



Women's Financial Inclusion in a Digital World

How mobile phones can reduce gender gaps

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Glossary

(Additional definitions with sources in Annex Table C)

Gender gap

Gender gaps are calculated as the difference between male and female percentages over the male percentage.

Mobile access

The percentage of women (age 15+) responding "yes" to the Gallup World Poll question: "Do you have a mobile phone that you use to make and receive personal calls?" In some cases, this refers to women owning a mobile phone and in others, only having access to one.

Mobile money accounts

The percentage of respondents (age 15+) who report personally using a mobile money service in the past 12 months.

Financial inclusion

The percentage of respondents (age 15+) who report having an account at a bank or other type of financial institution, or report personally using a mobile money service in the past 12 months, or report both.

Source: "Account" variable in the Global Findex.

Financial institution accounts

The percentage of respondents (age 15+) who report having an account (alone or joint) at a bank or other type of financial institution such as a credit union, microfinance institution, cooperative, or post office, or who report having a debit card in their own name. This excludes respondents who own mobile money accounts only.

Financial account gap

The gender gap in having an account at a bank or other type of financial institution.

Developing countries

Countries not listed as “high-income” in the Global Findex database.

Fragile and conflict affected (FCA)

Countries classified as such by the World Bank based on weak policies and institutions or the presence of a United Nations (UN) and/or regional peacekeeping or peacebuilding mission during the past three years.

Source: World Bank's "Harmonized List of Fragile Situations FY19."

Executive Summary

Globally, only about two-thirds of women own a financial account, compared to about three in four men.¹ The size of this gender gap varies across countries. It has largely closed in rich countries, whereas in developing countries women are 13 percent less likely than men to own a bank account.² In conflict-affected settings, the disparities are large. The 253 million women residing in the 36 fragile and conflict-affected (FCA) countries are, on average, 27 percent less likely than men in those countries to have a bank account.³

Women, especially those who live in conflict-affected settings, often face more barriers in accessing financial services than men. Lack of autonomy, adverse social norms, and unfavorable safety conditions compound the challenges to financial inclusion.⁴

Mobile phones can benefit women in many ways: they are a critical instrument for advancing economic interests and activities, increasing their safety in the community, facilitating access to vital information (including health and well-being), and staying in touch with family.⁵ Mobile phones can also open new doors for women into the world of financial products. Phones can allow them access to their finances with the touch of a button, instead of having to travel to a bank. Phones also enable secure and organized financial planning, allowing women to track their money and store it safely and out of the reach of abusive relatives. Mobile and digital technology can also help to connect people in remote locations or where services and infrastructure are limited.

Evidence also suggests that there is a good business case for increasing women's mobile phone ownership. A recent estimate by GSMA found that closing the gender gap in mobile ownership and usage in low- and middle-income countries by 2023 could generate an additional \$140 billion in revenue to the mobile industry.

This paper focuses on the potential of mobile phones for women's financial inclusion. We present new estimates that, controlling for various other relevant factors, greater mobile phone usage among women is associated with much lower gender gaps in financial inclusion – a percentage point lower gender gap in mobile access is associated with a 0.94 lower percentage point financial inclusion gap. This association is much larger than the effects found for reducing gender gaps in employment (0.18 percentage points) and legal discrimination against women (0.36 percentage points).

Our findings highlight the promise of mobile phones to financially include women in FCA countries. However, realizing this potential will require addressing a complex set of barriers faced by many women, especially those living in poverty and in conflict-affected settings. Policies and programs that have addressed these barriers include efforts to close mobile phone gaps, design financial services intentionally for women, eliminate legal discrimination, and establish regulatory and policy frameworks that seek to ensure inclusion. In this paper, we illustrate the efforts that show promise. Ultimately, concerted efforts by governments and private sector companies are required to achieve digital financial inclusion and close the gender gap.

BOX 1

Research in context

Evidence before this study

It is well known that there are persistent gender gaps in financial inclusion, especially in developing countries, that have not closed over time.⁶ This challenge has garnered interest from the private sector as well as policy makers around the world. Financial inclusion is important because of the potential impact on economic productivity and growth, increased resilience, and, not least, the benefits for women's economic empowerment.⁷

Accumulating research—including cross-country quantitative analyses,⁸ country-level micro analyses,⁹ and qualitative studies¹⁰—has investigated the benefits and barriers to women's financial inclusion, mobile phone use, and access to mobile money accounts. These studies have highlighted the potential gains of these technologies, but they have also, in various ways, underlined the impediments to women's use of mobile phones (high cost, adverse norms, security concerns, and digital illiteracy) and digital financial services, or DFS (high cost, illiteracy, misinformation, lack of trust, legal discrimination, and lack of documentation).

The main source of global data on mobile phones and financial inclusion is collected by Gallup and published as part of the Global Findex.¹¹ The Findex contains several questions that can be analyzed to investigate both mobile ownership and access to financial inclusion. The data is available for 144 countries for the years 2011, 2014, and 2017 (and about 174 unique countries from all three years combined). FinScope data includes several similar questions for 23 developing countries, however, generally for one year only.¹²

Added value

To our knowledge, no cross-country empirical work has tested the association between gender gaps in mobile phone usage and financial inclusion. Our analysis considers the role of mobile phone gaps alongside key demographic, economic, and social factors.

Implications of all the available evidence

Our findings, along with existing research, underline that mobile phones can be an important tool in reducing the financial inclusion gap, especially for women who do not work outside the home, have limited mobility, and live in insecure settings. However, more concerted efforts are needed to address gender gaps in mobile phone ownership and usage. The private sector, policy makers, and regulators need to recognize and address key economic and sociocultural constraints to close the mobile phone gap and advance financial inclusion for women.

Introduction

The importance of financial inclusion for expanding women's economic opportunities has been recognized by the UN Secretary-General,¹³ the World Bank,¹⁴ and the broader international community. It is also a core facet of Sustainable Development Goal 5 (gender equality)¹⁵ and a vital component of the Group of Seven (G7) agenda to fight inequality in Africa.¹⁶ Financial inclusion, defined as access to and effective use of a range of appropriate financial services,¹⁷ can enable people to improve their income-earning potential, accumulate savings, and manage financial risk, thereby reducing poverty and advancing economic and human development.¹⁸

Digital financial inclusion can be a tool to accelerate progress toward many of the 2030 Sustainable Development Goals.¹⁹ For women, mobile money accounts can enable more privacy, give them more control over their income, and boost their likelihood of saving.²⁰ Emerging evidence suggests that mobile money can empower women by giving them the confidence and financial independence to strengthen their role as a financial decision-maker individually, in the household, and in the community.²¹ Greater control over assets and financial decision-making can expand women's economic opportunities.²²

Accumulating evidence from a range of countries has found benefits to women and their families from mobile money in terms of well-being and reduced risk of poverty. Women who participated in the M-Pawa mobile savings platform in Tanzania achieved higher levels of saving and borrowing. They were also five percentage points more likely to report being very happy and five percentage points more likely to report that their lives had improved.²³ As one mobile money user in Côte d'Ivoire said, "...Orange Money has saved my life. It's like a hole you can hide something in," referencing to her enhanced ability to save money.²⁴

The private sector plays a major role in advancing digital financial inclusion and closing the gender gap. Although some markets may not appear lucrative for mobile phone companies, GSMA estimates that closing the gender gap in mobile ownership and usage in low- and middle-income countries by 2023 could generate an additional \$140 billion in revenue to the mobile industry.²⁵ The McKinsey Global Institute estimated that digital finance in the developing world could boost GDP by 6 percent by 2025, add 95 million new jobs, and save governments around \$110 billion annually through lower rates of corruption and bribery by encouraging people to move away from cash.²⁶ In Andhra Pradesh, India, request for bribes from officials reportedly decreased by 47 percent when the government switched from cash to smart cards for pension payments.²⁷

There have been major strides in expanding financial inclusion in many countries around the world, and mobile money has helped to accelerate the recent expansion.²⁸ Broadly defined, digital financial services and inclusion is access to financial services via mobile phones and other digital technology. Digital accounts—including mobile money—offer the prospect of financial inclusion in ways that can overcome

mobility constraints and isolation, at lower cost and with greater security and privacy.²⁹ This leads us to focus on mobile phone use, which is increasingly recognized as a core part of people's participation in the economy, society, and politics—and is among the five aspects of inclusion in the Women, Peace, and Security Index.

While the number of people with mobile money accounts has expanded rapidly in recent years, this mode is still only accessed by a very small minority of the world's population. The Global Findex database reports that the share of adults who had mobile money accounts stood at 4 percent in 2017.³⁰

Women still lag behind in financial inclusion, and in access to mobile phones, to varying extents. Globally, only about two-thirds of women own a financial institution account, compared to about three in four men.³¹ While the gap has largely closed in rich countries, our estimates suggest that the gender gap is of the order of 13 percent in developing countries.³²

The gaps are much larger in countries classified as fragile and conflict-affected. In those countries, women are 27 percent less likely than men to own a financial institution account; the gap ranges as high as 70 percent (in Afghanistan) and as low as negative 1 percent (in Myanmar).

Gender gaps in mobile phone access also exist, but are relatively narrower: approximately 9 percent and 17 percent in developing and FCA countries, respectively (Table 1). This implies that digital accounts hold promise as a way to address persistent gaps in financial inclusion. This could be especially promising in FCA countries that also have strong gender norms, such as Yemen, Pakistan, and Afghanistan. According to the latest Global Findex data, in Lebanon, for example, less than one-third of women have a financial account, whereas almost 90 percent have access to a mobile phone.

This paper focuses on the 253 million women residing in the 36 fragile FCA countries (see Appendix Table A for the list of countries).

BOX 2

Key definitions: Mobile ownership and gender gaps

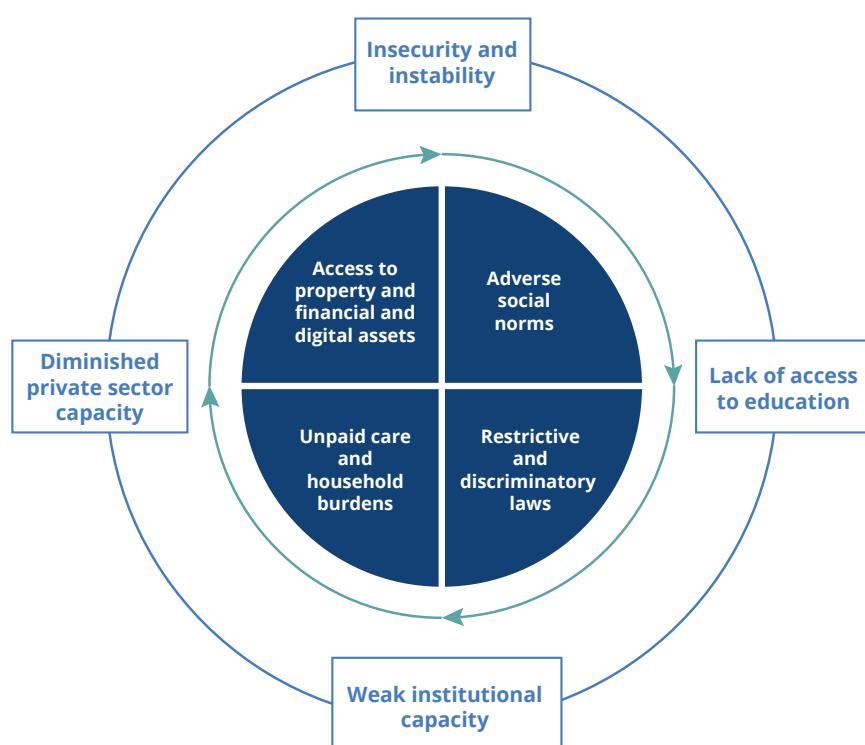
This paper focuses on mobile phones as a route to financial inclusion, referring to both ownership and use. Many women who have access to a mobile phone may not actually own it.

Throughout this report, we calculate gender gaps using the formula:

This paper estimates the gap as the relative difference (the percentage difference) in women's and men's inclusion or exclusion rather than the absolute difference (the simple difference) as reported by the Global Findex. The absolute difference does not sufficiently reveal the extent of the gender gap—especially when the overall inclusion level is low, a small gender gap in absolute terms can hide a significant inequality between women and men. Relative difference more accurately captures the level and disparity of access and facilitates cross-country comparisons.

