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Gender in DFS – Summary of FII Report Findings

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Abstract

This report provides a summary of findings from six Financial Inclusion Insights (FII) data analysis reports conducted by various agencies for the Bill & Melinda Gates Foundation (BMGF). These reports investigate barriers to financial inclusion and use of digital financial services (DFS) in Bangladesh, India, Kenya, Nigeria, Pakistan, Tanzania, and Uganda. We compile comparable gender-specific statistics, summarize the authors' findings to determine commonalities and differences across countries, and highlight gender-specific conclusions and recommendations provided in the studies. Although widely differing methods preclude synthesizing findings across reports, this work is intended to support the Gender Working Group of the BMGF's Financial Services for the Poor (FSP) team by collecting the gender relevant findings into a single source.

Key Findings of the Reports:

- The studies find a generally consistent gender gap across the six countries in women's indicators related to use of DFS, as measured by awareness of DFS, mobile phone ownership, mobile phone access, DFS/mobile money account registration, and bank account registration.
- The gender gap in mobile phone access is lower than that for mobile phone ownership, suggesting that women who do not own phones are able to borrow or pay for access to mobile phones.
- Three of the studies (Houshmand, et al., 2015; Altai Consulting, 2014; Crowne, et al., n.d.) conduct regression analyses to analyze gender-specific constraints to use of DFS.
- Two studies find that literacy and numeracy are significantly associated of women's use of DFS.
- Two studies find that gender in Tanzania and Uganda is not a significant determinant of mobile money use when controlling for other socio-economic factors. Houshmand, et al. (2015), however, find that in Bangladesh the effect of being a woman on mobile money use is significant and negative even when controlling for other variables.
- In Bangladesh, Houshmand, et al.(2015) find that employment is significantly associated with active use among females who have already registered for a mobile money account.

1. Introduction

EPAR reviewed six FSP commissioned studies that analyze data from the Financial Inclusion Insights (FII) survey:

- Altai Consulting – Financial Inclusion Final Presentation;
- ODI – Bangladesh Financial Inclusion Insights;
- ODI – India Financial Inclusion Insights;
- Houshmand, et al. – Understanding Women's Adoption of Mobile Money Services in Bangladesh and Tanzania;
- Eighty 20 – FII Data Overview: Nigeria / Nigeria Segments[1]; and
- Crown, et al. - Gates Final Report: Female Mobile Money Awareness and Usage in Developing Countries.[2]

[1] The FII Data Overview is a summary of the FII Data and the Nigeria Segments document provides a detailed description of population segments included in the FII Data Overview, so we analyze them together.

These six studies provide insights into various socio-demographic characteristics of users and non-users of digital financial services (DFS), traditional banking, and mobile phones in Tanzania, Kenya, Uganda, Nigeria, Bangladesh, India, and Pakistan. In the FII surveys, questions pertaining to DFS use the term Mobile Money (MM). In this report, similar to the six reports reviewed, we use the two terms interchangeably.

Due to the differing methodologies and purposes of each report, we provide a summary of results relevant to women's adoption and use of DFS, rather than a synthesis of findings across studies. Our review methods are summarized in Appendix 1. We begin our review of these six reports with a brief overview of each of the commissioned studies, including review methods and key findings. Next, we summarize findings on gender and various measures of mobile or DFS access and use, supplementing findings from the reports with data from the FII website. Appendix 2 provides additional detail on the findings from the regression analyses of the three studies that conduct such analyses. In Appendix 3 we supplement this summary with relevant FII data not included in the studies but available on the FII website. Finally, we summarize the gender-related conclusions and recommendations provided by the authors. We provide additional detail on the specific conclusions and recommendations for each country reviewed in the reports in Appendices 4 and 5.

2. Summary of Studies

Bangladesh Financial Inclusion Insights (ODI, n.d.)

Key Findings:

- Top reasons given by survey respondents for not using mobile money include not needing to make any transactions (84%) and not having any money to make transactions (4%). These responses are not separated by gender.

In *Bangladesh Financial Inclusion Insights* (ODI, n.d.), the authors review recent FII data, presenting descriptive statistics to identify the financially excluded[3] populations within Bangladesh and examine the use of informal financial services (microfinance institutions, cooperatives, post offices, etc.) as well as constraints to financial inclusion (poverty, awareness, trust, etc.) for the population as a whole. The authors report that 83% of women in Bangladesh are financially excluded compared to 75% of men. Women are also significantly less likely to own a mobile phone (45%) than men (70%), though 91% of women have access to a phone. For example, ODI differentiates women based on location (rural/urban) and wealth (poor, not poor) to determine likelihood of financial exclusion. Among those in poverty, 87% of rural women and 77% of urban women are reported as excluded. In comparison, among poor men, 83% of rural men and 67% of urban men are financially excluded. However, the report does not consider possible determinants of financial exclusion that are specific to women.

Although the study is not fully disaggregated by gender, ODI summarizes a number of conclusions from the Bangladesh data: transferring money is one of the main reasons why citizens open bank and mobile money accounts; people understand the disadvantages of using cash; and although few people report issues with bank accounts, banks may need to provide better service for small transactions. The report also includes several takeaways concerning digital financial services. The data suggest that: while less than half of women own phones, 91% of women have access to a phone; mobile money users often rely on the same agents for transactions and have few issues with their accounts; and having mobile money accounts increases perceptions of financial options. ODI's recommendations include promoting general and financial education, prioritizing mobile money as a financial option, and improving bank regulations. ODI also recommends examining Bangladesh's successful MFIs to determine how to reach women.

[2] A seventh document, Crown, King, Shi, & Vargas – Data Analysis – Gates Foundation, was also reviewed. However this is a duplicate document summarizing results from the *Gates Final Report: Female Mobile Money Awareness and Usage in Developing Countries*. Because it presents no new information, it is not included in the review.

[3] ODI considers a person to be financially excluded if they do not have a bank account or mobile money account. They do not include those using microfinance institutions as financially included (ODI, n.d.)

India Financial Inclusion Insights (ODI, n.d.)

Key Findings:

- Awareness of mobile money in India is very low, with only 2% of survey respondents able to spontaneously recall the name of a service provider.
- Men and women give similar reasons for not having bank accounts. The two most common responses include not having enough money (54%) and not needing an account or making any transactions (26%).
- Other significant responses include not thinking about using a bank account (4%), not having an identity card (3%), and not knowing how to open an account (2%).

The *India Financial Inclusion Insights* review (ODI, n.d.) examines financially excluded populations in India, as well as constraints to inclusion and opportunities for promoting inclusion among unbanked populations. The authors also discuss levels of bank account activity and types of use, along with the use of informal financial services. The study reports that while a small portion (0.2%) of survey respondents in India have mobile money accounts, most people use traditional bank accounts. The authors find that awareness of mobile money in India is very low, with only 2% of survey respondents able to spontaneously recall the name of a service provider. Most bank account holders, especially those in rural areas, prefer to access their accounts at bank branches rather than at ATMs. The authors contend that limited exposure to alternative banking methods and skepticism towards the safety of alternatives are reasons for preferring traditional banks.

Survey results demonstrate that financial exclusion is higher among women (66%) than men (44%). Women and men give similar reasons for not opening bank accounts, however, including not being wealthy enough, attachment to cash, and lack of basic education. While some statistics provided are gender-disaggregated, others look at financial inclusion data by education levels, geographic regions, and income levels for the population as a whole. The authors often contrast urban men above the poverty line with rural women below the poverty line. For example, they find that a poor rural woman is three times more likely to be financially excluded than a non-poor urban man. Finally, because women and men have similarly high levels of access (though unequal levels of ownership) to mobile phones, the authors recommend focusing on mobile money accounts to promote financial inclusion among women.

FII Data Overview: Nigeria (Eighty20, 2014)

Key Findings:

- Awareness of mobile money in Nigeria is very low, with just 9% of survey respondents able to spontaneously recall the name of a service provider.
- Trust in mobile money services or agents is low across all population segments, without a significant difference between genders or rural/urban location.
- Having official identification, often required to register a mobile money account, differs more between genders than between urban and rural locations. Only 69% of rural poor females have official identification, compared to 77% of urban poor females and 85% of rural poor males.
- Roughly 13% of the population regularly send or receive remittances. Women comprise a larger portion (58%) of receivers, while men comprise a slightly larger portion of senders (52%).

The *FII Data Overview: Nigeria* presentation (Eighty20, 2014) uses FII data to analyze Nigeria's financially included and excluded populations. The authors go into significant detail on six population segments: the salaried urban citizens (divided into white collar and blue collar workers); the self-employed; rural farmers; the young and educated; the urban poor (divided into urban poor men and urban poor women); and the rural poor (divided into rural poor men and rural poor women).[4] The authors report descriptive statistics on mobile money awareness, trust, access to phones, and other financial inclusion variables for these groups. For instance, they find that 82% of rural poor women have personal access to a mobile phone or SIM card, compared to 94% of rural poor men. The authors also provide statistics on population segments that send or receive remittances, considered the primary market for certain MM services such as person-to-person transfers. They repot that men are more likely to send remittances (comprising 52% of all senders) whereas women are more likely to

[4] Although the presentation does not contain a methodology section, we assume that the segmented populations are just cuts of the raw data, rather than derived from principal component analysis.

receive remittances (making up 58% of all receivers). The authors do not use the data to analyze potential determinants of mobile money use for women and men.

