

Role of Education in Financial Inclusion of Poor and Unbanked Women in India

Amra Sabic-El-Rayess¹

¹Teachers College, Columbia University, USA

DOI: 10.23917/ijolae.v1i2.8703

Received: July 7th, 2019. Revised: September 1th, 2019. Accepted: September 9th, 2019

Available Online: September 30th, 2019. Published Regularly: July 1st, 2019

Abstract

In recent times, the global financial system has embraced more people from more regions of the world, but we are yet to fully understand who remains excluded and why. Globally, 2 billion adults are still unbanked. Of those, many are poor women. Even when they gain financial access, women tend to refrain from actively using their bank accounts. India represents a potent example of this global challenge. Our study offers a quantitative analysis of the Financial Insights Inclusion and Findex datasets and finds that even when they are given the opportunity and potential benefits of financial access - many of India's poor women opt out of actively engaging with the formal banking institutions. In examining reasons behind their account dormancy, we find that education is a significant determinant shaping decisions of India's poor women.

Keywords: role of education, financial inclusion, women's education, education impacts, primary education

Corresponding Author:

Amra Sabic-El-Rayess, Teachers College, Columbia University, USA

Email: as2169@columbia.edu

1. Introduction

Technological innovation has led to a rapid growth in financial engagement across the globe. Mobile money has enabled financial transactions at a simple press of a button, expanding financial access to the poorest and most remote parts of the world. From 2011 to 2014 alone, 700 million individuals became banked by opening their first-time accounts with financial institutions (World Bank, 2015). Only 2 percent of the global adult population has mobile money accounts, but, surprisingly, that measure jumps to 12 percent in the Sub-Saharan Africa, with nearly half of those individuals being banked exclusively via mobile money (World Bank, 2015). In Kenya, M-Pesa, a preferred mobile money platform, has grown in subscribers

from 1 million in 2007 to nearly 30 million by 2017 (Monks, 2017). If solely evaluated by the rise in new accounts, we are arguably witnessing a global expansion in financial access. But, are we?

In recent times, the global financial system has embraced more people from more regions of the world, but we are yet to fully understand who remains excluded and why. Globally, 2 billion adults are still unbanked (World Bank, 2015). Of those, many are poor women. Even when they ultimately gain access to a financial account, women tend to refrain from actively using their financial accounts. Notwithstanding mobile money platform's success in Sub-Saharan Africa, other countries have not been able to

replicate Kenya's success even in part. India represents a potent counter example to Kenya's success story. We derive this study from an extensive quantitative analysis of the Financial Insights Inclusion (FII) and Findex datasets, which has confirmed that the mobile money inclusion of women is negligible in India: mobile money account ownership amongst poor women is nearly non-existent; most women do not have enough to save via mobile money; or they express concerns with their lack of knowledge of how to open or use mobile money accounts. Further, our FII analysis shows that only 14% of low income women own mobile phones and no poor woman use mobile money accounts for emergencies.

Why even when they are given the opportunity and potential benefits of financial access many of India's poor either entirely opt out of actively engaging with the formal banking institutions or, if they opt in, they keep their accounts dormant, in some cases, all the while using informal financial networks for their financial needs. To address this complex question, our analysis builds a broader financial profile of India's poor women. Within that profile, we determine the key factors impacting the account dormancy and disengagement problem, most notably finding that education is one of the most significant and powerful determinants shaping decisions and behaviors of India's poor women. We ultimately hope that this study - particularly our finding that education plays a key role in women's financial behavior - will initiate a broader discussion on ways to better include and engage the poor, unbanked, and under-banked women in India and beyond.

Financial exclusion is a relatively recently studied phenomenon that the concerned scholars and practitioners have defined as the exclusion of certain groups from

having access to financial services (Leyshon and Thrift, 1995). India, under its current Prime Minister, Narendra Modi, has particularly pushed towards greater financial inclusion through a government-led program that added 260 million of the new bank accounts over a period of only two years, followed by a 2016 demonetization of bank notes that increased bank deposits over night (Datwani, 2017). Despite the improved bank use in India, the poor and particularly women in India still experience high levels of exclusion. Realizing that the gender gap in terms of economic opportunities and financial access remains profound in developing countries like India, World Bank has revamped its 2016-2023 gender strategy, underlining the importance of gender equality and equal economic opportunities for poverty eradication (World Bank, 2016). World Bank has committed to improving financial access and lessening gender participation gap within the banking sector in 25 countries that capture over two-thirds of the financially excluded population globally (World Bank, 2016). However, much of the financial industry is still lagging in producing a substantive impact on the poorest women in India.

A meaningful material change in lives of the poor women is not the only change that results from financial inclusion: women often benefit from cognitive, behavioral, relational and other changes that their financial independence and security provide (Kabeer, 2003). Without material change, however, women cannot be fully empowered nor can they engage actively with their banking institutions. We extend Kabeer's argument by demonstrating that a meaningful material change is often a necessary prerequisite for other benefits to occur, including improvements in women's education, skills, their self-esteem, and their community and institutional relationships.

While development community has made substantive efforts to accomplish gender mainstreaming within institutions internationally, mainstreaming of women's perspectives and needs has not necessarily occurred in India. Despite some improvements, one of four financially excluded women in the world today is Indian (Agrawal, 2016). Mahajan, India's microlending pioneer, notes that India's challenge is in its institutionally embedded exclusion of women that cannot be easily overcome (Biswas, 2013). This differential is particularly visible in our lack of understanding how, why and when the poor women decide to interact with the formal financial institutions. Existing research has suggested that hiring female bank agents, providing saving accounts, providing digital services, consumer protection of poor women, and expansion of financial literacy would all likely improve female financial inclusion (World Bank, 2016). The IFC-initiated Global Banking Alliance for Women is an umbrella effort that includes 46 financial institutions and organizations aimed at reducing gender gap in financial access by providing credit, education, markets and mentorship to women entrepreneurs (Global Alliance for Women, 2017; Ismail & Buang, 2019; Rasid & Buang, 2019). In India specifically, the government has introduced unique identification number with the goal of easing the financial access for the country's population of 1.2 billion; by 2014, nearly 60 million accounts were directly linked to the official identification numbers allowing delivery of many subsidies via formal financial system (Chen, 2014).