Constraints on women's financial inclusion loom large in FCA countries on multiple fronts, with fewer opportunities and worse outcomes in countries where conflict is protracted.³³ The obstacles to economic empowerment go beyond the adverse norms and legal barriers that women face more generally, as documented by the UN Secretary-General's High-Level Panel on Women's Economic Empowerment. Insecurity and instability, lack of access to education, weak institutional capacity, and lack of private sector investment exacerbate the constraints to women's paid work in FCA contexts. These are also factors that can directly impact women's inclusion in financial systems, as illustrated in Figure 1.

Figure 1: Factors that constrain women's economic opportunities in fragile and conflict-affected countries



Source: Authors, building on Jeni Klugman and Laura Tyson, 2016, *Report of the UN Secretary General's High Level Panel on Women's Economic Empowerment*, Georgetown Institute for Women, Peace and Security and the Peace Research Institute Oslo, 2017, *Women, Peace and Security 2017/18: Tracking Sustainable Peace through Inclusion, Justice, and Security for Women* (Washington, DC: GIWPS and PRIO)

The paper is structured as follows: The next section outlines key empirical facts that motivate our focus. Additionally, it reviews existing evidence about what drives the financial inclusion and mobile gender gaps, especially in developing and FCA countries, and discusses how closing mobile phone gaps could expand financial inclusion. Section 3 adds insights through new quantitative analysis across 174 countries. This leads to Section 4, which considers policies and programs that have successfully addressed barriers and advanced women's financial inclusion, and a brief concluding section.

Financial Inclusion in a Digital World

Financial inclusion has expanded over the past decade, but gender gaps persist, as illustrated in Table 1. Fragile and conflict-affected countries fare worst in terms of gender gaps across most categories, except in ownership of mobile money accounts, where they fare slightly better than developing countries. Across both FCA and developing countries, the smaller gap in mobile access suggests an opportunity to close financial inclusion gaps through digital approaches.

Table 1: Gender gaps across country groups, average and high and low outliers, 2017

	Gender Gaps					Female Levels Global (%)	
	High Income (%)		Developing (%)**		Fragile & Conflict-affected (%)		
Financial Inclusion*	2.3	Saudia Arabia (27.8) Cyprus (-3.1)	13.0	Pakistan (79.7) Philippines (-29.4)	25.7	Afghanistan (68.2) Myanmar (0.1)	65.6
Financial Institution	2.3	Saudia Arabia (27.8) Cyprus (-3.1)	12.9	Pakistan (78.4) Philippines (-26.5)	27.4	Afghanistan (70.3) Myanmar (-1.1)	64.4
Mobile Money	***		49.9	Pakistan (60.9) Lesotho (-19.6)	35.4	Iraq (79.6) Afghanistan (7.1)	6.3
Mobile Ownership/Access****	2.6	Canada (7.4) Latvia (-3.7)	8.7	Pakistan (93.7) Romania (-81.8)	17.4	Afghanistan (37.8) Libya (0)	81.6

Group high



Group low



Note: Negative gaps mean disparity favors women. 44 countries in high-income group; 81 countries in developing country group except mobile account (61); and 18 countries in FCA group, except 13 for mobile account. For definitions, see Glossary. For 2011 and 2014 gaps, see Annex Table B.

143 countries globally for all groups except mobile money accounts, for which we have data on 77 countries.

* Financial inclusion refers to owning a financial institution account and/or a mobile money account.

**Developing countries exclude FCA countries so as to avoid double counting.

***NA. Data available for only three high-income countries in the mobile money account category.

**** Mobile access data mostly from 2018 Gallup World Poll database, with 2017 data missing.

Source: Authors' calculations using the Global Findex and Gallup World Poll database.

We turn now to review gendered patterns and barriers to financial inclusion and mobile phone usage.

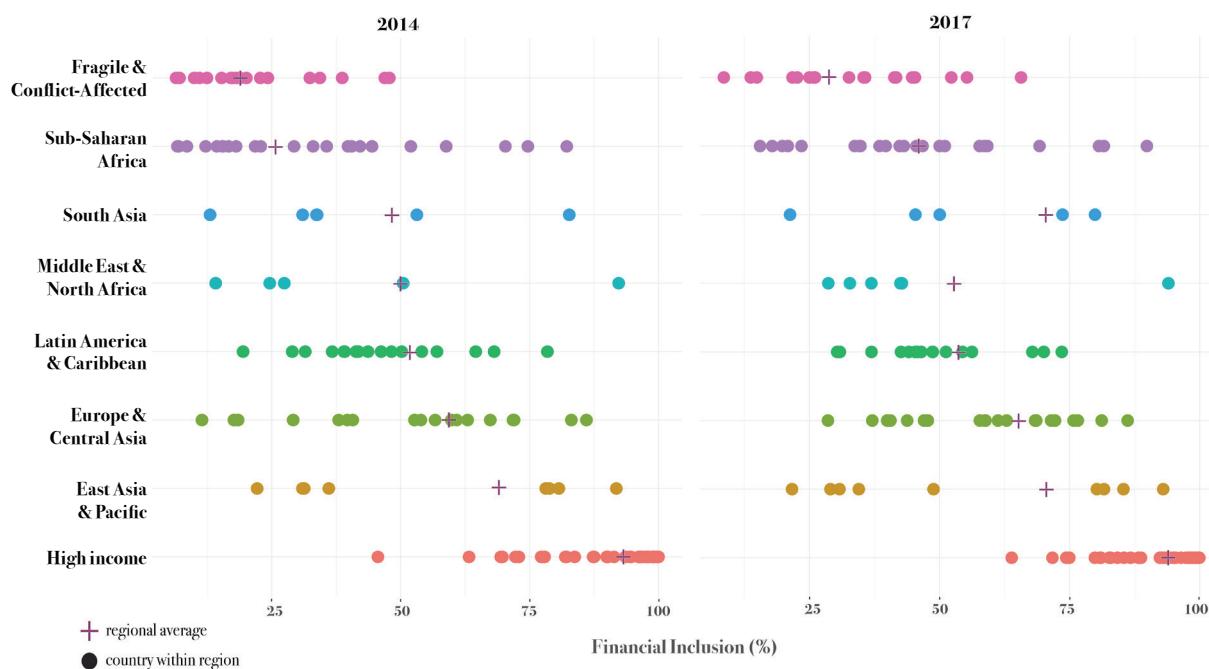
Patterns of gender gaps in financial inclusion

Figure 2 illustrates recent trends in national levels of financial inclusion—including both conventional accounts and digital accounts—with each dot representing a country. The key points that emerge are:

- High-income countries have achieved close to universal access, whereas FCA countries as a group fare the worst.

- Developing country groups and regions show wide dispersion in rates of access. Notably, Europe and Central Asia range from a high of 86 percent in Croatia to a low of 29 percent in Azerbaijan. Similarly, wide distributions exist in South Asia and the Middle East and North Africa. This reminds us that regional averages—as indicated by the crosses in Figure 2—may be misleading.
- Gender gaps are largest in FCA countries, especially for financial institution accounts, with gaps that are approximately double the average for developing countries, and more than ten times the gap in high-income countries (as shown in Table 1).

Figure 2: Financial inclusion has expanded in recent years, but fragile and conflict-affected countries fare worst among regions



Source: Authors' calculations using Global Findex database.

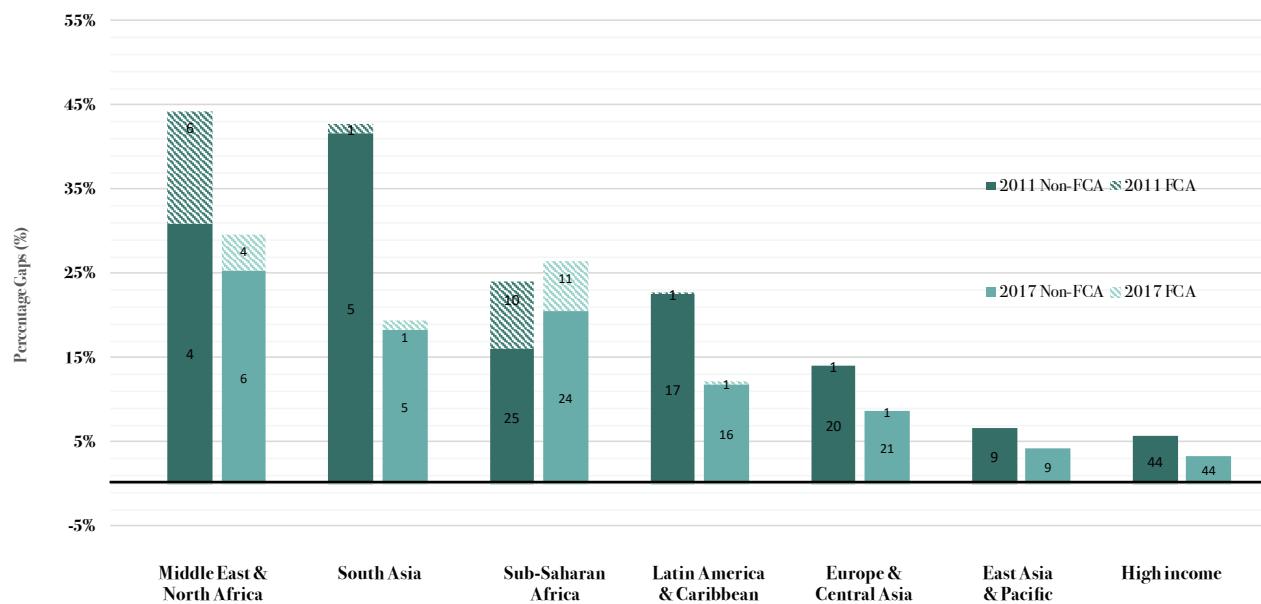
Note: Countries in fragile and conflict-affected group not shown in the other regions.

Gender gaps in financial inclusion are largest in the Middle East and North Africa, close to 30 percent. This region includes four FCA countries—Iraq, Lebanon, Libya, and the West Bank and Gaza—for which we have data (Figure 3). Sub-Saharan Africa had the next highest gender gap in financial inclusion in 2017.

Going beyond regional averages, Figure 4 shows countries where the gender gaps in financial inclusion are largest (represented as the darkest countries on the map). Outliers include Afghanistan, Pakistan, and Yemen.

Interestingly, there are also several countries where women are more likely to own financial or mobile money accounts than men, namely, Argentina, Indonesia, and the Philippines.

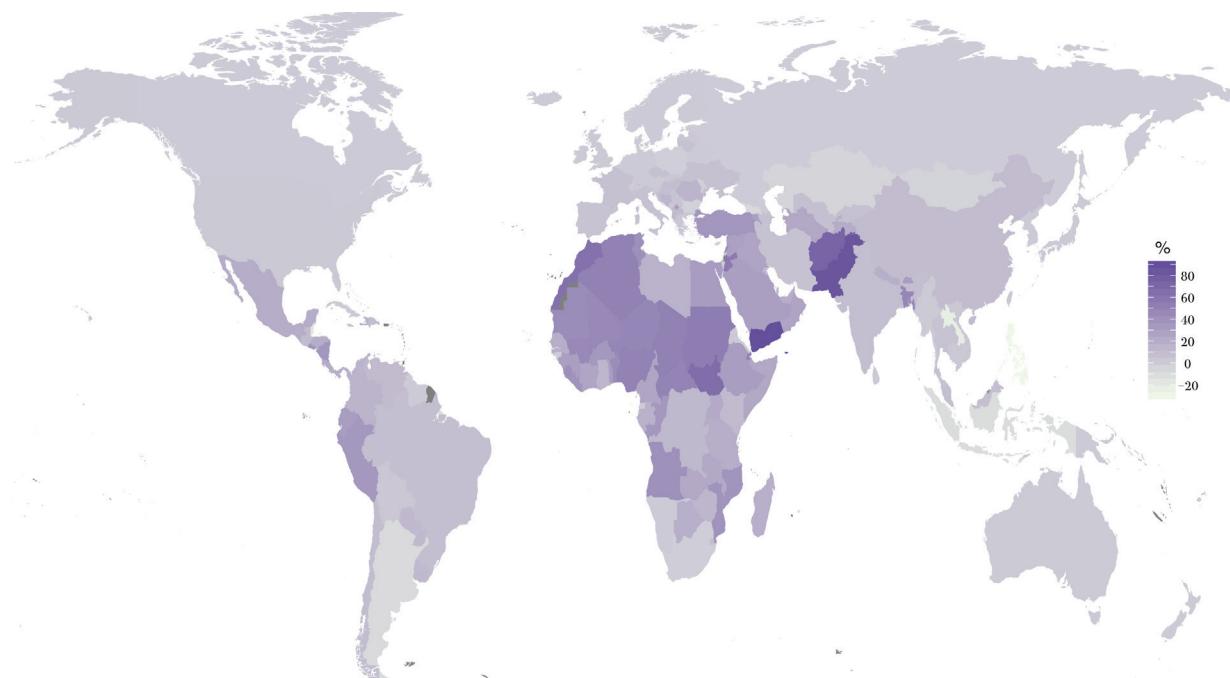
Figure 3: Gender gaps in financial inclusion are highest in the Middle East and North Africa



Source: Authors' calculations using Global Findex database.