The authors identify a number of barriers to mobile money adoption, including awareness of digital financial services, access to a cell phone for mobile money use, pricing, and trust in mobile money agents. Only 9% of survey respondents were able to name a mobile money service provider, suggesting that a lack of awareness of the service is a significantly barrier in its adoption. Another major barrier, trust, is broken into three categories: trust in people, trust in systems/infrastructure, and trust in recourse. The authors argue that trust in all three categories must be present in order to increase mobile money adoption in Nigeria. The study includes several recommendations for overcoming these barriers, including ensuring that all agents are adequately trained, that messages should be sent containing account balances, and that agents should be transparent when fixing issues. The authors further recommend that the BMGF conduct further research to gather supply side data and adjust current survey questions to more adequately gather information[5].

Understanding Women's Adoption of Mobile Money Services in Bangladesh and Tanzania (Houshmand, et al., 2015)

Key Findings for Bangladesh:

- **Mobile phone ownership and access**, as well as **bank account ownership**, are significantly associated with higher DFS use for both men and women.
- Having a **paid job** is strongly correlated with using DFS, more so for women than men.
- Comparing over-the-counter users to registered users, having an **education** is more positively associated with DFS use for women than men.
- **Numeracy** appears to also drive DFS use, but even when controlling for numeracy, women are still less likely to be a registered DFS user than men.
- Women living in **rural areas** have lower DFS adoption rates than those in urban areas.
- For women aware of DFS, primary drivers of use include **owning a mobile phone** and **having a paid job**. Barriers include living in a rural area and having a low PPI score.
- Women are significantly less likely to be aware of DFS than men. Factors influencing awareness among nonusers equally for both women and the full population include **age**, **education**, **literacy**, **numeracy**, **mobile phone access**, and **bank account ownership**.

Key Findings for Tanzania:

- The negative association between being a woman and adopting and using MM is not significant when other characteristics (marital status, age, literacy, numeracy, mobile phone ownership and access, employment status, living in a rural area, and PPI score) are controlled for.
- When comparing nonusers to users**, mobile phone ownership** has the strongest correlation with MM use for both men and women.
- When comparing lapsed users with active users (use in the last 90 days), the authors find that once women begin using DFS, they are more likely than men to remain active users.
- **Phone ownership** is a highly significant driver of active (compared to lapsed) DFS use. Phone ownership also has a highly positive interaction effect, meaning that it may be more of a driver of active use for women than for men.
- Among active users, **numeracy** is a stronger driver of frequent DFS use (at least four times in last 30 days) for women, whereas phone ownership is a stronger driver for men.[1]

In the London School of Economics (LSE)'s report on *Understanding Women's Adoption of Mobile Money Services in Bangladesh and Tanzania* (Houshmand, et al., 2015) the authors employ regression analyses to evaluate the gender gap in Mobile Money (MM) adoption and use with a series of dependent variables, such as MM adoption, active use, registered use,

[5] The current survey does not contain a question on bank proximity. The authors recommend asking the following: "How long does it take you to get to the closest bank/ATM/agent?" The authors also make suggestions to adjust current survey questions. For example, question DL1 asks, "Do you currently have a job that earns you income? It does not matter if the job is formal or informal, part-time or full time." The authors suggest reframing the question to: "What is your work status?" (working full time, working part time, not working: a student, not working: a housewife/husband, not working: retired, not working: unemployed." For more information on the suggestions made by the authors, see slides 81 and 82 (Eighty20, 2015).

frequency of use, and awareness. They examine barriers to and drivers of women's adoption, as well as DFS awareness among nonusers.

The authors find that in Tanzania, the effect of being a woman on using MM is no longer significant when other factors, such as education, literacy, numeracy, wealth, and mobile phone access, are controlled for. To the authors, this indicates that the negative association between female gender and MM use can be explained by other factors. In Bangladesh, however, the effect of being a woman on MM use is significant and negative[6] even when controlling for other variables. The authors find that in both countries, variables significantly and positively associated with MM adoption include owning a mobile phone and bank account ownership[7]. These variables are significant for both the full sample regression and women only regression, however, so the authors conclude that interventions targeting mobile phone ownership, for example, would increase MM adoption but not close the gender gap. In Bangladesh, the authors find that having a paying job influences women's adoption of MM more so than men's[8]. The authors end their report by recommending the financing of a randomized control trial (RCT) to test the hypothesis that women with paid jobs are more likely to adopt MM services. The RCT would provide women with financial incentives to use DFS, information about the benefits of DFS, or both, to test the theory that women with jobs are more likely to use DFS due to increased exposure and increased need for financial services.

Female Mobile Money Awareness and Usage in Developing Countries (Crown et al., n.d.)

Key Findings:

- Mobile phone ownership, education level, poverty level, and age are significantly associated with women's use of mobile money.
- For all countries, barriers to DFS awareness include **literacy** and **location** (urban/rural), along with **gender**.
- Among women who are aware of DFS, primary drivers of DFS use include **wealth**, **location** (urban vs. rural), **occupation**, and **dependence on remittances** as a source of income.

The paper *Female Mobile Money Awareness and Usage in Developing Countries* (Crown et al., n.d.) examines the barriers prohibiting women from adopting DFS. The report focuses on Mobile Money (MM) use in Bangladesh, India, Kenya, Nigeria, Pakistan, Tanzania, and Uganda. The authors begin with descriptive statistics on MM use in each country, but also conduct regression analyses to evaluate potential barriers to MM awareness and use for women, such as trust in MM, literacy, numeracy, urban vs. rural location, wealth, age, and education.

They study includes SVA regression analyses for sub-samples of men and women in Bangladesh, Kenya, Uganda, and Tanzania[9]. The authors find that for women, mobile phone ownership, education level, poverty level (as measured by Progress out of Poverty Index (PPI)), and age are consistently significantly associated with mobile money use across all four countries. Literacy has a significant association with women's mobile money use in Kenya and Uganda, and numeracy has a significant association in Uganda, and Tanzania. Further details on their regression results are included in Table 1 below and in Appendix 2.

The authors come to a number of gender-specific conclusions. First, increasing MM use for women will only work once awareness has surpassed a female "awareness threshold" of 60%. The authors therefore recommend that the BMGF should focus on increasing MM awareness before focusing on use. Second, while gender differences are present in MM use, literacy and location also have significant impacts. The authors argue female MM use is low because women in rural areas are more likely to be illiterate and less financially active. Based on these findings, the authors recommend investigating non-financial initiatives that have successfully targeted illiterate populations with improved advertising campaigns. The authors also suggest changing survey strategies to examine barriers to DFS awareness and usage, so that future product designs and innovations increase interest in and adoption of mobile money by women.

[6] $p<0.01$
[7] $p<0.01$
[8] In the women only sample, having a paid job is statistically significant at the 95% level ($p<.05$). Having a paid job is not significant for the full sample. The authors also report that PPI score and rural location have a negative, statistically significant impact on adoption of MM for the women-only sample ($p<.05$). These factors are not significant for the full sample.
[9] The authors do not provide gender-disaggregated MM usage regression results for India, Pakistan, or Nigeria.

Financial Inclusion – Final Presentation (Altai, 2014)

Key Findings:

- Gender does not appear to be a major barrier to using DFS in Tanzania or Uganda, but **literacy** and **poverty** are strongly and significantly associated with using DFS.
- The gender gap in DFS use appears to be primarily driven by differing levels of **mobile phone ownership** among men and women (a gap of roughly 20 percentage points in both Tanzania and Uganda).
- The authors report that in Tanzania, the variables most strongly associated with ever having used DFS are having a Vodacom SIM and self-reported competency in using mobile phones. In Uganda, the variables most strongly associated with ever having used DFS are having an MTN SIM and living in the Central Region.

The *Financial Inclusion Final Presentation* (Altai Consulting, 2014) uses bivariate and multivariate regression analysis of FII data from Tanzania and Uganda to highlight demographic, geographic, and socioeconomic characteristics correlated with DFS awareness, adoption, and use. They attempt to identify the strongest barriers to DFS usage by examining different socio-economic and demographic groups and characteristics, and their influence on consumer placement on the logical consumer adoption path: mobile phone ownership, DFS awareness, DFS registration, DFS trial, and DFS active usage. After identifying key obstacles to DFS adoption and use, the authors make policy recommendations and suggest future research initiatives that will help circumvent these barriers.

The authors argue that while a gender gap does exist, poverty and illiteracy are stronger[10] barriers to DFS adoption and use than either gender or occupation. Based on logit regressions of FII data in Tanzania, the authors find that gender is not significantly associated with active DFS usage or with DFS registration when controlling for socio-demographic variables and specific SIM card ownership. Individuals that are above the median income and literate individuals are 1.69 times and 1.43 times more likely to be active DFS users, and 1.66 times and 1.50 times more likely to have registered DFS accounts, respectively. More detail on the authors' regression findings are included in Table 1 below and in Appendix 2. The authors do not consider the effects of gender on DFS use or registration in their regression analyses for Uganda.