The needs of poor women are neither well understood nor fully addressed in India, which was the key motivation behind this study and the broader research from which the study is derived. The current state of India's poor women suggests that a more thor-

ough profile and understanding of their needs is necessary to devise effective policies and lessen account dormancy amongst India's poor. Karmaker, Benerjee, and Mohapatra (2011) rightly argue that inclusion of the poor into the formal financial system is necessary for India to grow, develop, and exponentially benefit from its financial inclusion of the poor. However, many of the ongoing financial inclusion efforts are yet to solve the continued account dormancy observed amongst the poor women because, despite improvements in the last several years, 62% of India's women either do not have a bank account or simply do not use it (Agrawal, 2016). In an effort to address this challenge, we analyze existing datasets on India to better understand poor women's rationale for self-exclusion and dormancy in the financial sector.

2. Method

For this study, we worked to understand behavioral patterns of poor women and their use of financial services in India, as well as barriers those women face in actively engaging with financial institutions. We analyzed secondary data sources and conducted demand side data analysis across various demographic, educational, financial, socioeconomic, and behavioral variables. The two financial inclusion datasets on India we used were Global Findex Dataset for 2014, with its sample of 3,000 male and female respondents aged 15+, and the Financial Insights Inclusion Dataset with a sample of 45,036 male and female respondents aged 15+. Our regression analyses systematically probed the extensive data ultimately uncovering novel insights into the financial needs and behaviors of women in India.

When possible, we validated trends and findings across both datasets though

variations are expected given differentials in sampling, variables, missing data, data collection methods, and timing of data collections. We took descriptive data a step further with binary logistic regression modeling to predict financial behaviors and account usage. Some of the key factors we studied in relation to poor women's financial behaviors included their education, ownership of bank accounts, welfare payments, employment, healthcare costs, and other related variables. In the broader study, our thorough approach helped create the in-depth profiles of different sub-groups of women in India though this paper specifically zooms in on our findings relevant to the poor women in India and the impact education has had on their financial behaviors. In the forthcoming sections, we synthesized those findings from both datasets to articulated a manner in which education impacts poor women in India.

a. Data Sources

The analysis of the 2014 India dataset from the Global Findex Database was based on a sample of 3,000 male and female respondents aged 15+. About 62% of the sample had primary education or less. Of the total, more than 44% participants did not have an account with a financial institution and a meager 2.4% have used mobile money in the past. When asked on primary reasons for not having an account (i.e. distance, expense, lacking trust, religion, lacking money, another family member has account, not able to obtain account, or account not needed), the leading rationale amongst the 2014 Findex survey participants for not having a formal account were, first, lack of money and, second, having a family member who already has an account. Findex data showed that women were overrepresented in the low income category while men were more frequently higher income earners. Our analysis

systematically probed these, and numerous other, trends and relationships within the 2014 Findex Dataset to better profile and predict financial behaviors of poor women in India.

The analysis of the 2015 India FII Dataset was based on a sample of 45,036 male and female respondents aged 15+. About 66% of the sample was at the basic level of literacy. Of the total, 33% of the participants were from the rural areas of the country while 67% resided in urban locations. As for the socioeconomic split, 78% were below the \$US 2.50 a day with 22% being above the poverty line. Of all the poor, there were more poor women than men both amongst the singles and married couples. Awareness of mobile money was low both amongst women and men, but comparatively lower amongst women. It was further coupled by low digital literacy rate despite higher financial literacy rate. Our unpacking of various trends across poor women in India helped inform and expose the relationship between the key education-related variables and women's financial inclusion and empowerment.

While significant challenges remain, FII data also suggested that improvements have been made in providing financial access to poor women in India. The number of bank users amongst poor women has increased from 2014 to 2015. In fact, across all income groups for 2015, the number of full service bank female users was greater than the number of nonusers. The 2014 dataset did not mirror the same patterns; instead, in 2014, the number of poor women who were bank users was lower than the number of bank nonusers.

b. Binary Logistic Regression

The study examined the Findex and Financial Inclusion Insights databases to understand behavioral patterns of poor women and their use of financial services in India.

Data was analyzed using extensive binary logistic regressions to ultimately understand whether there are any factors that can reliably impact or predict behaviors of poor women in India. The logistic regression's coefficients were converted into the odds ratios for the ease of interpretation. Binary logistic regression was a suitable choice given that it makes no assumptions about predictors' distributions. This method also enabled the use of binary variables as dependents. The method's assumption of a linear relationship between the logit of the dependent variable and the predictor variable was tested using Box Tidwell Test for each model throughout the broader study.

If the logistic regression model contains variables with the linearity assumption being violated between the predictors and the logit of the dependent, the predictor can be reformulated by creating categories for a continuous variable. The newly recoded variable can then be used within the logistic regression model. The study applied this standard approach to non-linearity issues, if any emerged. In addition, this study tested each model for multicollinearity by calculating the relevant Variance Inflation Factors (VIF). VIFs determine whether the multicollinearity inflated the variance of relevant coefficients. VIF of 10 or greater indicates presence of multicollinearity, an issue that this analysis did not encounter in any of the models presented in this paper. In sum, relevant coding, recording, and assumption testing was conducted for each of the regression models discussed.