Note: Numbers within bars represent the number of countries within each region.

Figure 4: A global map of gender gaps in financial inclusion



Source: Authors' calculations using Global Findex database.

Note: Data is based on question asking whether male or female respondent has any account (includes both financial and mobile money)

Laws, rules, and norms restrict women's ownership of financial accounts

A key reason why gender gaps arise and persist lies in institutions and norms that shape the spaces in which women live, work, and interact.³⁴ These spaces can also restrict women's ownership of financial accounts. For example, in a handful of countries—such as Guinea-Bissau, Chad, and Niger—married women are not allowed to open a bank account in the same way as a married man.³⁵

Restrictive “know your customer” (KYC) requirements can mean that women, who are more likely to lack appropriate documentation, find it difficult to access the financial system.³⁶ Elefante and Hanmer note various types of legal discrimination that women face in obtaining birth certificates, national ID cards, and passports.³⁷ In Saudi Arabia, for example, women must be accompanied by a male guardian and need the signature of that guardian as well as their passport or two women witnesses to prove their identity when applying for a national ID, which is not the case for men.³⁸

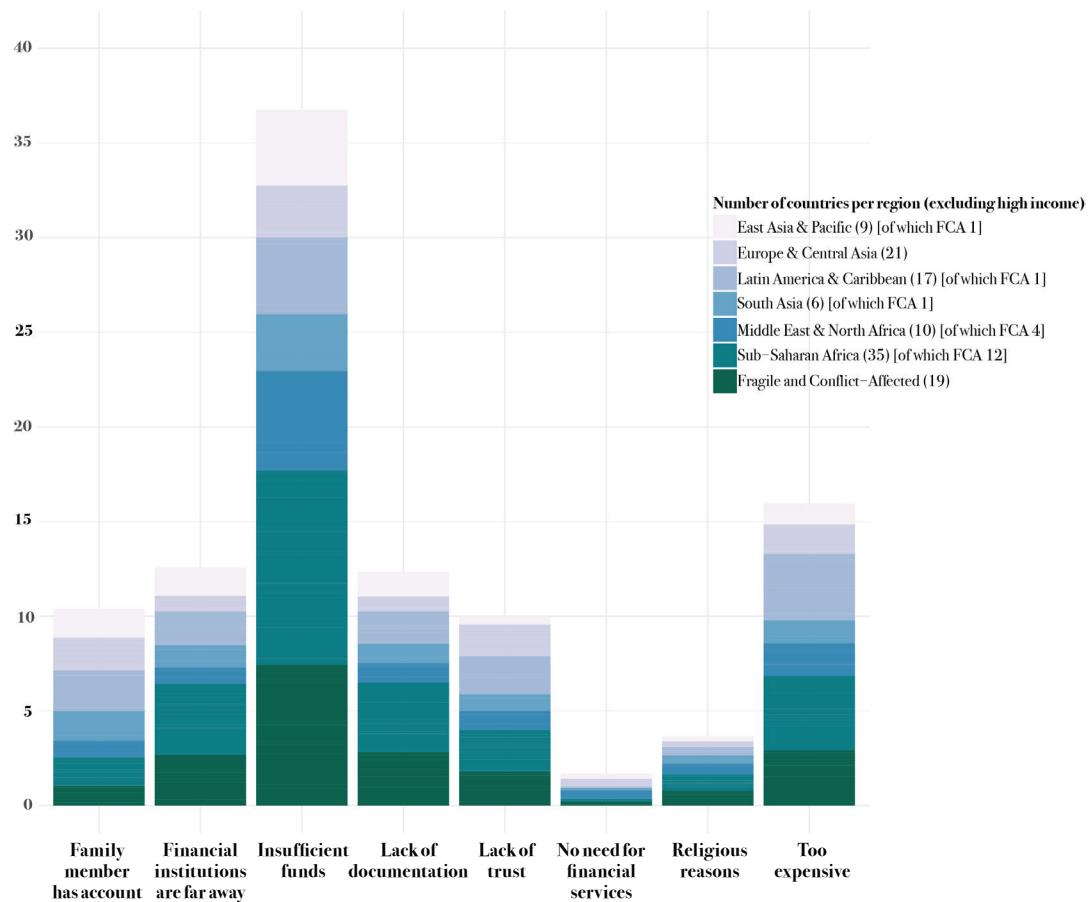
Social norms that restrict women's work outside the home can be a major barrier to earning an income and saving money. For example, almost three quarters of Pakistani men do not think it is acceptable for women to work outside the home if they want to.³⁹ Moreover, the allocation of childcare responsibilities often means that women need to stay at home or work fewer hours or for lower pay.⁴⁰

Women's World Banking has noted that poor women often do not save in banks because of irregular income, the inconvenience of going to a bank (including lengthy and costly travel), time constraints, as well as the perception of banks as irrelevant.⁴¹ It is reported that some low-income women do not see the benefits of formal savings products and are deterred by perceptions of high fees.⁴²

The top reason cited by people in developing and FCA countries for not owning an account (financial or mobile money) is insufficient funds, followed by the costs of accounts (Figure 5). This is consistent with other evidence. In Nigeria, for example, the Consultative Group to Assist the Poor (CGAP) notes five key reasons why adults don't have a bank account: no job or an irregular income, expensive financial services, lack of financial literacy, lack of trust, lack of documentation, and limited physical access.⁴³ In a baseline survey among participants in a social protection program in Colombia (96 percent of whom were women) only 6 percent of respondents said they would borrow from a financial institution in the case of an emergency, while 56 percent said they would borrow from family or friends.⁴⁴

These challenges also present an opportunity to bring people into the financial system via digital accounts. Digital financial services can enable access to payments, savings accounts, credit, insurance, and other financial products. Especially where traditional bank branches are sparse, mobile phones can be a route to overcome the lack of financial infrastructure⁴⁵ and reduce travel time and opportunity costs for individuals.⁴⁶

Figure 5: Insufficient funds and cost of accounts are the top reasons cited for not having a financial institution account, 2017



Source: Authors' calculations using Global Findex database.

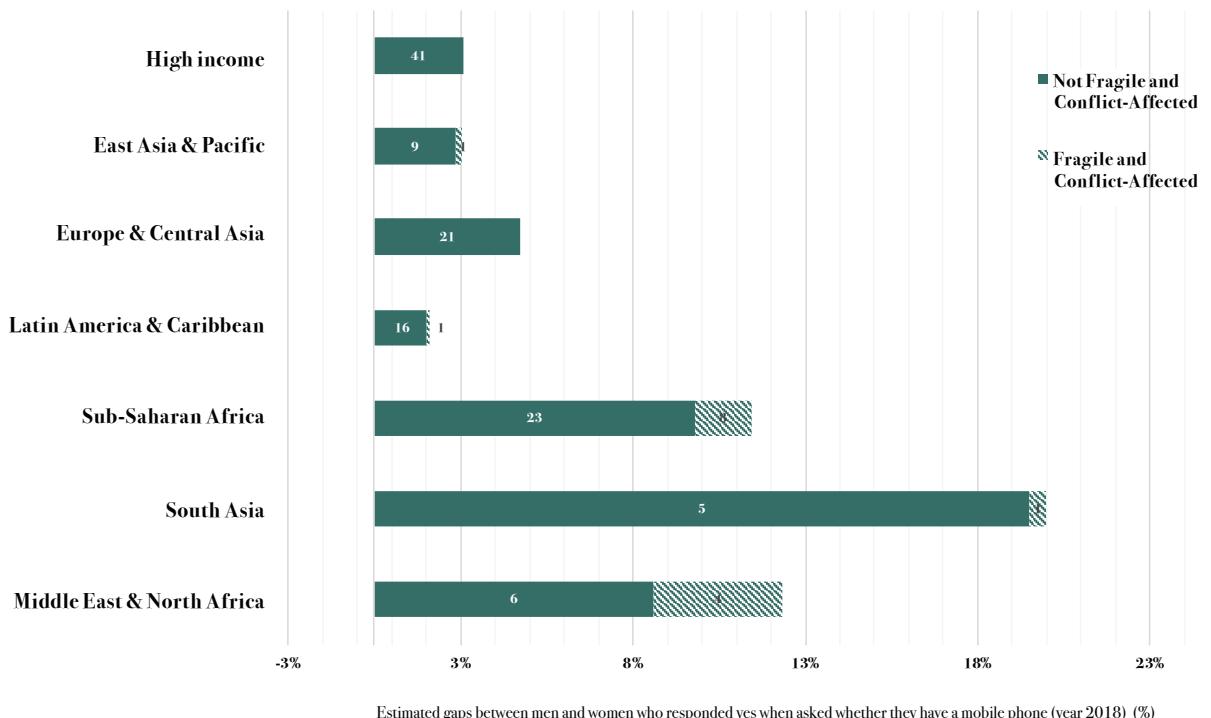
Note: Regional averages are population weighted.

The gender gap in mobile phones

Women lag behind men in access to mobile phones, although to a lesser extent than in financial inclusion. Table 1 shows that the gap is 9 percent in developing countries and nearly double that rate, 17 percent, in FCA countries (though still much less than the gender gap in financial inclusion).⁴⁷ While women's access to mobile phones surpasses their ownership of financial institution accounts by 16 percentage points globally, but only about 1 in 17 women own a mobile money account.

South Asia has the largest gender gap in mobile access: almost 20 percent regionally (Figure 6) and ranging as high as 61 percent in Pakistan according to the Global Findex. The figures are comparable with the GSMA's recent findings.⁴⁸ In sub-Saharan Africa, about one-third of the population lives in areas that are not yet covered by 3G+ networks, although 2018 saw a significant expansion of mobile coverage, from 63 to 70 percent of the population.⁴⁹ GSMA reports multiple barriers to mobile access for women: cost, social norms, lack of awareness, illiteracy (digital and otherwise), safety concerns, network quality and coverage, and lack of trust toward

Figure 6: Regional gender gaps in mobile access and ownership are highest in South Asia, 2018



Source: Authors' calculations using Global Findex database.

Note: Numbers within bars represent the number of countries.

operators and agents.⁵⁰ Here, we review the barriers, focusing on literacy, cost, and social norms.

Lack of literacy and unequal access

Women are less likely than men to be literate. The global literacy rate for women ages 15 and above in 2016 was 83 percent, compared to 90 percent for men.⁵¹ In FCA countries, the gap is larger: women's literacy rate stood at 54 percent in 2016 compared to 70 percent for men, and the disparity is even worse for poor women.

In Pakistan, for example, the literacy rate among poor women is only 35 percent (beneficiaries of the Benazir Income Support Programme, a federal poverty-reduction program in Pakistan, had even lower literacy rates, of 9 percent). The gender gap in access to mobile phones is 15 percentage points, although only half as many women (39 percent) as men *owned* a phone. Among the reasons cited by Pakistani women for not owning a mobile phone, the highest share (38 percent) cited reading and writing difficulties as the biggest barrier.⁵²

While education gaps have been closing over time, and the global gender gap was approximately 3 percent among youth aged 15 to 24 in 2016,⁵³ higher gaps among adult cohorts persist.

In Africa, higher rates of financial inclusion are associated with higher levels of education, as well as with being male, richer, and older.⁵⁴ Educational achievement appears to be correlated with women's capacity to use digital devices, which typically requires at least basic levels of literacy and numeracy.

