. Source: Reserve Bank of India. Author's calculations.
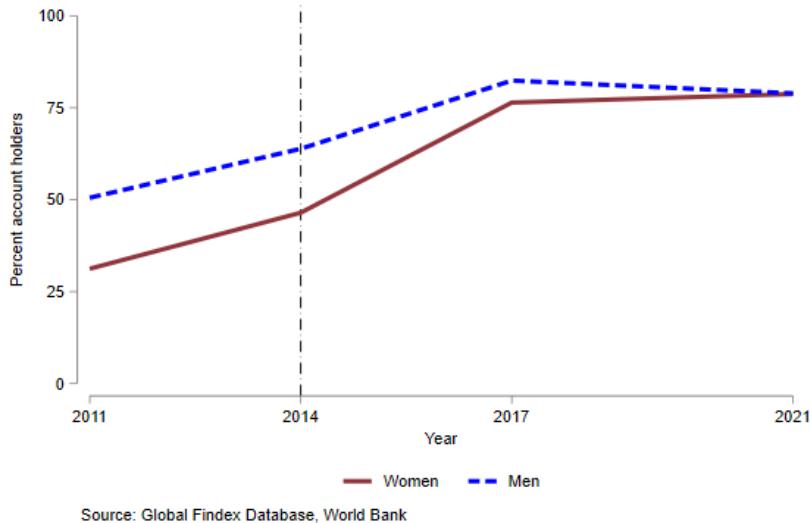

Figure B.2: Trends in bank account ownership by sex

Notes: This figure reports the percentage share of bank accounts by sex over time. The vertical dash line signifies year PMJDY was implemented. The gender gap in account ownership started decreasing after 2011, and further reduced after the 2014 policy. Source: World Bank Findex Data for India. Author's calculations.

C Appendix Tables

Table C.1: Differences in miscellaneous consumption categories between treatment and comparison groups by survey-wave

Dependent variable: per capita monthly expenditure in real terms

	Appliances	Restaur-ants	Entertai-nment	Rent & Utilities	Transport	Communic-ation	Health
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Jan-Apr14	-0.906**	-0.608	0.138	-0.046	6.243***	1.967**	1.208
	[0.383]	[1.148]	[0.206]	[0.369]	[1.233]	[0.911]	[0.801]
Sep-Dec14	-1.710***	-2.024*	0.217	1.397***	-9.944***	-0.619	1.881**
	[0.375]	[1.215]	[0.206]	[0.390]	[1.232]	[0.915]	[0.799]
Jan-Apr15	-1.914***	-2.680**	0.033	1.733***	-13.734***	-3.875***	1.329
	[0.382]	[1.246]	[0.182]	[0.394]	[1.259]	[0.916]	[0.830]
May-Aug15	-2.392***	2.336*	0.695***	1.944***	-14.706***	-3.879***	2.914***
	[0.394]	[1.270]	[0.202]	[0.403]	[1.262]	[0.983]	[0.827]
Observations	48165	48165	48165	48165	48165	48165	48165

Notes: The table reports estimated differences in per capita monthly consumption allocations between the treatment and comparison groups by survey wave from the augmented inverse-probability weighted DiD. The first row provides evidence of parallel trends before policy. The second survey wave, May through August is the reference group. The dependent variables are household's per capital monthly expenses in real terms and specified in column titles. Column 1 includes kitchen, household and mobile appliances; column 2 includes expenditure on food and drinks in restaurants, canteens and food stalls; column 3 includes tickets for movies, theatre, music concerts, sport events and other amusement activities; column 4 includes house rent and utilities; column 5 consists of modes of transport; column 6 includes phones, TV, internet and other media. Column 7 includes expenditure on medicines, doctor's/physiotherapists and hospitalization fees, medical tests and health insurance. The sample is restricted to households where the wife of household head didn't have a bank account in the second survey wave. The treatment group includes households where female spouse of household head opened a bank account in survey wave 3 (September - December 2014) and comparison group includes households where the spouse didn't own a bank account at least 1 year after implementation (waves 1-5). The outcome and treatment models include covariates listed in Table 1. The estimation includes household fixed effects. Standard errors are clustered by household and reported in brackets. $*$ p$<$ 0.1, $**$ p$<$ .05, $***$ p$<$ .01

Table C.2: Aggregate treatment effect: Wife's account ownership and miscellaneous consumption

Dependent variable: per capita monthly expenditure in real terms

	Appliances	Restaur- ants	Entertai- nment	Rent & Utilities	Transport	Communi- cation	Health
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Post × Treatment	-2.005***	-0.79	0.315**	1.691***	- 12.794***	-2.791***	2.041***
	(0.325)	(1.034)	(0.156)	(0.331)	(1.072)	(0.783)	(0.693)
	[0]	[0.445]	[0.043]	[0]	[0]	[0]	[0.003]
Sharpened q-value	0.001	0.068	0.015	0.001	0.001	0.001	0.002
Control group mean	1.787	32.88	0.987	3.58	35.427	64.562	18.97
Observations	48165	48165	48165	48165	48165	48165	48165
Chi-squared value	5.584	0.281	0.445	0.016	25.632	4.656	2.278
p-value	0.018	0.596	0.505	0.901	0	0.031	0.131