3. Result and Discussion

a. Finding Answers to how to Financially Engage Poor Women of India

India's women are not alone in lagging behind men in labor force participation, ownership of small business, and access to

credit, but this study zeros in on their specific condition and financial access. The following section of the report synthesizes study's key findings and articulates a financial inclusion story, as impacted by education, of the low income women in India. The trends and factors that we discuss in the following sections can help inform targeted products, policies, and services for the poor and unbanked. We bring to light those factors that our research has found to be producing a meaningful change and effect on financial behavior of India's poor women.

We also find that the material change is the likely instigator of other progress for women, therefore, we recognize the sequential impact income, social benefit payments, or other forms of financial change can have on the financial profile and behavior of poor women in India. Together, these factors shape women's behaviors and build an informative profile. It helps us understand what currently blocks and would, with the right set of interventions, likely facilitate a more active banking relationship between the poorest women in India and the banking sector.

b. Financial Landscape of Poor Women in India: Lack of Knowledge and Comfort

Despite improved financial access for women in India in recent years, the poor women continue to be unbanked in greater numbers than women with higher income (Figure 1). More poor women try to earn wages as compared to the wealthy, but their jobs are often part-time or seasonal (Figure 1). Poor women continue to rely on the informal lending and saving groups, making the informal financial sector relevant in providing financial liquidity, comfort, and security to India's poor. For women, our analysis suggests, the top reasons for saving in the informal clubs are emergency, safety

of savings, easy access, and provision of lump sum. Men share similar views with only one caveat: provision of lump sum is more important to men than easy access.

When asked about the most frequent reasons behind saving with the informal savings groups, we find that nearly 14 times more women than men said informal savings clubs give them funding in the event of an emergency. About 6 times more women than men felt their funds were safe while about 9 times more women than men thought they could easily access their money if they needed it. Many more women than men also enjoy getting a lump sum when it is their turn. These savings patterns suggest that the formal banking system does not compete effectively with the informal saving groups or address the needs of women. Women resort to using informal savings clubs not only for the ease of access, but more importantly because they lack knowledge of how to interact with the formal banking institutions as well as having direct control, safety, and the comfort of the informal savings clubs that formal financial institutions do not seem to offer. These very basic trends clearly point to the need for greater investment in cultivating relationships with women and, in the process, informally educating women through an informal and accessible curriculum how to engage with the formal financial institutions. Others have similarly suggested that women would benefit from accessing financial services at places like community schools and hospitals to ensure women feel comfortable when interacting with the formal banking institutions (Agrawal, 2016).

Specific factors dictate poor women's resistance to using the formal financial sector in India: amongst them, education and healthcare costs are some of the most important ones. Educational programs aimed at lower income groups, informal saving club

users, and products that ease the barrier to formal financial engagement may help change those perceptions. Similarly, women rarely borrow from financial institutions, but when they do, education and health are the top drivers of poor women's financial decisions and engagement. Employing women's informal networks may be one of the ways to help spread content knowledge amongst women that would boost their both financial and digital literacy (Agrawal, 2016).

When further probed on reasons for not saving with the banking institutions, most men and women do not think they have sufficient funds to save with the bank. Secondly and perhaps more importantly, they view the informal entities as providing a viable alternative to the formal banking institutions where they can find comfort and immediate assistance as compared to the more rigid and intimidating formal banking institutions. Thirdly, men and women often directly share they simply do not know how to open a bank account, an issue indicative of the basic lack of financial knowledge and training on how to interact with the formal banking institutions. Aside from the banks' need to more effectively compete with the informal and private lenders, this lack of financial literacy and ability to engage with the banking institutions underlines that the banking institutions need to create effective education and training platform that would ease the poor's access into the formal financial world. Providing effective training on the ways to access and use financial accounts would induce systemic and material changes amongst poor women in India.

Our Findex data analysis complements our FII Dataset analytics with additional insights: more poor men than women rely on their wages and savings in emergencies. Women lack wage earning opportunities, which may partly explain why they do not

resort to wages in emergencies. They simply do not have them. Instead, women often rely on their family members as a source of emergency funding. A small number of men and women use financial institutions and credit cards for emergency funds. Similar to these Findex findings, only 1.8% of all poor women in the FII sample use bank accounts in emergencies. When it comes to lending sources, women simply do not rely on banks; instead they turn to family and friends,

which is likely indicative of women’s need to gain trust before engaging in financial transaction with any one individual or entity. It further suggests that women, particularly when they are poor, find comfort in engaging with informal institutions because of their familiarity and knowledge of how to interact with those institutions, which is not the nature of the formal relationships they could have with banks or other formal financial actors.