They contend that the gender gap is primarily driven by differences in mobile phone ownership, with 58% of women and 78% of men owning a phone. The authors recommend educational campaigns to increase knowledge around the usefulness and normalcy of financial services for all individuals, not just the wealthy. They recommend designing user-friendly products to circumvent the literacy barrier, bringing cheap mobile phones to the market to address the wealth gap, and considering regional differences when performing interventions and actions.

3. Findings on Gender and Factors Related to DFS Use

Findings from Regression Analyses

Three studies (Houshmand, et al., 2015; Altai Consulting, 2014; Crowne, et al., n.d.) use regression analysis to correlate variables such as mobile phone ownership, literacy, and poverty to DFS use. These studies do not always disaggregate their analyses by gender, and differ in their approach to evaluating the relationship between gender and factors related to DFS use. Crown, et al.(n.d.) conduct separate regressions on sub-samples of male and female respondents. Houshmand, et al. (2015) and Altai Consulting (2014) conduct regressions on the full sample and include gender and gender interaction terms as independent variables. Houshmand, et al.(2015) also repeat their regressions for only women respondents. A breakdown by country of significant findings from the regression results for DFS awareness and use from these studies is presented in Table 1. Appendix 2 includes additional regression findings from the Crown, et al. (n.d.) study, including findings for DFS awareness, and from the Altai Consulting (2014) study, including findings for DFS registration.

[10] In this analysis, the authors calculate odds ratios to determine the relative strength of drivers of DFS adoption and use.

Table 1. *Drivers of DFS/MM use (comparing respondents who have never used DFS to those who have ever used DFS)*[11]

Report	Country	Gender	Statistically Significant Drivers	Not Statistically Significant Drivers
Crown et al. (n.d.)[12]	Bangladesh	Women	• Trust in MM** • Employment** • Own a phone/SIM** • Secondary Education** • Settlement Size** (negative) • Primary Education**	• Literacy • Numeracy • Urban • PPI Cut Off • Age
		Men	• Own a phone/SIM** • Settlement Size** • Urban (negative)** • Trust in MM** • Literacy** • PPI Cut Off** • Age** • Primary Education** • Secondary Education** • Employment**	• Numeracy
	Kenya	Women	• Own a phone/SIM** • Secondary Education** • PPI Cut Off** (negative) • Literacy* • Urban* • Age** • Primary Education** • Employment**	• Trust in MM • Numeracy • Settlement Size
		Men	• Own a phone/SIM** • Settlement Size** • Secondary Education** • Primary Education** (negative) • Age**	• Trust in MM • Literacy • Numeracy • Urban • PPI Cut Off • Employment
	Uganda	Women	• Own a phone/SIM** • Urban** • Secondary Education** • Literacy** • Numeracy** • PPI Cut Off** (negative) • Age**	• Trust in MM • Primary Education • Settlement Size • Employment
		Men	• Own a phone/SIM** • Secondary Education** • PPI Cut Off** (negative) • Literacy** • Age*	• Trust in MM • Numeracy • Urban • Primary Education • Settlement Size • Employment
	Tanzania	Women	• Own a phone/SIM** • Urban** • Secondary Education** • Numeracy** • PPI Cut Off* (negative) • Age** • Primary Education** • Employment*	• Trust in MM • Literacy • Settlement Size

[11] *** p<0.01, ** p<0.05, * p<0.1

[12] The Crown et al. report (2015) does not analyze the FII data using whole-population regressions. Instead, the authors run regressions for women-only and men-only subsamples.

		Men	• Own a phone/SIM** • Settlement size** • Literacy** • Urban** • PPI Cut Off** (negative) • Age** • Primary Education** • Secondary Education**	• Trust in MM • Numeracy • Employment
Altai Consulting (2014)[13]	Tanzania	Gender included as independent variable	• Living in a region with high Active Usage • Having a Tigo SIM • Being rich (half richer part of pop.) • Not being a farmer • Having an Airtel SIM • Having an ID document • Having a job with an income • Being literate • Living in an urban area	• Owning a bank account • Being a man
	Uganda	Not Gender Disaggregated; Gender not included as independent variable	• Having an airtel SIM • Owning a bank account • Being rich (half richer part of pop.) • Being literate • Living in an urban area • Living in Eastern Region	• Having a job with an income
Houshmand et al. (2015)	Bangladesh	Gender included as independent variable	• Female* • Access to phone*** • Own mobile phone*** • >Primary education*** • Basic literacy* • Basic numeracy** • Own bank account*** • PPI score*female*** (negative) • Age*** (negative)	• Rural • Rural*female • Married • Married*female • Primary education*female • Literacy*female • Numeracy*female • Own mobile phone*female • Access to phone*female • Own bank account*female • Paid job • Paid job*female • PPI score • Age*female
		Women	• Own mobile phone*** • Access to phone* • Own bank account*** • Paid job** • Rural** (negative) • PPI score** (negative)	• Married • >Primary education • Literacy • Numeracy • Age
	Tanzania	Gender included as independent variable	• Own mobile phone*** • Rural*** (negative) • Own bank account** • >Primary Education** • Basic numeracy* • PPI score***	• Female • Rural*female • Married • Married*female • >Primary education*female • Literacy • Literacy*female • Numeracy*female • Own mobile

[13] P-values are not available for the Altai Consulting report.

				phone*female • Access to phone • Access to phone*female • Own bank account*female • Paid job • Paid job*female • PPI score*female • Age (negative) • Age*female (negative)
		Women	• Own mobile phone*** • Access to phone*** • Own bank account*** • Rural*** (negative) • >Primary education** • Basic numeracy** • Paid job** • PPI score** • Age* (negative)	• Married • Literacy

Descriptive Statistics on Gender Gaps

While just three of the studies test the associations between gender and factors related to DFS use, each report includes a variety of summary statistics surrounding characteristics of users and non-users of DFS. In this section, we present the gender-disaggregated statistics provided by the six studies we review. We supplement the data from the studies with additional data from the Financial Inclusion Insights website, when available.

Gender-disaggregated data from multiple countries are available for five variables related to use of DFS. We first report findings on awareness of DFS. Then, we consider physical access to DFS, as indicated by mobile phone ownership and access[14]. Next, we report the percentage of men and women with a registered DFS account. Finally, we examine bank account ownership, which several of the studies contend is associated with DFS use. As a supplement to the findings from the studies reviewed, we present additional statistics from the FII website and calculate the gender gap for a variety of DFS/MM variables in Appendix 3.

***Table 2**. DFS Awareness*

	Tanzania	Kenya	Uganda	Nigeria	Bangladesh	India	Pakistan
Male	96% (Houshmand, et al.)	97% (FII)	94% (FII)	14% (FII) 18% urban poor, 8% rural poor (Eighty20)	94% (Houshmand, et al.)	8% (FII)	71% (FII)
Female	93% (Crown et al.; Houshmand, et al.)	97% (Crown et al.)	87% (Crown et al.)	10% (Crown et al.) 12% urban poor, 5% rural poor (Eighty20)	84% (Crown et al.; Houshmand, et al.)	3% (Crown et al.)	57% (Crown et al.)

Awareness is requisite for DFS use, and varies widely across countries. In Tanzania and Kenya, more than 93% of women report being aware of DFS or mobile money. Over 80% of women in Uganda and Bangladesh are aware of DFS/MM, as are over 57% of Pakistani women. However, these numbers are significantly lower for Nigeria and India. Only 10% of women in Nigeria are aware of mobile money, and only 5% of rural poor women. The numbers are even lower in India, where only 3.4% of women are aware of mobile money. These numbers are in stark contrast to female bank account ownership in India (the highest, at 39%) and female phone access at 82%. The Crown, et al. (2015) study indicates that awareness could serve as a major barrier to increasing DFS use, as the authors find that increasing female awareness of mobile money only has a significant impact on usage once it passes an "awareness threshold" of about 60%.

[14] Mobile phone access is considered the ability to borrow a phone or pay for its use. The related mobile phone access question from the FII Survey is, "Do you access a mobile phone elsewhere that belongs to someone else, either by borrowing or paying for its use?" (Intermedia)

Data for men's awareness of DFS indicate a smaller gender gap than in other measures of digital finance and mobile phone access and use. Men and women are equally aware of DFS in Kenya, and in Tanzania, awareness is just 3 percentage points higher for men than for women. In Nigeria, India, and Bangladesh the gender gap is less than 10 percentage points, though in India men's awareness is just 8 percent.