When it comes to mobile phone use, poorly designed services or handsets in unfamiliar languages can be especially challenging for women. Lower rates of education for women may mean that they are not familiar with English, which is often the primary language used in basic handsets. A potential mobile phone adopter in Sri Lanka, for example, explained her hesitation as follows: "If you don't have proper English, it can be a barrier....Everything is in English. It would be good if there's something in Sinhala."⁵⁵

High device and internet costs

The costs of mobile phones can be prohibitive for people living in poverty. Women cite device cost as one of the key barriers to obtaining a mobile phone in the GSMA mobile gender gap reports. Women often earn less than men, which diminishes their ability to afford mobile phones and broadband access.⁵⁶

Research by the Alliance for Affordable Internet has shown that women living in poverty and in rural areas are least able to access the internet because of affordability.⁵⁷ Tcheng et al. noted that in Ethiopia, Namibia, and Zambia, households can spend up to 10 percent of their monthly income on telephone expenses, more than triple the average in developed countries.⁵⁸

Security

Safety concerns about mobile use fall into three broad categories: physical threats (e.g., harassment at points of sale and gender-based violence), voice and SMS harassment, and various online threats via mobile internet.⁵⁹ Such concerns are likely to vary across different groups of women, depending on location, income level, education, age, and so on. A 2015 GSMA study found that in Egypt, India, and Jordan young women, particularly from rural areas, often have their mobile access and use monitored and controlled by their families; this was said to protect them from harassment and to control their communication with men outside the immediate family.⁶⁰ In Bangladesh and Pakistan, among other countries, operators have noted a tendency for men to register on behalf of women, reportedly due to women's fear of harassment.⁶¹

Social norms

Norms and perceptions about the appropriateness of women's use of mobile phones vary. In some countries, including Niger and India, women, especially young unmarried women, may be regarded as using mobile phones only to seduce men, whereas men are perceived to use phones for work.⁶² A recent report explores young women's access to and usage of mobile phones through 25 country case studies in both developed and developing regions and finds that, even where girls have access to phones, they may face social stigma and barriers to use.⁶³ In India, the Philippines, and Malawi, community members label girls as "bad," question their motives, and worry about safety and targeted harassment when they see young women using a mobile phone.

Recent analysis about constraints to women's mobile phone adoption in India highlights two key barriers: perceptions that mobile phones are a risk to women's reputation and the idea that caregiving takes precedence over phone use for women. In one field site, a village in Madhya Pradesh, a member of a local male committee spoke about sanctions instituted for families who allow their daughters to own phones: "Unmarried girls should not have a phone. This committee will charge a fine of 5,000 (rupees) on the first offense, 11,000 (rupees) on the second offense, and outcast the household on the third offense."⁶⁴

This fear of being outcast by society is felt by the family and by the women themselves. An unmarried woman in Maharashtra, for example, expressed discomfort with using a phone for social media because it might hurt her marriage prospects.⁶⁵ In Bangladesh and Malawi, on the other hand, girls reportedly felt safer owning a mobile phone—the justification being that they’re only a phone call away from an emergency contact.⁶⁶ However, even in these contexts, safety remains a concern when it comes to receiving unwanted calls or text messages from men.

Even where women have mobile phones, they may not access mobile money services. In Ghana, for example, the gender gap in mobile phone access is approximately 15 percent,⁶⁷ whereas the gaps in financial account ownership and mobile money are 17 and 24 percent, respectively. Opportunity International, a global microfinance loan provider, found that although almost two-thirds of their Ghanaian customer base are women, fewer than half were registered for mobile banking. The main challenges identified by women to having an account were not owning their own mobile phone, low levels of literacy and exposure to technologies, and lack of confidence in dealing with new technology-related products or services.⁶⁸

Mobile phones: An opportunity to close the gaps in financial inclusion

Globally, almost 300 million fewer women than men have accounts at financial institutions. The vast majority of these women are living in developing countries (because the total population is much larger), while the rates of exclusion are highest in FCA countries. With the number of refugees at an all-time high, digital financial inclusion can be a critical facility to ensure the financial stability of some of the world’s most vulnerable populations (see Box 3).

In Table 2, we estimate that about 935 million additional women would benefit if universal financial inclusion were achieved of whom 900 million live in developing and FCA countries.

Table 2: Number of women who would gain from universal financial inclusion
Women (aged 15+) in millions, 2017

	High Income	Developing**	Fragile & Conflict-affected	Row total
Total Female Population (+15)	497	2,113	113	2,723
Female Population (+15) Financially Included*	461	1,297	29	1,787
Additional number of women if universal financial inclusion is achieved	35	816	84	935

Note: 44 countries in high-income group; 81 countries in developing-country group; and 18 countries in FCA group. For definitions, see Glossary.

* Financial inclusion refers to owning a financial institution account and/or a mobile money account.

**Developing countries exclude FCA countries so as to avoid double counting.

Source: Authors’ calculations using the Global Findex and UN World Population Prospects.

The estimated magnitude of the gender gaps—reflecting how many women are financially excluded, compared to men—in high-income, developing, and FCA countries is shown in Table 3. Note that these estimates only close gender gaps and would not amount to universal inclusion of women and men.

Table 3: Millions of women would benefit from closing gender gaps in financial inclusion
Estimated additional number of women (aged 15+) included if gender gaps were closed (in millions), 2017

	High Income	Developing**	Fragile & Conflict-affected	Row total
Financial inclusion*	9	169	10	187
Financial institution account	9	157	8	174
Mobile money account	***	55	5	60

Note: Estimates above are absolute numbers derived using the formula [(male % - female %) * female population]. 44 countries in high-income group, 81 countries in developing-country group except mobile money account (61); and 18 countries in FCA group, except 13 for mobile account. For definitions, see Glossary.

* Financial inclusion refers to owning a financial institution account and/or a mobile money account.

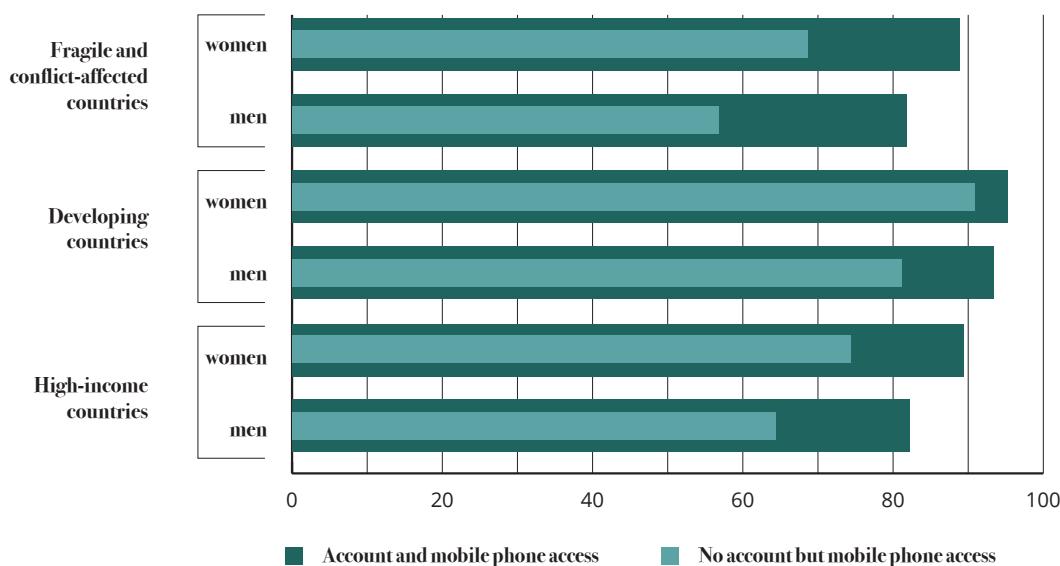
**Developing countries exclude FCA countries so as to avoid double counting.

***NA. Data for only three high-income countries available in the mobile money account category.

Source: Authors' calculations using the Global Findex and UN World Population Prospects.

Figure 7 shows those who have access to an account (either financial institution and/or mobile money) and a mobile phone, versus those who do not have access to an account but do use a mobile phone. While access to an account is higher among mobile users, many of those who do not have an account use a mobile phone, suggesting a major opportunity to boost financial inclusion. In FCA countries, for example, about 82 percent of women have access to both financial accounts and mobile phones, while 57 percent have access to only a mobile phone - which suggests an opportunity to close gaps.

Figure 7: Access to mobile phones among those with accounts versus those without, 2017



Source: Calculated using Global Findex microdata, 2017.

Note: Population weighted. 44 countries in high-income group, 99 countries in developing-country group (includes FCA countries), and 18 countries in FCA group.

We now turn to an empirical investigation of the relationship between gaps in mobile phones and in financial inclusion.

BOX 3

Digital financial inclusion of refugees

The number of refugees has been at an all-time high in recent years (more than 20 million in 2018).^a Of the top 30 refugee-hosting countries, where about 78 percent of refugees are, 23 are developing. Many refugees, especially women, are excluded from paid work.^b

Digital financial inclusion of refugees allows easier international money transfers—a critical facility that lets refugees to send or receive remittances across borders.^c There is also increasing evidence that digital financial inclusion is beneficial to humanitarian agencies and to mobile network operators (MNOs). On the humanitarian side, the shift from in-kind payments to cash transfers and vouchers provides flexibility and allows the agencies to reach the affected populations faster,^d although the lack of viable physical and electronic payment infrastructure may pose constraints.^e There also appears to be a good business case. One example is Turkcell, an MNO in Turkey, which reports that refugees spend more on data and overseas calls than Turkish nationals do.^f

A recent study by GSMA surveying refugees in Uganda, Rwanda, and Jordan found that mobile money use is high among refugees in both Uganda and Rwanda (44 and 59 percent respectively) but very low in Jordan (1 percent). Interestingly, mobile money use is higher among the refugee population in Kiziba (Rwanda) than the host community. At the same time, gender gaps in mobile money use prevail among mobile phone users in both Uganda and Rwanda (25 and 9 percent respectively). The most commonly used mobile money services among refugees in both areas were person-to-person (P2P) transfers, top-up for additional talk time, and international remittance transfers.^g

Refugees face many of the same barriers that are experienced by the rural poor and other forcibly displaced populations (FDPs): lack of literacy (both traditional as well as digital), lack of legal documentation, government imposed mobile-money tax, network issues, trust in the mobile-money service, and lack of income.^h Women face additional barriers in the form of restrictive sociocultural norms.ⁱ A positive recent example is the effort by the United Nations High Commissioner for Refugees (UNHCR) to create a digital identity for over quarter of a million Rohingya refugees who fled to Cox's Bazar in Bangladesh. This will not only improve accuracy of data on refugees but will also help families to reunite, especially after natural disasters, which that area is highly susceptible to.

Refugees are often forgotten in national policies and may face unfavorable regulations.^j Coordination and alignment among the national governments, humanitarian organizations, development cooperation agencies, and private sector actors may be weak. A 20-country analysis of the state of legal and regulatory ID-related barriers affecting populations of concern found that only ten of the countries allowed refugees to have legal access to mobile connectivity without restrictions, four allowed legal access to bank accounts, and six allowed legal access to mobile money. Access is much more difficult for asylum seekers in the same countries.^k

A series of studies and tools—by GSMA, International Rescue Committee, Electronic Cash Transfer Learning Action Network, and FinDev Gateway—have captured some of the barriers to and possible solutions for digital financial inclusion for refugees,

which will help to inform policy-making targeted at those groups.

FinDev Gateway,^l drawing on emerging evidence, concludes that there is no need to develop specific financial products for refugees. However, providers need to reach out to refugees in the area with already existing products, and nonfinancial services—such as financial education and business-management support—could be considered a relevant and beneficial addition to the providers' menu of services.^m

A recent policy paper by the Global Partnership for Financial Inclusion (GPFI), based on a consultative process led by the German G20 presidency, lays out three priority areas to enhance financial inclusion of refugees: improving coordination and collaboration through global dialogue and strategic partnership among sectors;ⁿ addressing knowledge and evidence gaps through data and targeted research; and embedding FDP-inclusive policy frameworks in existing financial inclusion efforts.

While digitizing cash transfers is an important innovation, the challenge of digital financial inclusion for FDPs requires addressing the more context-specific barriers. Specific needs differ among groups and between men and women and call for the design of targeted policies and programs.