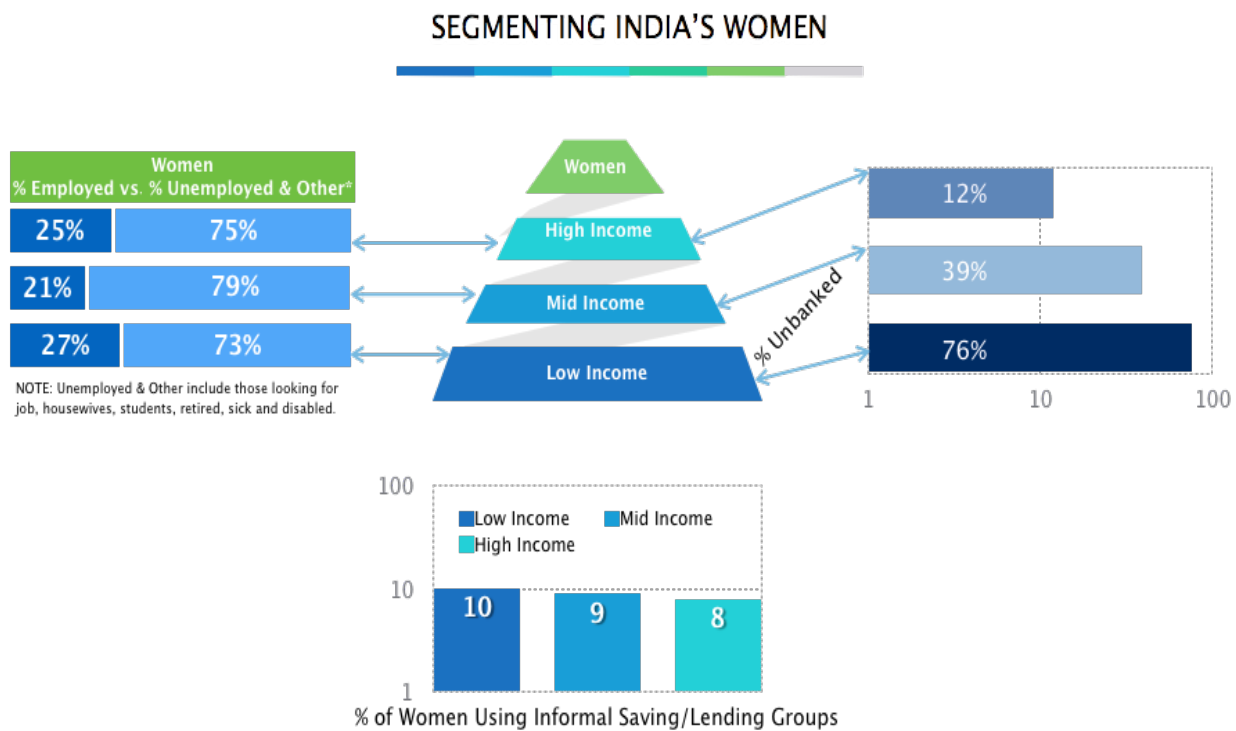


Figure 1. Segmenting India’s Women by Income

c. Financial Landscape for Poor Women in India: Income, Education and other Influencers

There are several vital factors precluding women from engaging financially with the formal banking institutions and therefore experiencing material changes in their lives that could result from effectively leveraging that relationship. We argue that only the informed interventions accounting for the poor women’s needs and conditions can lead to a productive engagement with banking institu-

tions that would ultimately materially change their lives, producing other cognitive, perceptual, and relational changes for them, their families, and their broader communities. A provision of a bank account does not necessarily warrant the women’s effective or informed use of that financial access. In the following sections, we spell out few reasons that have led surveyed women in India to disengage with the banking institutions.

1. Wage Earner and Social Benefits Factor

One of the main findings of this study is that women are more likely to engage with financial products and service providers - producing life changes for themselves, their families, and their communities - when women themselves receive their own wages, have accounts in their own name, receive social benefit payments, and are direct beneficiaries of products and services offered. Changes in their families and communities are consequential to the material, financial improvements in the lives of the poor women. When women undergo material changes that benefit them individually and financially, other forms of positive change for women, their families, and their communities sequentially follow. This is not to suggest that different types of changes cannot occur concurrently, but there exists an initiator effect and potential multiplier effect when the poor women receive a material and financial independence boost.

With the lack of income generating opportunities, poor women are frequently reliant on their social benefits payments. Poor women and men are, surprisingly, the least represented amongst the social benefit pay-

ments recipients in India (Figure 2). The largest sub-category within Findex data that does not receive social benefits at all are unbanked women followed by unbanked men. Other forms of government-to-person benefits similarly suggest that the governmental benefits may favor the higher income groups over the poor. For instance, of the FII survey participants who indicated whether they are gas subsidies recipients, only 18% were the poor women. However, women's inclusion substantively increases to 38% and 59%, respectively, for women in the next two income groups. Observed gender and socioeconomic differentials in social benefits payments raise questions regarding the social benefits eligibility and implementation process in India. This observation is important given that, as later detailed, receiving social benefits positively impacts poor women's engagement with the formal financial institutions. Simply put, if banking institutions are to actively engage with poor women in India, more should be done to ensure that there is an effective social benefits system ensuring that the recipients of the subsidies are India's poor.

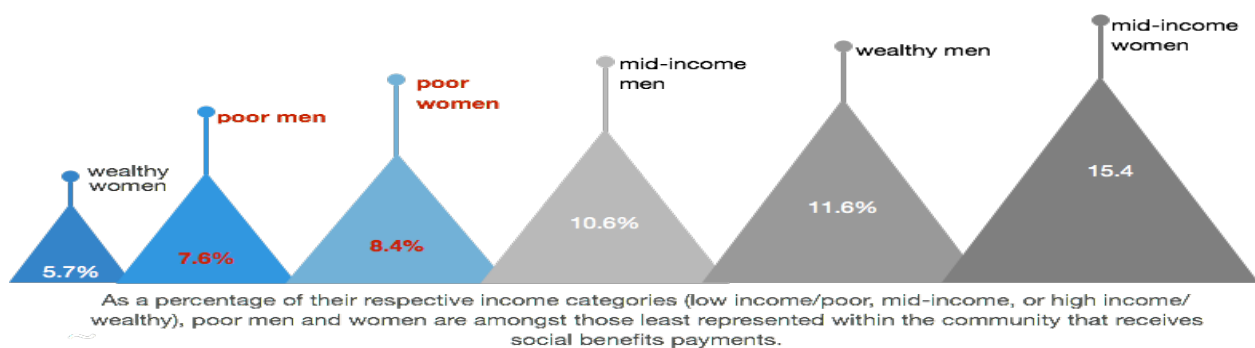


Figure 2. Social Benefits Recipients by Income

2. Deprivation Factor

Poor women in India feel a great sense of deprivation. The poor are most frequently challenged by not being able to afford a doctor when they need one (Figure 3). Many are also going without food (Figure 3). These

problems are compounded by the poor often going without fuel, not being able to afford transportation, or needing a fertilizer or a vet. The prevalence of varied forms of deprivation amongst the poor represents the financial pressure the poor women in India are

forced to cope with. When we further compare women and men within our FII sample, we find that there are many more poor women than men who are unable to afford food. Irrespective of their literacy level, there are still many more women who are unable to afford food than there are men. The same pattern is reflected in the data that measures poor women's ability to afford clothing. There are many more women, both literate and illiterate, who are unable to afford clothing than there are men. These insights into deprivation of the poor should inform design

of the new products and services aimed at materially changing the status of poor women in India. As we demonstrate and argue throughout this paper, poor women - when not understood or heard - often self-marginalize and exclude from the official financial system. Further, if not well-understood, informed, and educated on their options to financially engage, the poor may also become, as Gloukoviezoff (2007) argues, over-indebted, which is another risk factor for damaging trust and relationship with the banks.