***Table 3**. Mobile Phone Ownership*

	Tanzania	Kenya	Uganda	Nigeria[15]	Bangladesh	India	Pakistan
Male	78% (Altai; Houshmand, et al.)	75% (FII)	73% (Altai)	93% urban poor, 94% rural poor (Eighty20)	70% (ODI) 72% (Houshmand, et al.)	65% (ODI)	80% (FII)
Female	58% (Altai; Houshmand, et al.)	72% (FII)	52% (Altai)	89% urban poor, 82% rural poor (Eighty20)	45% (ODI) 44% (Houshmand, et al.)	32% (ODI)	38% (FII)

The data present a clear gender gap in mobile phone ownership for all countries. In Tanzania, both the Altai Consulting and LSE reports find similar ownership numbers: nearly 78% of men in Tanzania own a mobile phone, in comparison to 58% of women. The gender gap is nearly identical in Uganda, where Altai Consulting find a gap of 21 percentage points between men and women. Bangladeshi women are 25 percentage points less likely to own a phone than men. The gap is even more pronounced in India, where only 32% of women own a mobile phone, compared to 65% of men. The gap in mobile phone ownership is largest in Pakistan, where 80% of men but just 38% of women own a mobile phone.

Nigeria stands out among these countries, as the report by Eighty20 finds that even the most impoverished citizens have high phone ownership, with at least 80% of poor men and women owning phones. The gender gap, although negligible among urban poor citizens, is still present in rural areas, as 82% of rural poor women own mobile phones compared to 94% of rural poor men. Kenya is the only country where there does not appear to be a significant gender gap in mobile phone ownership, as FII data indicate that 72% of women and 75% of men own a mobile phone.

***Table 4**. Mobile Phone Access*

	Tanzania	Kenya	Uganda	Nigeria	Bangladesh	India	Pakistan
Male	90% (Houshmand, et al.)	93% (FII)	90% (FII)	93% urban poor, 94% rural poor (Eighty20)	85% for those that do not own one (ODI) 96% total (Houshmand, et al.)	82% (ODI)	88% (FII)
Female	83% (Crown et al.; Houshmand, et al.)	94% (Crown et al.)	85% (Crown et al.)	96% (Crown et al.) 97% urban poor, 93% rural poor (Eighty20)	91% (ODI - for those that do not own one) 95% (Crown et al.; Houshmand, et al.)	82% (Crown et al., ODI)	70% (Crown et al.)

The gender gap for mobile phone access appears much smaller than the gender gap in mobile phone ownership across countries. This finding suggests that women are able to borrow phones from family members or friends, or by using a commercial phone. The 20-percentage point gender gap in phone ownership in Tanzania declines to a 7-percentage point gap for mobile phone access. In India a gender gap of 33 percentage points in mobile phone ownership decreases to less than 1 point when considering phone access. We observe a similar pattern in Bangladesh, Pakistan, and Uganda.

In Nigeria and Bangladesh, the gender gap inverts for some populations: urban poor women in Nigeria are more likely to have access to a mobile phone than urban poor men, and the gap shrinks to 1 percentage point for rural poor women and rural poor men. While men in Bangladesh are just slightly more likely than women to have access to a mobile phone in general (96% as opposed to 94.7%); among citizens that do not own phones, women are 6 percentage points more likely to have access to a mobile phone than men. In Kenya, we find that although women were 3 percentage points less likely to own a mobile phone, they are 0.5 percentage points more likely to access one.

[15] The authors of the Nigeria study looked at multiple segments of the population. We include information on poor men and women in urban and rural areas, but other segments are not separated by gender.

***Table 5**. DFS/Mobile Money Account Registration*

	Tanzania	Kenya	Uganda	Nigeria	Bangladesh	India	Pakistan
Male	50% (FII)	70% (FII)	34% (FII)	0.1% (FII)	5% (Houshmand, et al.)	0.2% (FII)	0.4% (FII)
Female	39% (Crown et al.)	67% (Crown et al.)	25% (Crown et al.)	0.2% (Crown et al.)	1% (Crown et al.; Houshmand, et al.)	0.1% (Crown et al.)	0.4% (Crown et al.)

Statistics for female DFS/MM account registration are presented in the Crown, et al. (n.d.) study across countries of interest, and in the LSE study for Bangladesh. As shown in Table 1, there is wide variance in DFS/MM registration across countries. In Kenya, a country where DFS has quickly gained traction, 67% of women have registered DFS accounts, and there is little difference in account registration between men and women. Although still behind men, female registration levels also appear to be increasing in Tanzania and Uganda, with 39% and 25% of women respectively registered with DFS accounts.

The same level of account registration is not evident in the other countries: in Nigeria, Bangladesh, India, and Pakistan, 1% or less of female citizens have registered DFS/MM accounts. However registration is similarly low for both men and women in these countries. The authors of the Eighty20 Nigeria and the ODI India reports contend that low account registration is due to low awareness (9% in Nigeria, 2% in India) of mobile money, as well as low trust in mobile money agents and the network infrastructure (Eighty20, 2015; ODI, n.d.). The authors of the Eighty20 study do not believe that pricing or access to a cell phone or sim card are barriers to mobile money adoption. However, these hypotheses are not tested.

Trust in mobile money services and network infrastructure is similarly low in Bangladesh, a finding that the ODI report authors hypothesize as a barrier to DFS use. The authors of the ODI Bangladesh and India reports also use the FII data to argue that poverty and attachment to cash for transactions are other key barriers to mobile money use (ODI, n.d.). However, unlike in Nigeria and India the authors find that 52% of financially included and 32% of financially excluded Bangladeshi survey respondents are aware of mobile money (bKash in Bangladesh), and therefore argue that awareness is not a barrier to DFS use in Bangladesh.

***Table 6**. Bank Account Registration*

	Tanzania	Kenya	Uganda	Nigeria	Bangladesh	India	Pakistan
Male	14% (Houshmand, et al.)	35% (FII)	18% (FII)	44% (FII) 49% urban poor, 45% rural poor (Eighty20)	21% (Houshmand, et al.)	55% (FII)	11% (FII)
Female	7% (Crown et al., Houshmand, et al.)	19% (Crown et al.)	7% (Crown et al.)	33% (Crown et al.) 37% urban poor, 24% rural poor (Eighty20)	15 % (Crown et al.; Houshmand, et al.)	39% (Crown et al.)	3% (Crown et al.)

Female bank account registration is low across all countries. India has the highest female account registration at 38%, with Nigeria a close second at 33%. The figures for women with their own bank account registration vary significantly for the other countries, from 19% in Kenya to a low of 3% in Pakistan. A number of studies indicate that people who have registered bank accounts are more likely to be financially active and to use mobile money than those who do not, although bank account registration is not necessary to register for a DFS account (Eighty20, 2014; Altai Consulting, 2014; Houshmand, et al., 2015). The studies, however, do not claim that bank account ownership leads to DFS use. The ODI India study also cautions against mistaking account ownership for account use. They state that high bank account registration has increased bank inactivity in India, and because of this "a clear danger exists that new accounts opened under a promotion drive may also become inactive in future if the main driver of uptake is one-off incentives rather than long-term improvement in service provision to clients" (ODI, n.d.).

Bank account registration for men is also relatively low but varies across countries, from a high of 55% in India to a low of 11% in Pakistan. The gender gap also varies, though it is greater in countries with higher levels of male bank account

registration. India and Kenya have the largest gender gap, at 16 percentage points in each country. The gender gap is smallest in Tanzania and Bangladesh at 7 and 6 percentage points, respectively.

4. Gender-Related Conclusions and Recommendations

A complete list of conclusions and recommendations from the studies can be found in Appendices 4 and 5. Below, we summarize the gender-specific takeaways noted by the authors, followed by recommendations for increasing DFS use among women.

Gender-Related Conclusions

Literacy and numeracy are found to be key determinants of women's use of DFS across multiple studies. The LSE (2015) study argues that numeracy "encourages" DFS use for women in Tanzania and Bangladesh, though the multivariate analysis only confidently indicates a correlation. The authors suggest conducting a randomized control trial to evaluate causality. Crown, et al. (n.d.) find that financial inclusion disparities are differentiated by literacy as well as gender. This driver could be increasing the gender gap, since literacy rates tend to be lower for women than men in these focus countries, as illustrated in Table 7.

***Table 7**. Gender-Disaggregated Literacy Rates in Countries of Interest*

Country	Male Literacy Rate	Female Literacy Rate	Literacy Gender Gap
Tanzania	75%	61%	14
Uganda	83%	65%	18
Bangladesh	62%	55%	7
Nigeria	61%	41%	20
India	75%	51%	24
Kenya	78%	67%	11
Pakistan	67%	42%	25

Source: United Nations Educational, Scientific and Cultural Organization (UNESCO) eAtlas of Literacy (2013)

The LSE (2015) and Altai Consulting (2014) reports both find that gender in Tanzania and Uganda is not a significant determinant of mobile money use when controlling for other socio-economic factors (literacy, wealth, location, mobile phone ownership, etc.). This finding may, however, reflect some endogeneity bias as gender is likely correlated with other control variables such as owning a mobile phone, employment, numeracy, and bank account ownership. For example, gender may influence the likelihood of DFS use through its effect on mobile phone ownership as well as through other channels, making it difficult to understand how gender is independently related to DFS use. Further research on barriers to mobile phone ownership and other barriers, as well as on the relationship between mobile phone ownership and DFS use would help to determine whether providing women with phones would be an effective strategy to reduce the gender gap in DFS use (See Table 2.1 in Appendix 2 for more information).