Notes: This table reports the effect of wife's account ownership on miscellaneous consumption using an augmented inverse probability weighted DiD. The first row reports aggregate treatment effect. The treatment group includes households where female spouse of household head opened a bank account in survey wave 3 (September - December 2014) and comparison group includes households where the spouse didn't own a bank account at least 1 year after implementation. The post-treatment dummy variable is assigned 1 for CPdx's surveys 3-5 (September 2014 to August 2015) and 0 for survey waves 1 and 2 (January to August 2014). The dependent variables are household's per capital monthly expenses in real terms and specified in column titles. Column 1 includes kitchen, household and mobile appliances; column 2 includes expenditure on food and drinks in restaurants, canteens and food stalls; column 3 includes tickets for movies, theatre, music concerts, sport events and other amusement activities; column 4 includes house rent and utilities; column 5 consists of modes of transport; column 6 includes phones, TV, internet and other media. Column 7 includes expenditure on medicines, doctor's/physiotherapists and hospitalization fees, medical tests and health insurance. The second row reports standard errors in parentheses that are clustered at the household level. The third row reports p values in square brackets and fourth row reports sharpened two- stage q-values that correct the p-value of the interaction coefficient for the false discovery rate from testing multiple hypotheses. The last two rows are a test for joint significant of differences between treatment and comparison groups before policy. They report the chi-squared statistic and corresponding p value. The sample is restricted to households where the wife of household head didn't have a bank account in the second survey wave.The estimation controls for time varying characteristics of households and total monthly consumption expenditure. It also includes household and survey wave fixed effects. $* p< 0.1, ** p< .05, *** p< .01$

Table C.3: DiD: Varying definition of High/Low Impact districts

| | Discrete classification | | Continuous |
| | Government owned | Private owned | Branch density |
	(1)	(2)	(3)
Panel A: Percent difference in accounts since 2014			
High impact × Post	3.629	8.606***	-1.610***
	[2.464]	[2.418]	[0.223]
Observations	3608	3608	3608
R^2	0.915	0.917	0.928
Comparison group mean	-18.34	-18.16	
District FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
LASSO controls included	Yes	Yes	Yes
Panel B: Alone/ joint decision on big household purchases			
High impact × Post	0.013	-0.035*	0.004***
	[0.018]	[0.018]	[0.001]
Observations	76768	76768	76768
Comparison group mean	.66	.65	
District FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
LASSO controls included	Yes	Yes	Yes
Panel C: Money available for autonomous use			
High impact × Post	-0.012	-0.028	0.006***
	[0.018]	[0.018]	[0.002]
Observations	76916	76916	37626
Comparison group mean	.61	.61	
District FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
LASSO controls included	Yes	Yes	Yes

Notes: This table reports aggregate differences between High and Low Impact districts using Eq. 4 for varying definitions of High/Low Impact. Panel A tests the effects on growth in bank accounts since 2014 and panels B and C on women's participation in decision making. Columns 1 and 2 define High/Low Impact as less/greater than median branch density of government and private owned banks, respectively. Column 3 tests effects of continuous variable of branch density. Post is a time dummy estimating differences before and after policy. All estimations include district and time fixed effects and controls selected by post double (LASSO) selection method (Belloni et al., 2013). There are only two time periods in Panels B and C. Standard errors are clustered by district and reported in brackets. $*$ p< 0.1, $**$ p< .05, $***$ p< .01

Table C.4: Pre-trends: Other empowerment outcomes

	Women's fertility	Mobility outside home
	(1)	(2)
High impact ×	0.037	0.011
Pre-treatment time dummy	[0.027]	[0.024]
Observations	33707	39497
R^2	0.578	0.065
Comparison group mean	2.43	.16
District FE	Yes	Yes
Time FE	Yes	Yes
LASSO controls included	Yes	Yes

Notes: This table reports differences in empowerment outcomes between High and Low Impact districts before policy implementation. Dependent variables are listed as column titles - number of children and ability to visit friends/relatives and public spaces on her own. High impact includes districts with bank branch density equal to the state median or less. Low impact includes the districts with branch density greater than state median. Bank branch density is calculated per 100,000 population. Only coefficients of interaction terms of High Impact districts with year dummy are reported. Districts are defined by 2001 Population Census Boundary. The sample includes districts where the account expansion policy (PMJDY) was implemented from August 2014 to August 2015. Outcome variables are extracted from nationally representative household surveys (IHDS 2005 and 2012), bank branch density is estimated using data from RBI and Population Census. All specifications include district fixed effects and controls selected from Table 2 by post double (LASSO) selection method (Belloni et al., 2013). Standard errors are clustered by district and reported in brackets. $*$ p$<$ 0.1, $**$ p$<$ .05, $***$ p$<$ .01

Table C.5: Pre-trends: Crime against women

	Cruelty by spouse/ his family
	(1)
High impact × (Year=2012)	-5.957
	[12.635]
High impact × (Year=2013)	-16.608
	[14.651]
Observations	923
R^2	0.953
Comparison group mean	190.43
District FE	Yes
Time FE	Yes
LASSO controls included	Yes

Notes: This table reports differences in dowry-related violence against women between High and Low Impact districts in the years before policy implementation. The dependent variable is a continuous variable of the annual cases reported in a district. High impact includes districts with bank branch density equal to the state median or less. Low impact includes the districts with branch density greater than state median. Bank branch density is calculated per 100,000 population. Only coefficients of interaction terms of High Impact districts with year dummy are reported. Districts are defined by 2001 Population Census Boundary. The sample includes districts where the account expansion policy (PMJDY) was implemented from August 2014 to August 2015. Outcome variables is extracted from National Crime Records Bureau, bank branch density is estimated using data from RBI and Population Census. All specifications include district fixed effects and controls selected from Table 2 by post double (LASSO) selection method (Belloni et al., 2013). Standard errors are clustered by district and reported in brackets. $*$ p< 0.1, $**$ p< .05, $***$ p< .01

Supplemental Appendix

Link to Appendix.

Disclosure statement

The author declares that she has no relevant or material financial interests that relate to the research described in this paper.