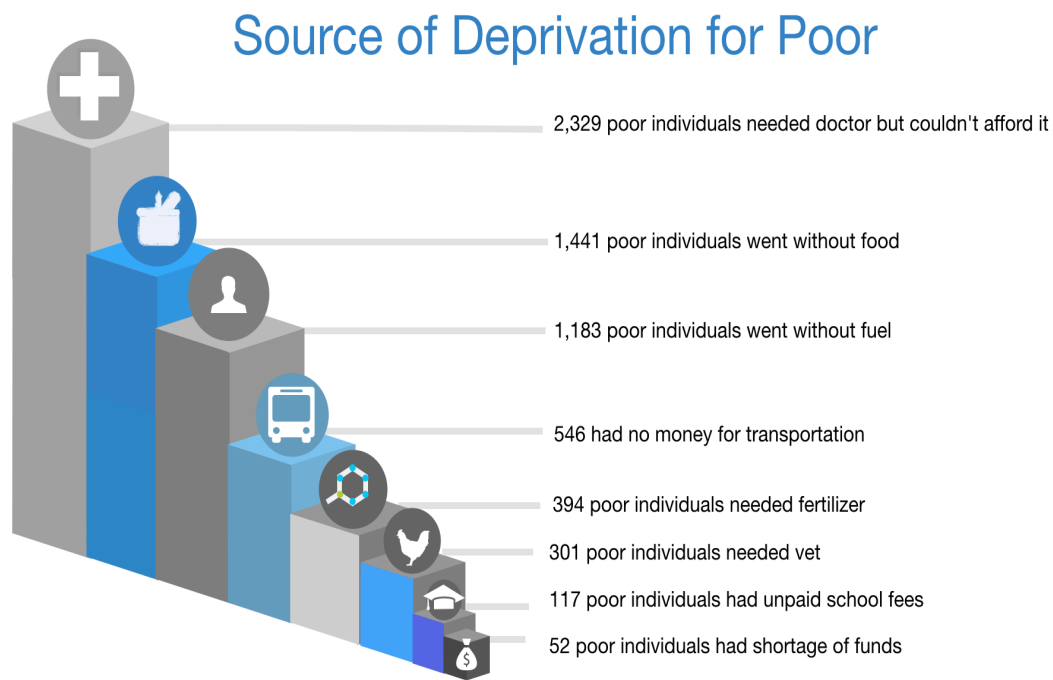


Figure 3. Sources of Deprivation for India's Poor

3. Education Factor

Improvements in education produce, firstly, cognitive changes and, secondly, impact other forms of change. However, for the poor women to obtain education, financial investment is necessary. Expectedly, our analysis of the Findex data suggests that a number of India's unbanked poor women declines as their education increases from primary, through secondary, and to ultimately tertiary education. Education matters to

both poor women and men, but poor women across both datasets lead in saving more often for education than men. They likely see it as the exit mechanism from the poverty circle. Within our Findex sample, we compare poor women by whether they save in the formal bank accounts for education fees, old age or for their farm/business, and we find that the poor women most frequently opt to save for education. Our FII analysis validates poor women's preference for education:

about 12% of the total number of poor women save for their kids' education as compared to only 7% of the poor women who save for their retirement. Education is clearly one of the key factors that plays prominently in women's financial empowerment and holds potential for financial interventions and products that would reflect this commitment of India's poor women to their own education and that of their children.

We further probe this important relationships between banking status and education. We regress whether being unbanked for women is predicted by education, age, employment status, income, source of emergency fund, social benefits, and informal lending. The magnitude of education's impact on being unbanked is unparalleled to any other factor: women with primary education are

23.9 times more likely to be unbanked than those with higher education (Table 1). Women with secondary education are still 9.5 times more likely to be unbanked than women with higher education degrees. This underlines the importance of education in instigating not only cognitive change for women but also producing a material impact by affecting their banking status.

Informal lending is a significant predictor in this model as well. Women who lend informally are more likely to be unbanked. As for the income, it is interesting to note that women in all other, but the bottom, income quintiles have greater odds of having a bank account as compared to the wealthiest women. This again suggests that the poor women are least likely to be financially included and served.

Table 1. Predicting Women being Unbanked by Education.

Variable Name	Odds Ratio
Age Group 1 (Age1), 15-24	2.239**
Age Group 2 (Age2), 25-34	.978
Age Group 3 (Age3), 35-44	.790
Age Group 4 (Age4), 45-54	.784
Education 1 (Education1), primary	23.900**
Education 2 (Education2), secondary	9.527**
Social Benefit Payment (SBP), received payment	.270
Received Wages (RW), received wages	.492**
Source of Emergency Funds 1 (SEF 1), savings	.276**
Source of Emergency Funds 2 (SEF 2), family, relatives & friends	.689
Source of Emergency Funds 3 (SEF 3), money from working or a loan from an employer	.313*
Source of Emergency Funds 4 (SEF 4), a credit card or borrowing from a formal financial institution	.313
Source of Emergency Funds 5 (SEF 5), private lender	.303*
Informal Lending (IL), lending funds	1.459**