The ODI studies (n.d.) do not differentiate DFS use by gender, and therefore do not make any conclusions concerning DFS use. The Crown, et al. (n.d.) study does not disaggregate its conclusions by country, but does find that financial inclusion is affected by both gender and region (urban vs. rural), with a particular emphasis on DFS awareness as a driver of DFS use.

In Bangladesh, Houshmand, et al. (2015) find that employment is a significant factor for predicting active use among females who have already registered for a mobile money account. The authors hypothesize that DFS use stems from employment increasing the demand for financial management, though other factors may also be in play.

Gender-Related Recommendations

Due to the lack of gender-specific conclusions from the six studies, the authors provide few recommendations that have a gender focus. For a comprehensive list of recommendations, including those concerning education, customer service, regional differentiation, and advertising, see Appendix 4.

The Crown, et al. (n.d.) study analyzing DFS use in Pakistan, Tanzania, Bangladesh, India, Uganda, and Nigeria argues that advertising strategies could increase women's use of DFS. Because literacy is a key determinant of DFS use, and because women have lower literacy rates than men, the authors recommend focusing on reaching illiterate female populations through differentiated advertising. The authors also note that microfinance institutions (MFIs) have seen significant success in their marketing strategies for illiterate populations, and suggest that these successful strategies[16] be applied to market DFS to this population.

The ODI (n.d.) study of Bangladesh provides recommendations for policymakers as well as financial service providers. Similar to recommendations from Crown, et al., ODI recommends that policymakers learn from the Bangladesh microfinance market's success in maximizing inclusion of women in financial services. Although this recommendation is not differentiated by service, women's use of DFS could be positively impacted by using successful MFI marketing strategies. For financial service providers, ODI recommends specifically targeting women, as they are a highly excluded and underserved population in the market. The study does not make any specific suggestions as to how the providers should market their services to women.

The Houshmand, et al. (2015) study makes general recommendations concerning the questions asked in the FII survey, as well as a recommendation to conduct a field intervention and a randomized control trial in Bangladesh in order to investigate whether women who have paid jobs are more likely to adopt mobile money services. However, the study does not make any recommendations concerning future policy or marketing strategies to increase DFS use among women.

[16] The Crown, et al. (n.d.) study considers two social sectors that have created successful marketing campaigns aimed at illiterate populations: vaccine programs have utilized "banners and comics with minimal text to target illiterate young populations," and microfinance institutions in the developing world have created ATMs for illiterates "using signs, colors, and sounds to identify types of transactions."

Appendix 1: Review Methods

We developed a review framework and set of questions to categorize information about DFS/MM access and use across each study. The complete list of the 66 questions in our framework is included below. The majority of the questions are dichotomous (Yes/Not specified) to assist with comparative analysis, but each question is accompanied by a detailed explanation. We organized the questions into seven categories:

- Study Characteristics (10 questions)
- Socio-demographic Information (11 questions)
- Banks and Financial Institutions (13 questions)
- Mobile Phones (5 questions)
- Digital Financial Services (DFS)/Mobile Money (MM) (13 questions)
- Customer Experience (4 questions)
- Conclusions and Recommendations (10 questions)

We used these categories to organize the comparable gender-disaggregated data presented in each study, as well as to compare conclusions and recommendations across studies and priority countries. After reviewing each study, we summarized the information for each question into the framework spreadsheet. We then used results from our framework to identify information available across studies on constraints to using DFS for women compared to men (e.g., mobile phone ownership and access, awareness of DFS, etc.)

Study Characteristics

- When was the study written/published?
- What country (or countries) are reported on (note country)?
- Does the study report on population size?
- Does the study report on geographic regions?
- Does the study discuss theories/frameworks of mobile banking, ICT, etc.?
- Does the study discuss theories/frameworks of technology adoption (TAM, UTAUT, etc.)?
- Do the authors discuss their own hypotheses (women and rural respondents use DFS less, etc.)?
- Do the authors discuss barriers to adoption/use of DFS (access, literacy, numeracy, wealth, locality, etc.)?
- What is the methodology of the study (bivariate analysis, multivariate analysis)?
- Does the study report on descriptive statistics of the respondent population?

Socio-demographic Information

- Does the study report on respondent gender?
- Does the study report on respondent location (rural/urban)?
- Does the study report on respondent marital status?
- Does the study report on respondent occupation?
- Does the study report on respondent employment status?
- Does the study report on respondent wealth?
- Does the study report on respondent literacy?
- Does the study report on respondent numeracy?
- Does the study report on respondent formal education?
- Does the study report on respondent age?
- Does the study report on respondent identification documentation?

Banks and Financial Institutions

- Does the study report on bank account ownership?
- Does the study discuss reasons for not having a bank account?
- Does the study describe the types of usage of bank accounts (savings, storage, etc.)?
- Does the study report on respondent distance to banks?
- Does the study discuss frequency of use of bank accounts?
- Does the study discuss respondent trust in banks?
- Does the study report on the size of bank transactions?
- Does the study discuss pre-paid digital cards?
- Does the study report on informal financial services (microfinance, village savings, post offices, etc.)?
- Does the study discuss frequency of use of informal financial services (IFS)?
- Does the study describe respondent reasons for using IFS (trust, lack of wealth, lack of ID, etc.)?
- Does the study discuss the advantages of using cash (convenience, ease, availability, etc.)?
- Does the study discuss the disadvantages of using cash (unsafe, lack of storage, etc.)?

Mobile Phones

- Does the study report on mobile phone access?
- Does the study report on mobile phone ownership?
- Does the study report on mobile phone literacy?
- Does the study discuss local mobile network operators?
- Does the study discuss the price of mobile phones or service fees?

Digital Financial Services (DFS)

- Does the study report on DFS agents or providers?
- Does the study discuss respondent awareness of DFS?
- Does the study describe how respondents heard of DFS (family, neighbors, television, radio, etc.)?
- Does the study discuss respondent adoption of DFS?
- Does the study discuss reasons for not adopting DFS (trust, phone illiteracy, phone access, etc.)?
- Does the study describe qualifications to become a DFS user (ID, account, amount of money, etc.)?
- Does the study discuss respondent trust in DFS?
- Does the study identify respondents who have tried DFS?
- Does the study describe the type of DFS used?
- Does the study report on respondent frequency of use of DFS?
- Does the study report on respondent distance from a DFS agent?
- Does the study discuss over the counter and registered use of DFS?
- Does the study describe the size of DFS transactions?

Customer Experience

- Does the study report on customer satisfaction for bank account owners?
- Does the study report on customer satisfaction for DFS users?
- Does the study discuss respondent issues with bank accounts?
- Does the study discuss respondent issues with DFS/mobile money agents?

Conclusions and Recommendations

- What are the key drivers of DFS use?
- What are the key conclusions from the study?
- Does the study include gender-specific findings or conclusions?
- What recommendations are discussed by the authors?
- Do the authors discuss recommendations relating to education and awareness of DFS?
- Do the authors discuss recommendations relating to literacy or mobile phone literacy?
- Do the authors discuss recommendations relating to improved customer experience and trust?
- Do the authors discuss recommendations relating to mobile phone affordability?
- Do the authors discuss recommendations relating to regional differences within countries?
- Do the authors discuss recommendations relating to marketing/advertising?

Appendix 2: Regression Results

***Table 2.1**: Drivers of Mobile Money Awareness - Regression results from Crown, et al. comparing respondents who are not aware of mobile money to those who are aware of mobile money*[17]

Country	Gender	Significant Drivers		Insignificant Drivers	
Bangladesh	Women	• Phone/SIM** • Trust in MM** • Literacy** • Primary Education**	• Numeracy** • Secondary Education** • Settlement Size** (negative)	• Urban • PPI Cut Off • Age • Employment	
	Men	• Trust in MM** • Literacy* • Numeracy**	• Phone/SIM** • Primary Education** • Secondary Education**	• Urban • PPI Cut Off • Age	• Settlement Size • Employment
Kenya	Women	• Phone/SIM** • Primary Education** • Secondary Education**	• Urban* • PPI Cut Off* (negative)	• Trust in MM • Literacy • Numeracy	• Employment • Age • Settlement Size
	Men	• Phone/SIM** • Primary Education** • Literacy**		• Trust in MM • Numeracy • Urban • PPI Cut Off	• Age • Secondary Education • Settlement Size • Employment
Nigeria	Women	• Primary Education** (negative) • Literacy* • Urban*	• Numeracy* • Age** (negative) • Settlement Size* (negative)	• Trust in MM • Phone/SIM • PPI Cut Off	• Secondary Education • Employment
	Men	• Primary Education** • Secondary Education** • Urban**	• Numeracy** • Settlement Size** (negative)	• Trust in MM • Literacy • Phone/SIM	• PPI Cut Off • Age • Employment
Pakistan	Women	• Primary Education**[18] (negative) • Literacy** • Secondary Education**[19] (negative)	• Trust in MM* • Urban** • Age** (negative)	• Numeracy • Phone/SIM • PPI Cut Off	• Settlement Size • Employment

[17] ** p<0.05, * p<0.1
[18] "Primary education is non-significant when literacy is excluded from the analysis," (Crown et al., 2015).
[19] "Secondary education is positively significant (6.6%) when literacy is excluded, (Crown et al., 2015).