- a UNHCR Population Statistics (2018). Total number of populations of concern.
- b Jeni Klugman and Raiyan Kabir, *Unlocking Refugee Women's Potential: Closing Economic Gaps to Benefit All* (Washington, D.C., and New York: GIWPS and IRC, 2019).
- c *Financial Inclusion of Forcibly Displaced Persons* (Bonn, Germany: BMZ, 2017); *The Importance of Mobile for Refugees: A Landscape of New Services and Approaches* (London: GSMA, 2017); However, remittances may not be the best entry point for DFS (due to low usage) as noted in Nadine Chehade, Antoine Navarro, and Danielle Sobol, *Remittances and Financial Inclusion: A Demand-Side Analysis of Low-Income Jordanians and Syrian Refugees in Jordan* (Washington, D.C.: CGAP, 2017), www.cgap.org/sites/default/files/researches/documents/Working-Paper-Remittances-and-Financial-Inclusion-Dec-2017.pdf.

d Betts et al. note that while many refugees do receive humanitarian assistance as a source of income, most rely on other social relationships, aspire to receive other forms of support, or, in many cases, create sustainable livelihood opportunities for themselves. ; A. Betts, L. Bloom, J. Kaplan and N. Omata, *Refugee Economies: Rethinking Popular Assumptions* (Oxford, UK: University of Oxford, Humanitarian Innovation Project, July 2014).

e *Seeking Solutions: New Roles for Technology in Cash and Voucher Programs* (Oxford, UK: Electronic Cash Transfer Learning Action Network, 2015).

f *Importance of Mobile for Refugees*.

g Jenny Casswell, *The digital lives of refugees: How displaced populations use mobile phones and what gets in the way* (London: GSMA, 2019).

h Daphne Jayasinghe, *Seven Steps to Scaling Cash Relief: Driving Outcomes and Efficiency* (London: IRC, 2018). ; Caswell, *The digital lives of refugees*.

i Jayasinghe, *Seven Steps; Financial Inclusion of Forcibly Displaced Persons*.

j *Financial Inclusion of Forcibly Displaced Persons*; , Catherine Bellamy et al., *The Lives and Livelihoods of Syrian Refugees: A Study of Refugee Perspectives and Their Institutional Environment in Turkey and Jordan* (London: Overseas Development Institute, 2017).

k Aaron Martin, *Displaced and Disconnected* (Geneva, Switzerland: UNHCR, 2018).

l FinDev Gateway, previously known as Microfinance Gateway, is CGAP's independent knowledge platform where the global financial inclusion community comes together to share lessons and ideas on making financial services work for poor people.

m Micol Pistelli and Philippe Guichandut, "Getting It Right: Providing Financial Services to Refugees," FinDev Gateway (blog), October 2018, www.findevgateway.org/blog/2018/oct/getting-it-right-providing-financial-services-refugees.

n "Humanitarian Connectivity Charter," Mobile for Development, GSMA, www.gsma.com/mobilefordevelopment/mobile-for-humanitarian-innovation/humanitarian-connectivity-charter/.

Cross-country analysis: Investigating the links between gender gaps in financial inclusion and mobile phones

The benefits of financial inclusion have motivated several studies of its drivers. Both Allen et al.⁶⁹ and Demirgürç-Kunt and Klapper⁷⁰ have found that the level of national income explains a significant share of the variation in rates of financial inclusion across countries. A recent International Monetary Fund (IMF) study examines drivers of financial inclusion at both the individual and national level and finds a robust negative relationship between being female and being financially included; the study highlights legal discrimination, lack of protection from harassment, and restrictive gender norms as possible explanatory factors.⁷¹ Allen and others also find that greater ownership and use of accounts is associated with a more conducive environment for accessing financial services, such as lower account costs and greater proximity to financial intermediaries.⁷² We contribute to this literature with a focus on reducing gender inequality.

An overview of gender gaps in financial inclusion and mobile phone use across the 144 countries for which we have data for 2017 shows a positive correlation (0.6801): a smaller gap in mobile phone use is associated with a smaller gap financial inclusion, and vice versa (Figure 8). This association does not demonstrate causality. The results, nonetheless, suggest that mobile phone access might help advance financial inclusion, especially where gaps are large.

Method and findings

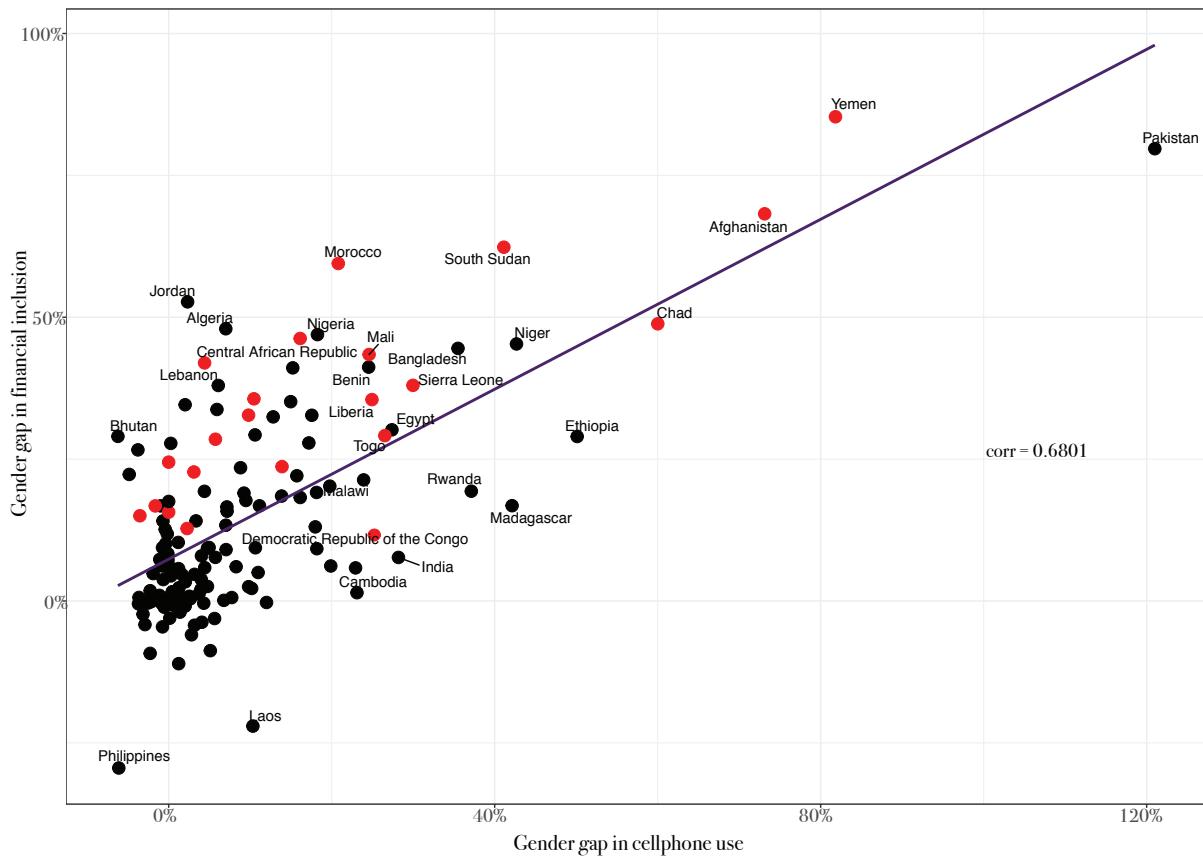
We undertook regression analysis for 174 countries. The country-level data is the most recent available and population weighted, unless noted otherwise. Internationally comparable data sources—namely, the World Bank’s Global Findex dataset, World Development Indicators, United Nations Educational, Scientific, and Cultural Organization (UNESCO), and GIWPS’s Women, Peace, and Security Index—are utilized.

Our framework is informed by studies that have highlighted the drivers of women’s financial inclusion: specifically, women’s land ownership,⁷³ female entrepreneurship,⁷⁴ legal discrimination against women,⁷⁵ intimate partner violence,⁷⁶ female economic empowerment,⁷⁷ and GDP, among other factors.

We hypothesize that gender gaps on the digital front will be an important variable explaining genders gaps in financial inclusion, alongside other key dimensions of gender inequality in education, employment, discriminatory laws and norms, and so on.

To empirically estimate the effect of the mobile phone gender gap on the gender gap in financial inclusion, we use simple ordinary least squares (OLS) regressions.

Figure 8: Gender gaps in financial inclusion and mobile phone use are positively correlated
Fragile and conflict-affected countries reveal larger gender gaps in financial inclusion than in mobile phone use



Source: Authors' calculations using the Global Findex database.

In our framework, y , the dependent variable, is the gender gap in financial inclusion, and our primary independent variable, x_1 , is the mobile phone gap. All measures are at the national level and for the most recent year available. The variable definitions—in addition to those outlined in the Glossary—are summarized together with sources in Annex Table C.

To investigate our hypothesis, the model includes a set of factors expected to influence women's financial inclusion: the gender gap in employment as well as education, a direct measure of male attitudes toward women's work, legal discrimination, the prevalence of lifetime violence, GDP (logged per capita), the perception of feeling safe in the community, and organized violence (indicating the presence of conflict in the country).

$$\text{Financial Inclusion Gap}_i = \beta_0 + \beta_1 \text{Mobile Phone Gap}_i + \beta_2 \text{Economic}_i + \beta_3 \text{Norms\&Institutions}_i + \beta_4 \text{FCA} + \varepsilon_i$$

We run a series of simple tests to determine the best-fit model—variance inflation factor (VIF) and pairwise correlation tests to check for multicollinearity among our independent variables and adjusted r-squares for an overall model fit—and find that the results (bottom of Table 4 and Annex Table E) are well within range. Our

best-fit model (Table 4, Model 3) includes employment gaps between men and women, legal discrimination against women, women's perception of community safety, and the extent to which the country experiences organized violence.

While it is not possible to demonstrate causality with this type of cross-country analysis, the emerging patterns are suggestive. The key results are as follows (details are presented in Table 4):

- Gender gaps in access to mobile phones are the most important factor associated with gender gaps in financial inclusion. There is a significant association between gender gaps in mobile phones and financial inclusion. Specifically, a one percentage point lower mobile phone gap between men and women is associated with a 0.94 percentage point lower financial inclusion gap, holding all else constant (Table 4, Model 3). At the same time, we note that alternate models with additional controls produce smaller estimates for gender gaps in mobile phone access (0.46 and 0.77 for Models 1 and 2 in Table 4).⁷⁸
- Gender gaps in employment are also significant. Closing the employment gap by one percentage point is associated with a 0.18 percentage point lower financial inclusion gap.
- Women's sense of safety in the community also influences the financial inclusion gap. In our preferred model, feeling safer is likely to reduce the financial inclusion gap, albeit to a much smaller extent than the other factors found to be significant.
- Living in a fragile or conflict-affected country, where organized violence is widespread,⁷⁹ is associated with a 0.44 percentage point larger financial inclusion gap. This corresponds to the expectation that weak security environments are especially difficult for women.
- The legal discrimination indicator also plays a significant role: where women face higher levels of legal discrimination, the financial inclusion gap is likely to be greater. This is in line with Demirgür-Kunt, Klapper, and Singer,⁸⁰ who find that in countries where women face legal discrimination in their ability to work, to choose where to live, and to receive inheritance, they are less likely to own an account, relative to men, as well as to save and borrow.

Several other indicators do not emerge as significant. However, while rates of intimate partner violence against women and norms about the acceptability of women working are not significant in our regressions, both factors have been associated with access to finance for women in other studies. Income is not significant in explaining the gender gap in most of our models, which may be because income is more important in explaining overall levels of access to financial services, rather than the gender gap.

While education is significant in some models, we do not include it in our best-fit model. Targeted financial education programs may play an important role in addressing gaps,⁸¹ but we lack cross-country data on these programs.

Gender gaps in access to mobile phones are the most important factor associated with gender gaps in financial inclusion.

As elsewhere in this paper, our analysis calculates the gap as the relative difference (i.e., the percentage difference) in financial inclusion rather than the absolute difference (i.e., the simple difference). For simplicity and robustness checks, we run similar regressions using absolute gaps and find that estimating our best-fit model using the absolute differences has similar results—that is, coefficients on mobile phone gaps, employment gaps, and legal discrimination are significant (see Annex Table E).

Overall, the cross-country analysis suggests that closing gaps in mobile phone use could be a powerful way to expand women's financial inclusion, especially in FCA contexts. We now turn to consider the evidence about policies and programs in light of this picture.