Variable Name	Odds Ratio
Income 1 (Income1), poorest 20%	1.490
Income 2 (Income2), second 20%	2.418**
Income 3 (Income3), middle 20%	2.416**
Income 4 (Income4), fourth 20%	1.659**
Constant	.086
Chi-square, df	183.564, 18
% of Cases Correctly Predicted	69.2%

4. Income and Literacy Factors

Women's financial profiles in India are largely based on their life needs, socio-economic conditions, and demographics, but the lack of financial means is one of the key factors that materially impacts women and their financial behavior. The top four reasons, based on our analysis of the Findex dataset, for why India's poor women do not have a bank account is the lack of money, having a family member with an existing account, expense of opening the account, or simply not needing an account. Women who lack financial means have a limited potential to create a fertile ground for material change in their lives. Without material change, other forms of change are difficult to follow. Without adequate funds, women may not be able to afford education, may lack self-esteem or may have difficulties engaging with their communities or institutions. When they lack funds, women opt out of engaging in formal banking system.

In Table 2, we determine whether being satisfied with their present financial condition for women can be predicted by their age, marital status, number of kids in household, literacy level, living in urban or rural area, income, and having bank account in own name. Expectedly, the higher the income, the greater the odds of being satisfied with their financial condition. If women have a bank account in their own name, they are 1.075 times ($p < .01$) more likely to be satisfied with their own financial conditions. Having basic literacy skills also means women are 1.290 times more likely to be satisfied with their financial situation than women who do not have basic literacy skills. Women living in the urban versus rural areas have greater odds of being satisfied with their financial situation. This evidence on which factors impact women's satisfaction with their financial conditions should help inform new financial product design and interventions aimed at women's financial inclusion.

Table 2. Predicting Women's Satisfaction with their Financial Situation

Variable Name	Odds Ratio
Age Group 1 (Age1), 15-24	.973
Age Group 2 (Age2), 25-34	.956
Age Group 3 (Age3), 35-44	.946
Age Group 4 (Age4), 45-54	.950

Variable Name	Odds Ratio
Married, married	1.095**
Family Financial Situation 1 (FFS1), not enough for food	.191**
Family Financial Situation 2 (FFS2) food, but not clothes	.326**
Family Financial Situation 3 (FFS3) food & clothes, not expensive goods	.514**
Family Financial Situation 4 (FFS4), afford expensive goods	.722**
Bank Account in Own Name (BAO), bank account in own name	1.075**
Urban (U), urban	1.277**
Household Size Kids (HSK1), no kids	1.009
Household Size Kids (HSK2), 2-3 kids	.922
Household Size Kids (HSK3), 4-5 kids	.975
Household Size Kids (HSK4), 6-7 kids	1.004
Literacy	1.290**
Constant	1.963
Chi-square, df	1369.431, 16
% of Cases Correctly Predicted	60.5%

5. Wages, Social Benefits, and Savings Factors

Women, when they enhance and expand their financial resources through a material change that secures a greater degree of financial independence, are significantly more likely to engage with the financial institutions. We also show that education plays a key role in women opting for a formal bank account. Their lack of income and education, for the poor women in India, is the likely reason for the financial disengagement: they require interventions not only through the offer of new financial products, education and training on their usage, but also income generating opportunities that will allow these women to actively engage with the financial institutions. The new income generating opportunities should have an unquestionably positive impact on inducing engagement

with banks and expanding material changes in the lives of poor women in India.

For this reason we next test whether women opt for a formal account because of their education, age, received wages (aka employment status), income, informal lending, source of emergency fund, and social benefits (Table 3). Women who receive wages, we find, are 2.047 ($p < .01$) times more likely to have an account with a financial institution than those women who do not receive their own wages. Women receiving social benefits payments, have 3.761 ($p < .01$) times greater chance of having a bank account than women who do not receive social payments. Women who rely on their savings for emergency funds are 3.584 ($p < .01$) times more likely to have an account than women who rely on other emergency funding sources. In other words, we show that having financial account ownership amongst women

is more likely if women exercise a degree of financial independence by receiving their own wages, social benefit payments, and by relying on their own savings in the event of an emergency. Informal lending and education also remain relevant in impacting women's decision to open a bank account, but to a lesser degree.

Table 3. Predicting Women having a Formal Bank Account

Variable Name	Odds Ratio
Age Group 1 (Age1), 15-24	.449**
Age Group 2 (Age2), 25-34	.052
Age Group 3 (Age3), 35-44	1.303
Age Group 4 (Age4), 45-54	1.310
Education 1 (Education1), primary or less	.041**
Education 2 (Education2), secondary	.104**
Social Benefit Payment (SBP), received payment	3.761**
Received Wages (RW), received wages	2.047**
Source of Emergency Funds 1 (SEF 1), savings	3.584**
Source of Emergency Funds 2 (SEF 2), family, relatives & friends	1.437
Source of Emergency Funds 3 (SEF 3), money from working or a loan from an employer	3.167*
Source of Emergency Funds 4 (SEF 4), a credit card or borrowing from a formal financial institution	1.996
Source of Emergency Funds 5 (SEF 5), private lender	3.256*
Informal Lending (IL), lending funds	.679**
Income 1 (Income1), poorest 20%	.689
Income 2 (Income2), second 20%	.402**
Income 3 (Income3), middle 20%	.416**
Income 4 (Income4), fourth 20%	.594**
Constant	11.699
Chi-square, df	186.139, 18
% of Cases Correctly Predicted	70.8%

6. Poverty, School Fees, and Healthcare Factors

Women's financial behavior, as we demonstrate, is expectedly impacted by their financial goals. If they need to care for other family members, pay for school fees, or pay

off other debts, women are more likely to be unbanked. Women who pay for school fees, their own debt, or healthcare costs may be preserving funds for those needs rather than engaging with the banking industry to leverage banks in managing their education ex-

penses, healthcare costs, and other debt obligations. This points to the fact that women do not see banking institutions as partners in addressing those financial challenges they face. With more training and education as well as innovative and new products designed to form better partnerships between India's poor women and banking institutions, banking institutions would likely find themselves in a better relationship with India's poor. Well designed products should address poor women's financial needs relating to healthcare, education, and debt that they currently address on their own and largely outside the formal financial system. Such changes would bolster financial inclusion and result in both the material and relational changes for women in India.