	Men	• Literacy** • Trust in MM** • Secondary Education**	• Primary Education* • Employment** (negative)	• Numeracy • Urban • Phone/SIM	• PPI Cut Off • Age • Settlement Size
India	Women	• Trust in MM** • PPI Cut Off** (negative) • Phone/SIM**	• Numeracy** • Urban** (negative) • Age**	• Literacy • Primary Education • Secondary Education	• Employment • Settlement Size
	Men	• Trust in MM** • PPI Cut Off** (negative) • Secondary Education** • Literacy** • Numeracy**	• Urban** (negative) • Phone/SIM** • Employment** (negative) • Age	• Primary Education • Settlement Size	
Uganda	Women	• Urban** • Employment** • Literacy**	• Numeracy** • PPI Cut Off** (negative) • Age* (negative)	• Trust in MM • Phone/SIM • Primary Education	• Secondary Education • Settlement Size
	Men	• Numeracy* • Literacy** • Urban** (negative)	• Age** • Employment**	• Trust in MM • Phone/SIM • PPI Cut Off	• Primary Education • Secondary Education • Settlement Size
Tanzania	Women	• Phone/SIM** • Primary Education** • Employment**	• Numeracy** • Urban** • Secondary Education**	• Trust in MM • Literacy • PPI Cut Off	
	Men	• Literacy** • Phone/SIM** • Age**		• Trust in MM • Numeracy • Urban • PPI Cut Off	• Primary Education • Secondary Education • Settlement Size • Employment

Table 2.2: *Female and Male Mobile Money Awareness SVA Regression Results (from Crown, et al.)*

Country / Variables	Tanzania		Kenya		Uganda		Nigeria		Bangladesh		India		Pakistan	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
Trust MM	-	-	-	-	-	-	-	-	7%*	3%*	11%*	22%*	8%	13%*
Literacy	-	14%*	-	10%*	3%*	2%*	6%	-	3%*	1%	-	2%*	19%*	14%*
Numeracy	3%*	-	-	-	3%*	3%	3%	6%*	3%*	4%*	0.75%*	2%*	-	-
Urban	3%*	-	1%	-	5%*	-1%*	4%	7%*	-	-	-0.83%*	-3%*	11%*	-
Phone/SIM	17%*	11%*	31%*	32%*	-	-	-	-	10%*	3%*	0.88%*	3%*	-	-
PPI Cut Off	-	-	-1%	-	2%*	-	-	-	-	-	-1%*	-5%*	-	-
Age	-	0.50%*	-	-	-0.15%	0.03%*	-2%*	-	-	-	2%*	0.05%	-1%*	-
Primary Ed.	5%*	-	2%*	15%*	-	-	-7%*	20%*	5%*	2%*	-	-	-24%*[i]	7%
Secondary Ed.	3%*	-	2%*	-	-	-	-	11%*	6%*	2%*	-	4%*	-15%*[ii]	11%*
Settlement Size	-	-	-	-	-	-	-2%	-2%*	-0.46%*	-	-	-	-	-
Employed	4%*	-	-	-	5%*	0.05%*	-	-	-	-	-	-1%*	-	-10%*

All figures within the table are statistically significant at the 90% level. Results for non-significant variables are not included in the report.
* = significant at the 95% level.
Note: "For example, a female living in Bangladesh would be 6.14% more likely to be aware of mobile money if she has received secondary education." (Crown et al., n.d.).

***Table 2.3**: Female and Male Mobile Money Usage SVA Regression Results (from Crown, et al.)*

Country / Variables	Bangladesh		Kenya		Uganda		Tanzania	
	Women	Men	Women	Men	Women	Men	Women	Men
Trust MM	9%*	16%*	-	-	-	-	-	-
Literacy	-	6%*	6%	-	12%*	9%*	-	23%*
Numeracy	-	-	-	-	10%*	-	20%*	-
Urban	-	-21%*	5%	-	25%*	-	29%*	17%*
Phone/SIM	8%*	25%*	66%*	65%*	39%*	48%*	45%*	49%*
PPI Cut Off	-	-8%*	-12%*	-	-10%*	-14%*	-9%	-13%*
Age	-	2%*	2%*	2%*	2%*	3%	2%*	2%*
Primary Ed.	6%*	-0.02%*	10%*	-0.02%*	-	-	14%*	-0.02%*
Secondary Ed.	7%*	11%*	18%*	12%*	20%*	20%*	22%*	22%*
Settlement Size	-1%*	23%*	-	33%*	-	-	-	41%*
Employed	9%*	-5%*	5%*	-	-	-	7%	-

All figures within the table are statistically significant at the 90% level. Results for non-significant variables are not included in the report.
* = significant at the 95% level.
Note: For example, a female living in Kenya would be 66% more likely to use mobile money if she owns a phone than if she does not, while a male living in Kenya would be 65% more likely to use mobile money if he owns a phone than if he does not.

***Table 2.4**: Drivers of DFS Use and Registration in Tanzania (from Altai Consulting, 2014)*

Variables	DFS Active Usage		DFS Registration	
	Full Regression	Socio-Demographic Variables Only	Full Regression	Socio-Demographic Variables Only
Having a Vodacom SIM	3.59	N/A	5.18	N/A
Judging itself good in using mobile phone	2.59	N/A	2.70	N/A
Having a Tigo SIM	1.91	N/A	2.28	N/A
Living in a region with high registration	2.02	1.30	1.84	2.58
Being rich (half richer part of the pop.)	1.69	2.12	1.66	2.14
Being literate	1.43	2.61	1.50	2.80
Having an Airtel SIM	1.56	N/A	1.50	N/A
Living in an urban area	1.36	1.62	1.45	1.72
Having any ID document	1.53	X	1.41	X
Owning a bank account	X	3.60	X	2.69
Having a job with an income	1.45	1.97	X	2.09
Being a man	X	2.65	X	1.50
Not being a farmer	1.56	1.61	X	1.45

Note: Scores are reported as odds ratios, which the authors define as "the multiplication factor between the success of the explicative variable and success of the dependent variable." For example, this table reads "People having a Vodacom SIM have 5.18 times more chance to be active user than people who have not a Vodacom SIM" (Altai Consulting, 2014).

Results reported as "X" indicate findings that were not statistically significant. Results reported as "N/A" indicate that the variable was not included in that regression.

Appendix 3: Additional Statistics from Financial Inclusion Insights Website

***Table 5.1**: Summary statistics for countries included in the six studies*

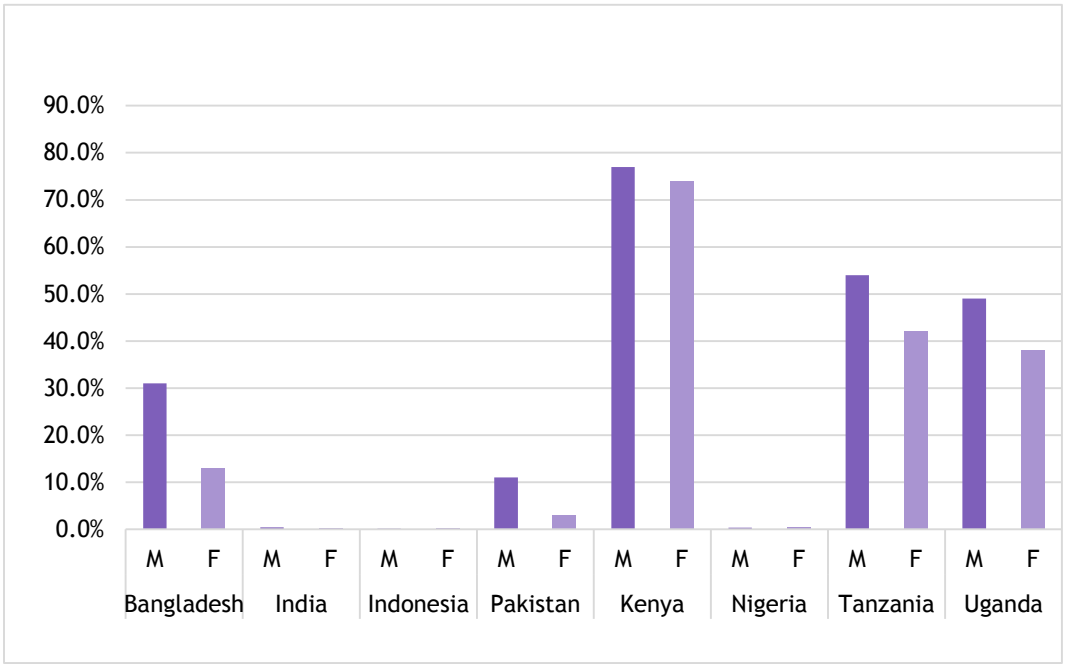
	Bangladesh			India			Pakistan			Kenya			Nigeria			Tanzania			Uganda		
	M	F	GAP[20]	M	F	GAP	M	F	GAP	M	F	GAP	M	F	GAP	M	F	GAP	M	F	GAP
Have Ever Used MM	31%	13%	18	0.4%	0.1%	0.3	11%	3%	8	77%	74%	3	0.3%	0.3%	0	54%	42%	12	49%	38%	11
Registered MM User	6%	1%	4.8	0.2%	0.1%	0.1	0.4%	0.4%	0	70%	67%	3	0.1%	0.2%	-1	50%	39%	11	34%	25%	9
Active MM User (Past 90 Days)	26%	10%	16	0.2%	0.1%	0.1	9%	2%	7	70%	66%	4	0%	0%	0	45%	37%	8	42%	32%	10
Registered Active MM User	4.5%	1%	3.5	0.1%	0.1%	0	0.4%	0.4%	0	65%	60%	5	0.1%	0.1%	0	42%	35%	7	30%	22%	8
Own Mobile Phone	72%	44%	28	68%	31%	37	80%	38%	42	75%	72%	3	93%	87%	6	78%	58%	20	73%	52%	21
Own or Can Borrow Mobile Phone	96%	95%	1	89%	81%	8	88%	70%	18	93%	93%	0	97%	96%	1	90%	83%	7	90%	85%	5
Own Sim Card	72%	45%	27	54%	39%	17	79%	39%	40	78%	76%	2	93%	88%	5	88%	74%	14	75%	54%	21
Own or Can Borrow Sim Card	95%	93%	2	86%	77%	9	87%	71%	16	94%	93%	1	96%	95%	1	90%	82%	8	90%	85%	5
Own Bank Account	21%	16%	5	55%	39%	16	11%	3%	8	35%	19%	16	44%	33%	11	14%	7%	7	18%	7%	11
Own or Have Access to Bank Account	23%	17%	6	56%	39%	17	13%	4%	9	36%	22%	14	48%	40%	8	15%	8%	7	20%	8%	12
Active Bank Account User (Past 90 Days)	14%	10%	4	32%	18%	14	10%	3%	7	29%	13%	16	40%	30%	10	10%	5%	5	15%	5%	10