Table 4: Regression analysis: The effect of the mobile phone gap on the financial inclusion gap

Dependent variable: Financial inclusion gap			
	Model 1	Model 2	Model 3 (best fit)
<i>Key independent variable</i>			
Mobile phone gap	0.458* (0.204)	0.768*** (0.135)	0.936*** (0.114)
<i>Controls</i>			
GDP per capita (logged)	-0.608 (1.146)	-2.653** (0.826)	
Employment gap	0.275** (0.0937)	0.217** (0.0789)	0.175* (0.0771)
Education gap	0.303** (0.0934)		
No. of women in parliament	0.0897 (0.115)		
Lifetime violence	0.0384 (0.125)		
Legal discrimination	0.189 (0.133)	0.249* (0.125)	0.357** (0.114)
Organized violence	0.524 (0.940)	0.409 (0.218)	0.438* (0.221)
Community safety as perceived by women			-0.117* (0.0589)
Constant	-4.178 (13.70)	20.07* (9.309)	1.218 (5.208)
Observations	116	144	144
Adjusted r-squares	0.54	0.56	0.55
Mean vif	1.65	1.50	1.23
Pairwise correlation	above 0.5 between some independent variables	above 0.5 between some independent variables	below 0.4 for between all independent variables
Robust standard errors in parentheses *p<0.05, **p<0.01, ***p<0.001			

Policies and programs: What can work to advance women's financial inclusion?

Gender inequality needs to be addressed on multiple fronts to tackle the exclusion of women from financial services. Here, we focus on the mobile phone gap alongside economic factors and sociocultural norms. Of course, what is appropriate will depend very much on the country context.

A cross-cutting challenge is the need to recognize and change the social norms that restrict women's autonomy and opportunities. Broadly speaking, interventions that seek to address these constraints may be either *norm aware*—that is, working within the existing social norms to address constraints for women,⁸² such as taking on concerns around harassment and making financial access points closer to where women live—or they can seek to *transform norms*, often through direct engagement of the community.⁸³ An example of the latter is CARE's Indashyikirwa (agents of change) program in Rwanda, which tackled adverse norms by working with 1,600 men and women through a couple's curriculum, a five-month course where couples addressed unequal power in their relationships.⁸⁴ Measured gains included about one-fourth of participants becoming community activists for gender equality; randomized controlled trial (RCT) results documented increased joint decision-making over family resources and improved economic empowerment outcomes, as well as reduced risks of intimate partner violence.⁸⁵ Another project conducted by CARE Uganda (and commissioned by the Bill and Melinda Gates Foundation), Digital Sub-Wallets for Increased Financial Empowerment of Women, found that within the first few months of household dialogue training among village savings and loan association members and their partners, joint decision-making over financing increased considerably.⁸⁶

Shifting norms around payments can expand access in mutually reinforcing ways. This appears to have been the story in Kenya's rapid expansion of financial inclusion via M-Pesa and a growing ecosystem via bKash in Bangladesh. As more and more individuals, merchants, and service providers join the digital financial ecosystem, the use of various DFS can become normalized. In Kenya, the share of people with mobile money accounts rose by almost 15 percentage points between 2014 and 2017 (58 to 73 percent), including to 70 percent for women.

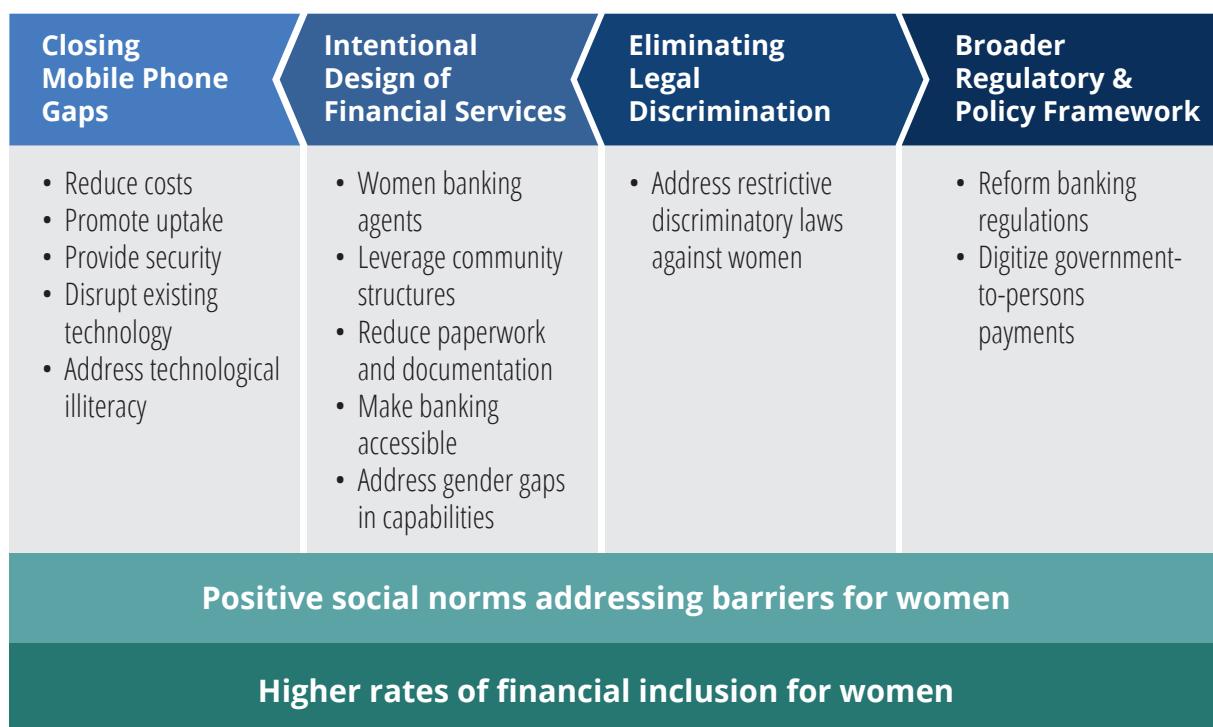
Broadcast media such as radio and television can be a powerful tool for changing social norms and increasing women's agency.⁸⁷ An example comes from Juntos, a Peruvian cash transfer program; an RCT evaluation of a soap opera intervention aiming to improve financial knowledge and behavior among rural beneficiaries found higher bank account balances as a result.⁸⁸

Typically, a single intervention would not suffice to effect change. Multipronged approaches are needed, appropriate to the country context, with norm change being a cross-cutting challenge.

Figure 9 summarizes select policies that can boost rates of financial inclusion for women and illustrates these policies with examples from around the world. This builds on the UN Secretary-General's High-Level Panel on Women's Economic Empowerment and accumulating evidence from other researchers.⁸⁹ It also aligns with the three categories of infrastructure, regulation, and planning outlined by the G7 partnership for Women's Digital Financial Inclusion in Africa, which encourages efforts to expand digital financial inclusion to women, especially in poor and marginalized communities.⁹⁰ Typically, a single intervention would not suffice to effect change. Multipronged approaches are needed, appropriate to the country context, with norm change being a cross-cutting challenge.

While the examples below demonstrate the feasibility of implementing various approaches, including in FCA contexts, evidence of impact is generally scarce. Further investments to test what works are needed to inform the design of effective approaches.

Figure 9: Selected policies that can work to achieve higher rates of financial inclusion for women



Source: Authors' graphic.

Closing gaps in mobile phone use

Experience suggests several promising approaches to close gender gaps in mobile phone use, such as reducing costs, targeting efforts to reach women, enhancing security and privacy, and addressing technological illiteracy.

Reduce the cost of mobile phones and services.

One option is to include offering low-cost handsets with basic internet features. In the case of MaTontine (outlined in Box 4), the ability to access systems through a basic-feature phone facilitated women's participation in the program.

An emergency credit service can be a convenient tool to make calls after SIM credit runs out. This is offered by many providers, including Ooredoo Maldives, Grameen-phone Bangladesh, Vodacom Tanzania, and Vodafone Idea India.⁹¹

A 2017 report by GSMA studies four different companies across Kenya, India, and Rwanda that allow people in rural communities to learn about and buy low-cost smartphones through microfinance groups and mobile money sales agents. One pilot project in northern India aiming to provide smartphones to 3,500 rural and peri-urban women was open to existing clients of a microfinance group, thus expanding the knowledge and reach of the availability of cheap smartphones.⁹² Although evidence of impact is not available, it is reported that the project enabled women to access smartphones by providing them with loans.⁹³

For countries where taxes account for more than 3.5 percent of consumers' incomes, a reform of taxation structures could be an important strategy to improve mobile connectivity, for example, by eliminating sector-specific taxation, reducing any complexity and uncertainty in the overall tax framework, and introducing import duty exceptions on mobile infrastructure equipment.⁹⁴ High tax rates can affect affordability. In Guinea, for example, sector-specific taxes were as high as 31 percent. The UN's Broadband Commission recently established the "1 for 2" affordability target, which requires that one gigabyte of data cost less than 2 percent of monthly income per capita. This target is to ensure that the remaining 55 percent of the global population that is offline becomes connected by the year 2025.

While offering low-cost handsets and internet accessibility is important in ensuring digital financial inclusion of women, it will not work in isolation. A recent study on women's mobile phone ownership and the uptake and usage of DFS in Tanzania concluded that connecting women who have never used a phone before with mobile technology cannot happen overnight. It requires significant behavioral change in terms of financial practices and usage of mobile money. The authors also highlight the impact of mobile churn (attrition rates in mobile phone ownership) and how it can reduce mobile money account ownership by a notable amount (from 80 to 33 percent in their study).⁹⁵

Promote the uptake of mobile phone use by women.

An example is targeting the dissemination of information to women, especially related to household care or children's well-being, as a way to encourage women's mobile usage—although there is a risk that this approach further entrenches gender norms around domestic work and childcare.⁹⁶

Men sometimes register mobile accounts on behalf of women, which, among other things, can mislead mobile operators about their customer base. The Gender Analysis and Identification Toolkit (GAIT),⁹⁷ developed by GSMA and Dalberg Data Insights, attempts to overcome this problem by using a machine-learning algorithm to analyze mobile usage patterns to predict the gender of subscribers, with over 80 percent accuracy. This reportedly helped Robi Axiata (a mobile operator in Bangladesh) to reach female customers with tailored service-information messages.⁹⁸

Provide security and support against mobile harassment.

A recent report identified over 60 initiatives from the private sector and nongovernmental organizations (NGOs) aimed at addressing mobile-related or general safety concerns, many of which can be applied at low-cost in rural settings.⁹⁹ For example, anonymous addition of phone credit can be offered via scratch cards, SMS, mobile money, or top-up machines so that women do not have to share their numbers to add credit to their phones.¹⁰⁰ Scratch cards and mobile money services are already available in multiple low- and middle-income countries. SMS recharge services are available through operators such as Grameenphone Private Recharge (Bangladesh), Orange Private Recharge (Egypt), and Vodafone Idea (India). Top-up machines are usually located outside stores and can be seen in Thailand (True and Boonterm), Bolivia (Tigo), Tanzania (Tigo), and Myanmar (True).

Testimonials by female users suggest that the ability to block and report unwanted attention can promote use of mobile phones.¹⁰¹ Blocking calls and messages can be done at the network level and is available from many network operators, including Airtel Kenya, Gio Nigeria, and Orange Tunisia.¹⁰² In Egypt, Mobinil (later Orange) launched a call-block service in 2012. By 2015, the company estimated 600,000 users and experience suggests that over 90 percent of the customers were women.¹⁰³

Face-to-face workshops may be most beneficial for rural women (and sometimes men) to inform about the risks associated with mobile and internet usage, although women have burdens on their time that can make participation difficult. Topics can include how to stay safe online and how to respond to concerns (e.g., blocking harassers). Organizations offering such workshops include Facebook (in partnership with local NGOs and international organizations), HarassMap in Egypt, and Safecity in India.¹⁰⁴ Safecity campaigns, for example, are community driven and aim to increase awareness about sexual harassment within neighborhoods. In 2015, the organization found that the campaigns have shown positive effects on the 3,000 families that they worked with. Awareness of what constitutes sexual harassment increased by 50 percentage points, likelihood to report sexual harassment increased by 36 percentage points, and the likelihood of engaging with the community to address issues in the neighborhood increased by 42 percentage points.¹⁰⁵

Disrupt existing technology.