We also examine whether women are banked because of factors such as women's age, education, marital status, employment status, income, mobile phone ownership, their financial goal, and being rural poor (Table 4). The poor women are about 1.7 times more likely to be unbanked than the wealthiest women. This comes as no surprise. As the income rises, the difference between the wealthiest women in India and other categories in terms of income lessens, but is still significant. Other factors remain relevant as well. Women who are 15-24 are more than 3 ($p < .01$) times more likely to be unbanked as compared to those older than 55. Women seeking employment are similarly more likely to be unbanked as are those, interestingly, who own mobile phones.

Table 4. Being Poor Matters in Predicting Unbanked Status for Women

Variable Name	Odds Ratio
Age Group 1 (Age1), 15-24	3.136**
Age Group 2 (Age2), 25-34	1.897**
Age Group 3 (Age3), 35-44	1.300**
Age Group 4 (Age4), 45-54	1.084
Education 1 (Edu1), no formal	1.753
Education 2 (Edu2), primary	1.576
Education 3 (Edu3), secondary	1.188
Education 4 (Edu4), higher	.541
Married, married	1.302**
Family Financial Situation 1 (FFS1), not enough for food	1.663**
Family Financial Situation 2 (FFS2) food, but not clothes	1.345**
Family Financial Situation 3 (FFS3) food & clothes, not expensive goods	1.204**
Family Financial Situation 4 (FFS4), afford expensive goods	1.094

Variable Name	Odds Ratio
Financial Goal 1 (FG 1), paying off debt/fees	.759**
Financial Goal 2 (FG 2), caring for family	1.159**
Financial Goal 3 (FG 3), buying assets	1.036
Financial Goal 4 (FG 4), investing	.957
Employment 1 (Employ1), full-time	.480**
Employment 2 (Employ2), part-time	.707**
Employment 3 (Employ3), self-employed	.637**
Employment 4 (Employ4), looking for job	1.473**
Rural Poor (RP), rural poor	.991
Mobile Phone Ownership (MPO)	.568**
Constant	.257
Chi-square, df	1954.497, 23
% of Cases Correctly Predicted	65.1%

7. Healthcare and Safety Factors

Healthcare needs shape financial behaviors of poor women in India. The ability to afford a doctor is regressed on the participants' gender, living in urban or rural area, literacy, marital status, employment status, income, having access to mobile money and bank account, and having a financial plan to cover for unplanned expenses. The dependent variable here captures whether a survey participant needed a doctor in the last 6 months but could not see the doctor or has delayed a doctor's visit due to insufficient funds.

Income plays a material role in determining the ability of India's men and women to see a doctor. The lower the income, the greater the challenge with being able to afford a doctor. In fact, the odds of having difficulties affording a doctor visit were greatest for the poorest: they were as much as 8.48 times more likely to have difficulties affording a doctor as compared to the wealthiest

(Table 5). Those with basic literacy levels and those in urban areas are similarly more likely to experience delays in seeing a doctor. Married women and men are 1.126 times more likely to experience a delay in seeing a doctor. This demonstrates that healthcare needs are not only a challenge for the illiterate and poor, but also an opportunity to intervene with novel financial products to actively and financially engage poor women in India.

Protecting oneself from poverty and crime carries importance in India, across all gender lines. Amongst the poor, the numbers of both men and women in our FII analysis who save to protect their families and themselves from crime and poverty are 3,372 and 4,596, respectively. These are some of the top concerns across all income groups in the FII data. Our findings help us assert that the fear of crime and, equally, fear of falling below poverty line are the key drivers of poor women's financial behavior in India.

Table 5. Predicting Healthcare Needs for Women and Men

Variable Name	Odds Ratio
Sex, female=1	1.006
Married, married	1.126**
Employment 1 (Employ1), full-time	.833**
Employment 2 (Employ2), part-time	1.271**
Employment 3 (Employ3), self-employed	.824**
Employment 4 (Employ4), looking for job	.976
Family Financial Situation 1 (FFS1), not enough for food	8.480**
Family Financial Situation 2 (FFS2) food, but not clothes	5.523**
Family Financial Situation 3 (FFS3) food & clothes, not expensive goods	2.665**
Family Financial Situation 4 (FFS4), afford expensive goods	1.416**
Access to Mobile Money & Full Service Bank (AFSB), access to MM & FSB	.795
Plan Emergency Fund (PEF), have emergency fund for unexpected	.773**
Urban	.818**
Literacy	.726**
Constant	.079
Chi-square, df	3000.547, 14
% of Cases Correctly Predicted	83.0%

8. Mobile Money Factor

The absence of mobile money services and products is a novel opportunity that can impact how women interact with financial institutions. Patterns of use we uncover also suggest that women's independence is key to how women interact with mobile money. Findex analysis suggests that poor women are not frequent debit card users. In fact, only when women have debit cards in their own name, the frequency of their use is the multiples of the use for women without a debit card in their own name. Most interestingly, when examining the pool of women who have debit cards in their own name and have used their credit cards in the last 12 months, we determined that only women who have

debit cards in their own name have also used their credit cards.

Still, across all income categories, mobile account ownership for women is negligible. Very few women use mobile phones for financial transactions. If they engage in mobile transactions, they are nearly always formal bank account holders. The number of women with mobile account access or women who use mobile account for payments or to receive remittances, social benefits payments, or for utility payments is insignificant. Expectedly, more poor men have debit cards as compared to poor women. Based on our Findex analysis, less than 40% of the poor women used their debit card over a 12-month period; further, no woman used her mobile phone to send remittances and only

two women received remittances via phone, domestically.