[20] The gender gap is measured by the percentage point difference between males and females.

Table *5.1 (continued)*: *Summary Statistics for Indonesia*[21]

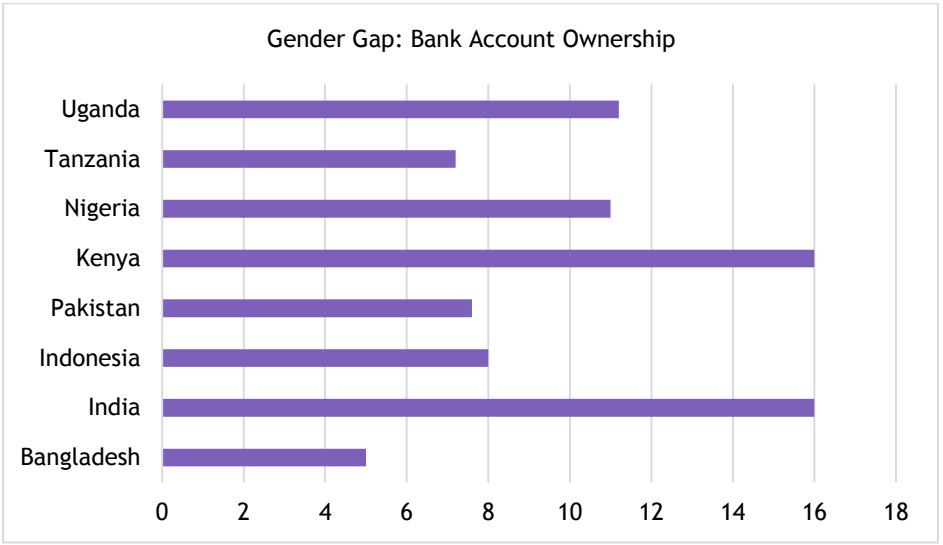
	Indonesia		
	Male	**Female**	**GAP**
Have Ever Used MM	0.1%	0.1%	0.0
Active MM User (Past 90 Days)	0.0%	0.1%	-0.1
Registered MM User	0.1%	0.1%	0.0
Registered Active MM User	0.0%	0.1%	-0.1
Own Mobile Phone	70%	56%	14
Own or Can Borrow Mobile Phone	79%	74%	5
Own Sim Card	69%	56%	13
Own or Can Borrow Sim Card	78%	72%	6
Own Bank Account	26%	18%	8
Own or Have Access to Bank Account	32%	26%	6
Active Bank Account User (Past 90 Days)	24%	19%	5

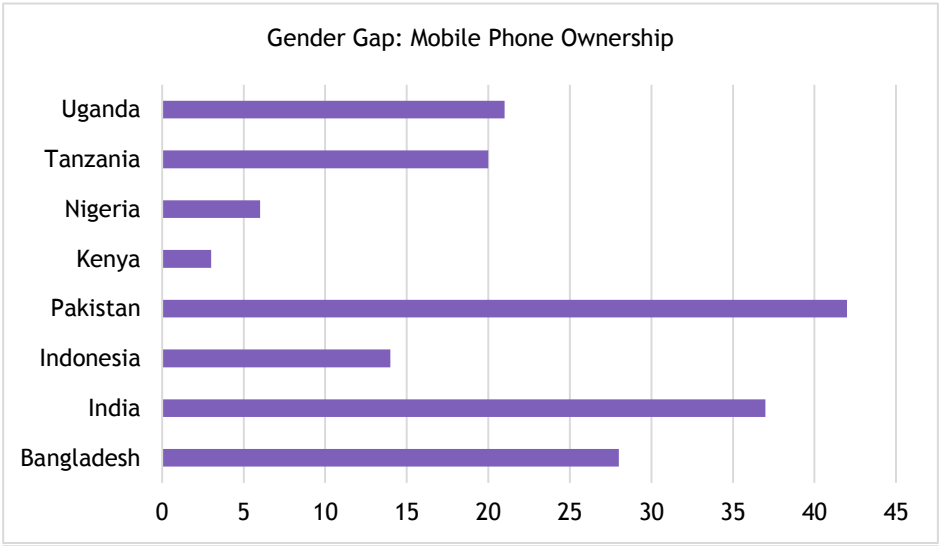
Figure 5.2: *Percent of survey respondents who have ever used Mobile Money*

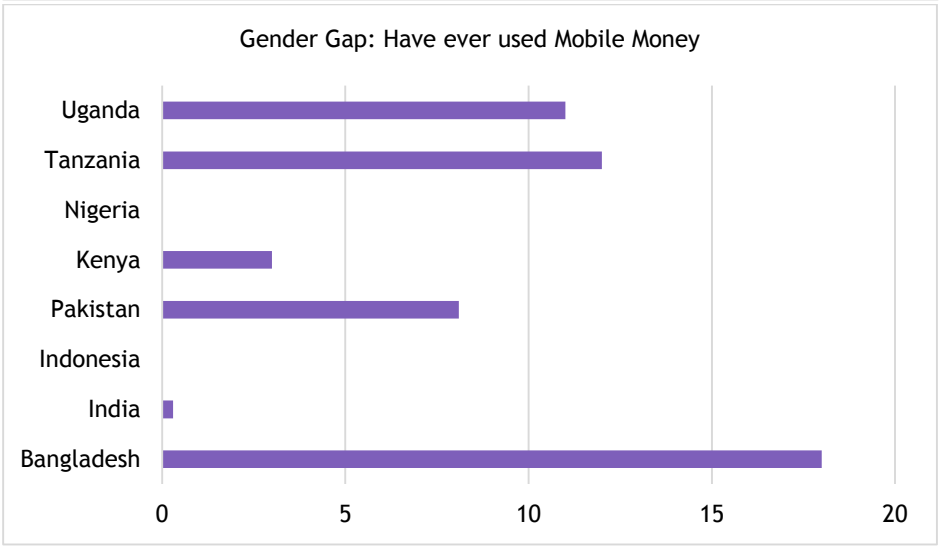


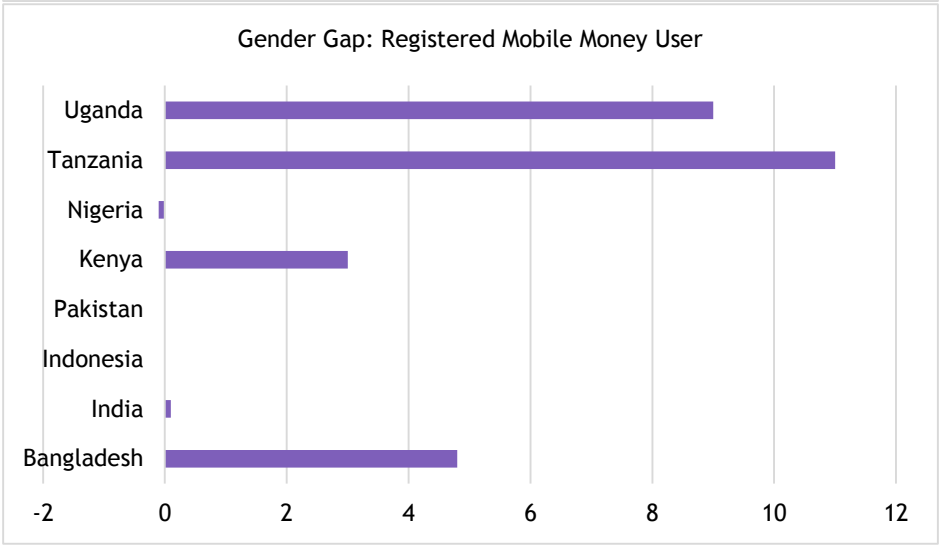
[21] None of the six studies analyzed FII data for Indonesia but data are available on the FII website.