Some women do not feel comfortable using mobile phones due to unfamiliarity with the technology and the cost of smartphones, among many other reasons. While the use of smartphones is rapidly expanding, many rural and especially poor residents use feature phones. For example, feature phones still dominated the mobile phone market in India in 2016.¹⁰⁶ Ensuring that financial and mobile services are available through feature phones can help close the gender gap. In fact, the aforementioned study on mobile phones and digital financial inclusion in Tanzania concluded that providing smartphones to new phone owners significantly reduced mobile money use.¹⁰⁷ Box 4 below illustrates how companies like MaTontine have

disrupted the digital financial inclusion industry by turning existing savings groups into digital ones using simple feature phones.

Address technological illiteracy and language barriers.

In recent years, there has been significantly more mobile content in local languages. In 2017, 35 percent of all mobile applications were developed outside of North America and Europe, and 25 percent were from low- and middle-income countries (up from 28 percent and 15 percent in 2014).¹⁰⁸

Some potential users may be discouraged by lack of literacy and knowledge, for example, on how to navigate the service. For illiterate women, text services may not be helpful. Voice messaging, community help desks, or door-to-door agent support can be more useful, especially when introducing new technology or products to local men and women.

The design of services—such as interactive voice response, icons, pictures, and clear user menus—can seek to better meet the needs of women who are less literate and less familiar with mobile technology. Teaching mobile and digital skills in school curricula, as well as training and incentivizing sales agents to better help women navigate handsets and mobile services, can also help.¹⁰⁹ These actions can involve government, private sector, and development partners.

Insights from MoKash in Uganda, a digital credit and savings platform, suggest that products and communication should be in both English and Luganda (the two main Ugandan languages) to address language barriers and promote uptake (63 percent of respondents did not speak English).¹¹⁰ For rural areas, additional visual communications were recommended.¹¹¹

One example of a program to help women become more technically literate is Airtel Money in India, in partnership with Accion and Swadhaar (both of which have a large microfinance client base).¹¹² The program aimed to educate clients on ways to manage their finances and use mobile money through training materials such as posters, flip charts, cartoon images, and stories that women can relate to, as well as occasional text messages and a special peer leader program.

Another initiative is a mobile skills toolkit for women in Papua New Guinea, which used audio and video resources heavily to explain key mobile functions such as SMS, mobile money, and bill payment in a contextually appropriate manner.¹¹³

Evaluations of the impact of these various initiatives are not available, however, and further research is needed to better understand what works.

Intentional design of financial services to promote women's inclusion

There are a number of ways that financial services can be designed and delivered to encourage women's increased usage of them. Additional efforts may be needed at the community level where norms are adverse.

Recruit and train women banking agents.

Women mobile money agents can help solve issues of trust and poor customer service and attract female customers. In Rwanda,¹¹⁴ a rigorous evaluation found that women felt familiar and more comfortable with female agents.¹¹⁵ Male interviewees

from Tigo Rwanda have also indicated that female agents offer better customer service than men. An additional proven benefit of recruiting female agents is that it can bring socioeconomic benefits to women, families, and their communities. However, being a female agent comes with many of the sociocultural barriers that we see with other jobs.¹¹⁶

In Pakistan, where there is a gender gap of 80 percent in financial inclusion, research to understand why JazzCash account uptake was lagging among women revealed that women did not feel comfortable dealing with the company's network of 70,000 male agents (99.9 percent of their overall agents). By training and engaging rural women entrepreneurs to be both JazzCash agents and Unilever retailers, the companies' retail footprint expanded to rural areas.¹¹⁷ The pilot program registered 566 new JazzCash customers, 42 percent of whom were women.¹¹⁸

Leverage existing community structures to encourage account uptake.

As illustrated in the case of MaTontine (Box 4), existing community structures can encourage women to save and borrow in a familiar context. By converting an existing tontine system into a digital one that can be accessed via simple phones, MaTontine did not require clients to change their behavior and thus gained their trust.

BOX 4

Transforming the old into the new: MaTontine and Tigo Paaré

Smartphones are costly, and when rural families can afford one, it usually goes to the male head of household or to the children. While new and innovative technology plays a significant role in advancing women's economic empowerment, it is also worthwhile to find ways to disrupt existing programs with new ideas.

One example is MaTontine, which provides a diverse range of services (loans, insurance, group purchases, and peer-to-peer lending) based on the financial needs of its members. MaTontine operates in francophone Africa, primarily serves poor women, and uses and digitizes the existing tontine structure. This, and the fact that each group can appoint its own manager, builds a sense of trust. Similar to village savings and loan associations, participants contribute to a common pot and receive monthly returns, a process that continues until every member receives a loan. The innovation is that MaTontine offers digital financial services through simple mobile technology via feature phones. Another similar

concept in Chad, initiated by the mobile network operator Tigo, digitized a group savings product, enabling members to contribute to a group wallet via their mobile phones. Tigo Paaré (which means group savings), brings about many benefits to its users, including improved security and increased transparency.

These are examples of encouraging savings behavior among those financially excluded through simple innovative approaches.

Sources: Gayatri Murthy and Ruben Barreto, "FinTech for the Poor: Not All Virtual, Not All Apps," CGAP (blog), January 18, 2018, www.cgap.org/blog/fintech-poor-not-all-virtual-not-all-apps; "How it Works?" MaTontine, accessed December 5, 2018, <http://matontine.com/en/comment-ca-marche/>; Chloe Gueguen, "Blending Tradition with Digital Finance Innovation: A Mobile Group Savings Product in Chad – Part 1," GSMA Mobile for Development, January 17, 2018, www.gsma.com/mobilefordevelopment/programme-connected-women/blending-tradition-digital-finance-innovation-mobile-group-savings-product-chad/.

Reduce paperwork and documentation requirements.

There are several examples of deliberate efforts to reduce documentation requirements to help facilitate financial access. In India, Aadhaar-enabled payment systems can make digital money more accessible by linking up with a formal bank account, as part of a larger government goal for a cashless future.¹¹⁹ This program addresses the problem of dormant digital financial accounts in India (43 percent of accounts are idle)¹²⁰ by creating convenient payment options through access to local ATMs, merchants, and banks. Biometric technology resolves the problem of clients forgetting their PIN and authentication numbers. This process is also cheaper for merchants than mobile money or card payments and helps to prevent leakage and fraud.

The adoption of a tiered “know your customer”¹²¹ system has also proven to facilitate an increased uptake in financial account ownership for women. Low-tiered accounts tend to require less documentation and provide fewer options. In Mexico, for example, the introduction of a simplified anti-money laundering and countering the financing of terrorism (AML/CFT) process, coupled with tiered KYC, reportedly contributed to enhancing financial access for women in rural areas. While the lowest tiers did not allow mobile phone transactions, they were allowed from the second tier onward and required very basic information.¹²²

Make banking more accessible.

Innovations to make financial services closer to communities and more affordable have been undertaken in a number of countries, typically using a wider range of agents and new tech options. Combining the best and most convenient aspects of informal and formal financial services can also provide a pathway into the financial system (see Box 5).

A microfinance loan provider operating in the Democratic Republic of the Congo, FINCA, launched agency banking in 2012 using local merchants and shopkeepers in remote areas to provide banking services.¹²³ The agents are equipped with portable devices that connect to FINCA’s network. Biometric-enabled banking allows clients to access their accounts from any FINCA location by scanning their finger. This simple yet high-tech solution allows clients to carry out a wide array of financial services such as loan repayment, deposits, withdrawals, or funds transfers with a simple finger scan and has proved to be cost effective. Women’s financial inclusion rates in Democratic Republic of the Congo have increased rapidly over the past decade, rising from 4 percent in 2011 to 33 percent in 2017, boosted by these types of services.

Address gender gaps in capabilities.

Many adult women in low-income countries, especially in FCA contexts, lack basic education and the confidence and skills to access novel technology. Financial literacy, in particular, has an important role to play in helping individuals access, adopt, and use appropriate formal financial products.¹²⁴

Yet, promoting financial literacy is a challenge, and there are not many examples of success.¹²⁵ Common roadblocks include low uptake, overly sophisticated content that does not meet user needs, misinformation, and scams that hinder active and informed use of DFS.¹²⁶

LISTA is a social protection program in Colombia that aims to combine financial education, technology, and social capital to reach end users and increase their financial capabilities in terms of knowledge, attitudes, and preferences.¹²⁷ An evaluation revealed that 53 percent of the users increased their financial capabilities and improved their financial practices, measured in terms of budgeting, saving, and using financial products and services.¹²⁸ The impact was higher among the higher educated (more than primary schooling); in this group, trust in banks increased, as did budgeting and savings practices. Among those with education of five years or fewer, the most notable improvement was in financial practices—the share of people needing a loan fell, and the share of people who turned to formal savings and used the internet increased.¹²⁹

BOX 5

How the private sector can combine informal and formal financial services

Diamond Bank BETA savings account

In 2013, Diamond Bank in Nigeria partnered with Women's World Banking, Visa, and Enhancing Financial Innovation and Access to roll out a simplified savings solution called BETA. This was targeted at low-income women in Lagos, who, in market research, were found to be more risk averse and difficult to convince about banking than initial surveys had suggested.

BETA borrows features from informal and formal services.

Informal

- Low-cost solution provided door-to-door for women by agents, requiring no minimum balance and operated without hidden fees
- Minimal KYC, with customers opening an account instantly with a photo and basic information captured via an agent's mobile phone (clients receive an account number and PIN via SMS and a starter pack with an ATM card)
- Agent network recruited from the women's community to reflect women's preference for taking financial advice from family and friends

Formal

- Safe and secure banking
- Access to ATMs
- Point-of-service terminals and other access points
- Customer service support

Additionally, Diamond Bank adjusted its marketing technique from being male oriented to more female-oriented in order to make sure women connected with the product. As per Women's World Banking's findings, products designed for men often do not appeal to women, but those that are designed for women usually reach men.

Within six months of its launch in 2013, BETA's women clientele grew from 32 percent to 41 percent, adding \$1.5 million in savings into more than 38,000 accounts. A quarter of these accounts were opened by previously unbanked customers and 74 percent recorded more than one transaction per month. This is one of the many examples illustrating mainstream private sector agents discovering the market potential of the poorest women, many of whom access either only informal financial services or none at all.

Source: Antoinette Koning, "Banking on Including Women in Nigeria" CGAP (blog), December 20, 2013, www.cgap.org/blog/banking-including-women-nigeria.

The accumulating evidence suggests that financial capabilities are critical but traditional training often does not work.¹³⁰ Effective approaches need to be combined with improved product design and services. This includes a range of content and formats from customer orientation information and product awareness to skill building and formal instruction around financial management.¹³¹

Eliminating legal discrimination against women

The UN High-Level Panel on Women's Economic Empowerment identified ensuring legal protection and reforming discriminatory laws and regulations as a primary driver of women's financial inclusion.¹³² In FCA countries, these laws are often especially restrictive. Of the 36 FCA countries, the 26 for which we have data average 32 discriminatory laws that make it difficult for women to work, open bank accounts, own property, and hold the same jobs as men.¹³³

There are some encouraging examples of legal reforms to address these barriers. The Democratic Republic of the Congo has recently reformed its family code to allow married women to sign a contract, get a job, open a bank account, and register a business in the same way as a married man.¹³⁴ In 2018, the government prohibited discrimination based on gender in access to credit. Guinea recently addressed discrimination based on gender and marital status when accessing goods and services, including financial services, through mobile or otherwise.¹³⁵

Broader regulatory and policy framework

The types of financial sector reforms that need to be considered will vary by context, but could include changing banking regulations that restrict the use of mobile money accounts.¹³⁶ Policies and regulations around financial services can either facilitate or restrict the use of mobile technology. For example, restrictions on the types of institutions that can offer DFS may need to be relaxed,¹³⁷ as has been done in Mexico, which reworked its regulations in 2013 to fully integrate mobile payment systems into its gross settlement system while getting rid of transfer fees.¹³⁸ Several countries across Latin America and the Caribbean have adopted an enabling regulatory framework for mobile money.¹³⁹ The number of active mobile money accounts in the region rose from less than a million in December 2011 to over 10 million by the end of 2016.¹⁴⁰ GSMA's Mobile Money Regulatory Index scores countries based on the extent to which their regulatory framework enables widespread mobile money adoption and shows this visually (with details) in an online map.¹⁴¹

Targeted regulatory interventions are needed to ensure more women can access and use mobile money services. This includes adopting flexible agent regulation and tiered KYC.¹⁴² Additionally, expanding digital identification systems to reach excluded women (such as India's Aadhaar system and UNHCR's efforts to create digital identity of the Rohingya population [see Box 3]) is a difficult, but very necessary, step to increasing women's digital financial inclusion and closing the gaps.¹⁴³

Another promising route to promoting financial inclusion is digitizing government-to-person (G2P) and person-to-government (P2G) payments. Almost three in five (58 percent) adults in Latin America and the Caribbean said they opened their first account specifically to receive government transfers.¹⁴⁴ Governments and businesses could help reduce the number of unbanked adults by moving

routine cash payments—such as social protection transfers, school fees, and utility payments¹⁴⁵—directly into accounts.¹⁴⁶ Digitizing these payments could reduce the number of unbanked adults by up to 100 million globally and bring additional returns in terms of lower administrative costs (as found in Liberia)¹⁴⁷ and reduced leakage and corruption.