Most prominent reasons for not saving with a mobile money account for those in our FII dataset include not having enough money to save, saving via other means, and not knowing how to open the account. These reasons for not using a mobile money account coincide with the top reasons for why this population in India is not inclined to open bank accounts: they do not have enough money; do not know how to open an account; and they save via other means. Novel interventions therefore should focus on better training on products and account usage, product development, information campaigns, and overall knowledge of the products and services.

We predict debit card use amongst women (Table 6), using education, age, in-

come, whether they save for business/farm, old age, or education fees, and whether they pay for school fees. We find that the most notable predictor here is saving for education fees. If a woman is saving for education, she is 2.901 times more likely to use a debit card account as compared to a woman who does not save for education. Education fees are important to women. In fact, the number of women who do not have a mobile account within FII dataset but use a phone to pay for school fees is greater than the actual number of women with a mobile account who use phone to pay for school fees. Schools fees should be further explored to incentivize mobile phone use and, ultimately, impact both material and cognitive changes for women in India.

Table 6. Predicting Women's Debit Card Use

Variable Name	Odds Ratio
Age Group 1 (Age1), 15-24	.785
Age Group 2 (Age2), 25-34	1.269
Age Group 3 (Age3), 35-44	.109
Age Group 4 (Age4), 45-54	.448
Education 1 (Education1), primary	.624
Education 2 (Education2), secondary	.462
Paid for School Fees (PSF)	.751
Income 1 (Income1), poorest 20%	.930
Income 2 (Income2), second 20%	1.780
Income 3 (Income3), middle 20%	0.854*
Income 4 (Income4), fourth 20%	.650
Saving for Business/farm (SB)	1.978
Saving for Education Fees (SEF)	2.901*
Saving for Old Age (SOA)	.563
Constant	.043

Variable Name	Odds Ratio
Chi-square, df	21.447, 14
% of Cases Correctly Predicted	73.3%

4. Conclusion

The financial access factors studied in this research suggest that, despite some improvements observed across other income groups, the poorest women in India remain, at least in part, forgotten and excluded by the formal financial system. Our study aimed at building a fuller financial profile of those women with specific accent on the role of education-related variables. Women, we find, tend to vocalize their dissatisfaction with their financial condition to a lesser degree than men. They also receive less social benefit payments and have less wage earning opportunities than men. Instead of fully engaging with the formal banking institutions, women prefer informal entities in hope of easier and more reliable access to financial means than what they expect to encounter within the formal financial institutions. In many cases, women who are poor and uneducated do not know how to engage with the formal financial sector and, therefore, opt out of the formal system. If they had sufficient opportunities to earn, control, and direct earnings within the financial system knowledgably, women could more actively engage with the formal and particularly mobile banking sectors. The existing gaps between the poor women and other groups highlight the need for more targeted educational interventions that would help produce a greater financial inclusion and engagement amongst the poor and, consequently, material change for the poor women currently left behind. As our work evidences, improvements in the women's education and their greater earnings independence can serve as the impetus for

the material change amongst all those women who are presently unbanked, forgotten, and poor in India.

5. References

- Agrawal, S. (2016). "One out of four financially excluded women across the world is an Indian" Available online at: <http://www.livemint.com/Politics/KH3o9IVQHvswhLHkt5vyWI/One-out-of-four-financially-excluded-women-across-the-world.html>
- Bisas, S. (2013). Does India need a bank for women? Available online at: <http://www.bbc.com/news/21611787>
- Chen, G. (2014). India's unique ID could generate big boost in financial access. The Consultative Group to Assist. Available online at: <http://www.cgap.org/blog/indias-unique-id-could-be-about-generate-big-boost-access>
- Datwani, L. (2017). India's push for financial inclusion. The Consultative Group to Assist. Available online at: <http://www.cgap.org/publications/india's-push-financial-inclusion>
- Gloukoviezoff, G. (2007). From financial exclusion to overindebtedness: the paradox of difficulties for people on low incomes?. In *New frontiers in banking services* (pp. 213-245). Springer Berlin Heidelberg.
- Ismail, Afiah Binti Sheikh and Nor Aishah Buang. (2019). Development of Entrepreneurship Intentions among School Students in Malaysia. *IJOLAE Indonesian Journal on Learning and Advanced Education*. Vol.1 (1), July 2019. DOI: 10.23917/ijolae.v1i1.7289

- Kabeer, N. (2003). Assessing the wider social impacts of microfinance services: Concepts, methods, findings. *ID Bulletin Vol 34*. Available online at: https://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/8580/IDSB_34_4_10.1111-j.1759-5436.2003.tb00095.x.pdf?sequence=1
- Karmakar, K. G., Banerjee, G. D., & Mohapatra, N. P. (2011). *Towards financial inclusion in India*. SAGE Publications India.
- Leyshon A. and Thrift N. (1995) Geographies of Financial Exclusion: Financial Abandonment in Britain and the United States *Transactions of the Institute of British Geographers, New Series*, 20(3): 312-41.
- Monks, K. (2017). M-Pesa: Kenya's mobile money success story turns 10. CNN. February 24, 2017.
- Rasid, Nordalila Binti Mohammad, and Nor Aishah Buang. (2019). The Tendency Towards Entrepreneurship Among Students of Maktab Rendah Sains Mara (MRSM). *IJOLAE Indonesian Journal on Learning and Advanced Education*. Vol.1 (1), July 2019. DOI: 10.23917/ijolae.v1i1.7287
- World Bank (2016). Gender equality, poverty reduction, and inclusive growth. Available online at: <http://documents.worldbank.org/curated/en/820851467992505410/pdf/102114-REVISED-PUBLIC-WBG-Gender-Strategy.pdf>