***Figure 5.3**: Country comparisons of gender gaps (units a percentage point differences between figures for men and for women)*









Appendix 4: Conclusions and Takeaways by Country

	Gender-Related	Education-Related	Others
Tanzania (Altai Consulting; LSE)	"In Tanzania, the negative effect associated with gender is statistically insignificant when controlling for other factors." (LSE) "In Tanzania, increased phone ownership in the general population might increase MM adoption, but would not decrease the gender gap, since women are more affected by phone access than ownership." (LSE) "In Tanzania, variables that are positively associated with DFS adoption by women include owning a mobile phone, employment, and bank ownership. Numeracy seems to consistently be associated with use along the intensive margin." (LSE)		"All individuals do not fully perceive the potential interest of financial services and they can be split in three fairly equal categories regarding MFS adoption: do not own a mobile phone, "in-between", or active users." (Altai Consulting) "Poverty and illiteracy stand out as the strongest barriers to DFS use. Contrast in use by regions and according to the mobile operator owned are massive." (Altai Consulting) "Tanzania has more potential to add active users, be it in absolute terms (~7M individuals vs. 3.7M in Uganda) or in relative terms (~28% vs. 19%)." (Altai Consulting)
Uganda (Altai Consulting)			"All individuals do not fully perceive the potential interest of financial services and they can be split in three fairly equal categories regarding MFS adoption: do not own a mobile phone, "in-between", or active users." (Altai Consulting) "Poverty and illiteracy stand out as the strongest barriers. Contrast in usage by regions but also according the mobile operator owned are massive."(Altai Consulting)
Bangladesh (ODI; LSE)	"In Bangladesh, being a woman is significant and negative for all extensive and intensive margins and nonuser comparisons." (LSE) "Although there are many variables that are significant for women, they do not differently affect men and women. Therefore any intervention broadly targeting MM adoption through these factors could increase adoption but would not likely decrease the gender gap." (LSE) "In Bangladesh, employment is a significant factor in female users registering a MM account." (LSE) "In Bangladesh, variables that are positively associated with DFS adoption by women include owning a mobile phone, employment, and bank	"Promoting general and financial education is an important policy priority for achieving financial inclusion." (LSE)	"Sound bank regulation and supervision are needed to build trust in the banking system and give confidence to users." (ODI)

	ownership. Numeracy seems to consistently engage use along the intensive margin." (LSE) The authors find that, given the success of MFIs in targeting poor, rural women, there is a strong argument to include MFI membership in analysis of financial inclusion issues. (ODI)		
Nigeria (Eighty20)			Based on descriptive statistics and focus groups, the authors assert the following: Although many respondents in the focus groups were aware that mobile money existed, they did not have a functional awareness of how the service works. "Trust is a major barrier to MM adoption": trust in people, systems, and recourse were all discussed by survey respondents in focus groups and interviews.
India (ODI)	The survey data show that financial exclusion is more highly concentrated among women.	"Survey data show that financial exclusion is more concentrated among those with little or no formal education. To address low education levels and financial literary requires investment in and reform of basic education systems generally but there should also be a role for including financial education as a key element of specific financial inclusion programs such as JDY, perhaps concentrated particularly in states with high financial exclusion such as in the north-east." (ODI)	"High levels of bank account inactivity already exist, with particularly high levels amongst women, farmers and farmworkers and in certain states. A clear danger exists that new accounts opened under a promotion drive may also become inactive in future if the main driver of uptake is one-off incentives rather than long-term improvement in service provision to clients." (ODI) "Clients need to make frequent but low-value transactions. Opening and servicing many new, small-balance accounts may be very costly for banks unless transaction costs can be reduced, creating longer term disincentives to continue promoting new accounts." (ODI)
Across all countries (Crown, et al.)	Based on multivariate regression results, the authors suggest that financial inclusion disparities differ not only by gender, but are also associated with literacy status and region of residence. See Appendix 2 for more information on the statistical significance of these findings.	"The financial system can learn from other initiatives that target illiterate populations to implement improved advertising techniques and thereby raise awareness among illiterate populations." (Crown, et al.)	The authors find that increasing female awareness of mobile money only has a significant impact on usage once it passes an "awareness threshold" of about 60%. "Aware users and non-users differ in wealth, area of residence (urban or rural), occupation, and reliance on remittances." (Crown, et al.)

Appendix 5: Report Recommendations by Country

	Gender-Related	Education	Customer Service	Regional Differentiation	Advertising	Other
Tanzania (Altai Consulting; LSE)		"Have education campaigns and make sure that financial services usage is perceived as normal for all categories of the population to increase sophistication of financial services use." (Altai Consulting)	"Work with MNOs on customer experience." (Altai Consulting)	Due to varying levels of DFS awareness, adoption and use between urban and rural users, the authors suggest differentiating actions based on regional markets. For example, focusing on increasing mobile phone ownership may be necessary in one region, while increasing DFS awareness may be a priority in other regions. (Altai Consulting)		"Design user-friendly devices for illiterate users." (Altai Consulting) "Bring cheaper handsets/phones to the market." (Altai Consulting) "Adjust scope of future research." (Altai Consulting)
Uganda (Altai Consulting)		"Have education campaigns and make sure that financial services usage is perceived as normal for all categories of the population to increase sophistication of financial services use."	"Work with MNOs on customer experience."	Due to the differences between urban and rural users, the authors suggest differentiating actions based on regional markets.		"Design user-friendly devices for illiterate users." "Bring cheaper handsets/phones to the market." "Adjust scope of future research."
Bangladesh (ODI; LSE)	For financial service providers: "Target women. Women are underserved and highly excluded in the market. Women using or borrowing mobile	"Providers should consider simple and low-cost ways to accompany their financial service offering with information and financial education messages to clients."	"Banks need to project a friendlier and more informal image, while also offering terms and conditions (such as minimum account balances) which are appropriate to low-income clients making many small transactions." (ODI)		"Ways should be found to incentivize mobile money users to start opening accounts rather than using over-the-counter services offered by agents." (ODI)	"Focus on mobile money applications." (ODI) "Mobile money operators should try to convert current mobile money users into mobile money account holders. (ODI)

	phones can access services they need." (ODI) For policy makers: "Lessons should be learned from Bangladesh's MFIs on how to maximize inclusion of women in financial services, as women are more likely to use MFIs than men." (ODI)	(ODI)	"Careful management of agent networks." (ODI) "Financial service providers should keep accounts and products simple and straightforward for lower-income clients." (ODI)		"Introduction of tiered Know Your Customer requirements for small-value mobile money accounts would help to encourage account opening without increasing AML/CTF risk significantly." (ODI) "Government agencies and employers should be incentivized to use mobile money accounts for their G2P, P2G and B2P transfers." (ODI)	"Mobile money channels should be prioritized as a means of financial inclusion above the development of bank branch infrastructure." (ODI) "Over-the-counter transactions should be legalized." (ODI)
Nigeria (Eighty20)			"Ensure all agents are adequately trained and conduct regular checks." "Send update messages to users informing them of their airtime balance after every call." "Create clear avenues for recourse and ensure issues are dealt with timeously." "In order to gain trust and a reputation for transparency, providers must ensure that information such as pricing lists and agent locations are readily available and that this information is always consistent." The authors suggest that mystery shopping, a concept that uses anonymous evaluators to rate customer service, could provide insights into the user experience from registering for mobile money to transacting using the			

			service. "Engagement with providers and other stakeholders around the research is very important to ensure that insights and learnings from the research are actioned."			
India (ODI)			"Sound bank regulation and supervision are needed to build trust in the banking system and give confidence to users."			The authors suggest creating digital channels for government payments: "Given the high proportion of survey respondents who receive a government salary, pension or welfare payments through manual delivery channels, significant opportunities exist for promoting financial inclusion through switching to digital channels for government payments."
Across all countries (Crown, et al.)	"Because literacy rates are low among women, advertising and marketing strategies should focus on reaching illiterate female populations." The authors recommend identifying successful marketing strategies used by MFIs and applying these to mobile money.			Target products to population needs: for example, aware non-users of DFS have a higher dependence on remittances than aware users. Because of this, future DFS products could have ways to manage remittances.	"Target advertisement to the underserved populations."	The authors suggest that awareness should be the focus before use – once awareness is high enough, the market can adjust.