Various governments are responding to this challenge. Sierra Leone has emphasized developing a DFS system in their National Strategy for Financial Inclusion (2017–2020), including reviewing and updating regulatory frameworks, developing mechanisms for normalizing the use of digitization (including through G2P and P2G programs), and developing mechanisms to ensure that problems are addressed effectively. The potential of a scaled DFS system was demonstrated during the Ebola crisis in 2014–2016 when 30,000 Ebola response workers were paid quickly, safely, and accurately, thereby strengthening the capacity to contain the disease and save lives.¹⁴⁸ Interestingly, financial inclusion in the country rose from 15 to 20 percent between 2014 and 2017, and mobile money accounts alone increased from 4 to 11 percent during the same period.¹⁴⁹

Finally, it is recommended that governments develop legal and policy frameworks to address harassment over mobile phones and mobile internet. This will often involve addressing legal discriminatory norms against women as discussed in section 4.3 as well as enact regulatory interventions to include a greater portion of the population as discussed above in this section.

Having access to a mobile phone is not sufficient to close the gap in financial inclusion. Ultimately, collaboration between financial institutions, mobile network operators, and governments is highly recommended and necessary. An example of this is the EQUALS global partnership.¹⁵⁰ Large private sector firms such as MNOs can play a significant role in influencing government policies and be effective advocates on several of the policy implications discussed. The endorsement by the G7 of the Bill and Melinda Gates Foundation’s report on closing the digital financial inclusion gap in African countries is a promising step.¹⁵¹

Conclusions

Financial inclusion expands opportunities for women, who gain more control over their resources and savings. Conversely, persistent financial exclusion adversely affects not only women but also their families, communities, and the larger economy.¹⁵²

This paper has underlined the promise of mobile phones in addressing the exclusion of women from financial services. It has also highlighted the importance of broader economic and sociocultural factors and the necessity of multipronged approaches appropriate to local contexts and program objectives. Knowledge is accumulating about what works to address these challenges, although further investments are needed in data and knowledge about effective programs.¹⁵³

Our findings are especially encouraging in fragile and conflict-affected states, where women have traditionally been excluded from financial services and where digital services offer ways to overcome infrastructure and security constraints. Realizing the full potential of digital financial inclusion will, however, require addressing a complex set of barriers—socioeconomic, infrastructural, and regulatory—faced by many women, especially those living in poverty and conflict.

Closing gender gaps in financial inclusion has moved to the top of the agenda for many private sector providers, governments, development partners, and civil society groups. While there are no simple solutions, the accumulating evidence suggest that concerted efforts and partnerships at different levels can help accelerate progress toward the goal of finance for all.

Realizing the full potential of digital financial inclusion will, however, require addressing a complex set of barriers—socioeconomic, infrastructural, and regulatory—faced by many women, especially those living in poverty and conflict.

Annex

Table A: World Bank “Harmonized List of Fragile Situations FY19”

Fragile	Protracted conflict	Post-conflict
Gambia	Afghanistan	Burundi
Kiribati	Central African Republic	Comoros
Kosovo	Chad	Côte d'Ivoire
Marshall Islands	Democratic Republic of the Congo	Djibouti
Micronesia, Federal States	Iraq	Eritrea
Tuvalu	Lebanon	Guinea-Bissau
	Libya	Haiti
	Mali	Liberia
	Myanmar	Mozambique
	Somalia	Papua New Guinea
	South Sudan	Republic of Congo
	Sudan	Solomon Islands
	Syria	Timor-Leste
	West Bank and Gaza	Togo
	Yemen	Zimbabwe

Source: World Bank, “Harmonized List of Fragile Situations FY19,” <http://pubdocs.worldbank.org/en/892921532529834051/FCSList-FY19-Final.pdf>.

Table B: Gender gaps are highest for fragile and conflict-affected countries

Year	Financial Inclusion Gaps*			Mobile Owner Gaps		
	High income (%)	Developing** (%)	FCA (%)	High income (%)	Developing** (%)	FCA (%)
2011	5.6	21.8	44.6	NA	NA	NA
2014	1.3	15.8	42.8	NA	NA	NA
2017	2.3	13.0	25.7	2.6	8.7	17.4
Financial Inclusion Account Gaps				Mobile Money Gaps		
2011	5.6	21.8	44.6	NA	NA	NA
2014	1.3	15.9	45.1	***	26.9	29.5
2017	2.3	12.9	27.4	***	49.9	35.4

Note: 2017: 44 countries in high-income group; 81 countries in developing-country group except mobile account (61); and 18 countries in FCA group except for mobile account (13). 2014: 44 countries in high-income group; 80 countries in developing-country group except mobile account (54); and 17 countries in FCA group except for mobile account (12). 2011: 44 countries in high-income group; 80 countries in developing-country group; and 20 countries in FCA group. For definitions, see Glossary.

* Financial inclusion refers to owning a financial institution account and/or a mobile money account.

**Developing countries exclude FCA countries so as to avoid double counting.

***NA. Data for only three high-income countries available in the mobile money account category.

Table C: Definitions and data sources

Measure	Definition	Year	Number of Countries	Data Source
Community safety	Percentage of women age 15 years and older who report that they “feel safe walking alone at night in the city or area where you live.”	2010–2016	173	Original source: Gallup World Poll 2016, www.gallup.com/topic/world_region_worldwide.aspx , accessed in March 2017. Collected from: Georgetown Institute for Women, Peace and Security and Peace Research Institute Oslo, <i>Women, Peace and Security Index 2017/18: Tracking Sustainable Peace through Inclusion, Justice, and Security for Women</i> (Washington, D.C.: GIWPS and PRIO, 2017).
Education	Average number of years of education received by women age 25 and older, converted from educational attainment levels using official durations of each level.	2017 (2012, 2014, and 2016, where missing)	128	UNESCO Institute for Statistics, http://data.uis.unesco.org/index.aspx , accessed in September 2019.
Employment	Percentage of a country’s female population age 25 years and older that is employed.	2018	174	ILOSTAT database, www.ilo.org/ilostat , accessed in September 2019.
Fragile and conflict-affected	Countries classified as such based on weak policies and institutions and/or the presence of a UN and/or regional peacekeeping or peacebuilding mission during the past three years.	2018	31	World Bank, “Harmonized List of Fragile Situations FY19,” last updated July 1, 2018, www.worldbank.org/en/topic/fragilityconflictviolence/brief/harmonized-list-of-fragile-situations .
Financial Inclusion	Percentage of respondents (age 15 and above) who report having an account at a bank or another type of financial institution, report personally using a mobile money service in the past 12 months, or report to both.	2017 (2011 and 2014 where missing)	156	Asli Demirgürç-Kunt et al., <i>The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution</i> (Washington, D.C.: World Bank, 2018).
Financial inclusion gap	The gender gap in having an account at a bank or another type of financial institution or personally using a mobile money service in the past 12 months.	2017 (2011 and 2014 where missing)	156	Asli Demirgürç-Kunt et al., <i>The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution</i> (Washington, D.C.: World Bank, 2018), and author calculations.
GDP per capita (logged)	Natural log of gross domestic product per capita in current U.S. dollars.	2018 (2007, 2011, 2014, and 2016 where missing)	172	World Bank national accounts data and OECD National Accounts data files, https://data.worldbank.org/indicator/NY.GDP.PCAP.CD .

Measure	Definition	Year	Number of Countries	Data Source
Legal discrimination index	Aggregate score of laws and regulations that limit women's ability to participate in the society or economy or that differentiate between men and women, as measured by Women, Business, and the Law, a World Bank Group product that collects data on laws and regulations that constrain women's economic opportunities. This indicator aggregates 78 laws and regulations that differentiate between men and women across six categories (accessing institutions, using property, going to court, providing incentives to work, building credit, and getting a job), with greater weight given to six laws (requirement that married women obey their husband, mandate for paternity leave, equal remuneration for work of equal value, nondiscrimination based on gender in hiring, and prohibitions of dismissal of pregnant workers and of child or early marriage). The lower the score the better.	2016	173	Original source: World Bank's Women, Business, and the Law database, http://wbl.worldbank.org , accessed in February 2017. Collected from: Georgetown Institute for Women, Peace and Security and Peace Research Institute Oslo, <i>Women, Peace and Security Index 2017/18: Tracking Sustainable Peace through Inclusion, Justice, and Security for Women</i> (Washington, D.C.: GIWPS and PRIO, 2017).
Lifetime violence	Percentage of women who have experienced physical or sexual violence committed by their intimate partner.	2016	171	Original source: UN Women Global Database on Violence against Women, accessed in March 2017. Collected from: Georgetown Institute for Women, Peace and Security and Peace Research Institute Oslo, <i>Women, Peace and Security Index 2017/18: Tracking Sustainable Peace through Inclusion, Justice, and Security for Women</i> (Washington, D.C.: GIWPS and PRIO, 2017).
Mobile access	Percentage of women (age 15 and above) responding "yes" to the Gallup World Poll question "Do you have a mobile phone that you use to make and receive personal calls?" In some cases, this can refer to women's ownership of mobile phones.	2018 (2017 where missing)	147	Gallup World Poll 2018, www.gallup.com/analytic.../232838/world-poll.aspx .
Organized violence	Total number of battle deaths from state based, non-state, or one-sided conflicts per 100,000 people. State-based conflict is armed conflict between two states or between a state and a rebel group. Nonstate conflict is fighting between rebel groups or militias or between groups with different ethnic, clan, or religious identification. One-sided violence is the use of armed force by the government or a formally organized group against civilians.	2016	172	Original source: Uppsala Conflict Data Program, UCDP Georeferenced Event Dataset, http://ucdp.uu.se/#/ , accessed in December 2016. Collected from: Georgetown Institute for Women, Peace and Security and Peace Research Institute Oslo, <i>Women, Peace and Security Index 2017/18: Tracking Sustainable Peace through Inclusion, Justice, and Security for Women</i> (Washington, D.C.: GIWPS and PRIO, 2017).
Parliamentary representation	Percentage of seats held by women in lower and upper houses of national parliaments.	2016	171	Original source: Inter-Parliamentary Union, www.ipu.org/wmn-e/world.htm , accessed in March 2017. Collected from: Georgetown Institute for Women, Peace and Security and Peace Research Institute Oslo, <i>Women, Peace and Security Index 2017/18: Tracking Sustainable Peace through Inclusion, Justice, and Security for Women</i> (Washington, D.C.: GIWPS and PRIO, 2017).

Table D: Overall levels of access to accounts and mobile phones by region and gender

Year 2017	Global Female			Global Male		
	High income (%)	Developing** (%)	FCA (%)	High income (%)	Developing** (%)	FCA (%)
Financial inclusion*	92.6	61.6	25.2	94.6	69.6	33.8
Financial institution account	92.6	60.4	18.3	94.6	67.8	25.2
Mobile money account	***	5.7	11.5	***	9.7	16.2
Mobile ownership/access	92.4	80.1	61.6	95.5	87.5	74.9

Source: Estimated using Global Findex 2017 and UN World Population Prospects

Note: 2017: 44 countries in high-income group; 81 countries in developing-country group except mobile account (61); and 18 countries in FCA group except mobile account (13).

* Financial inclusion refers to owning a financial institution account and/or a mobile money account.

**Developing countries exclude FCA countries so as to avoid double counting.

***NA. Data for only three high-income countries available in the mobile money account category.

Table E: Robustness check: The effect of the mobile phone gap on the financial inclusion gap (in absolute differences)

Dependent variable: Financial inclusion difference			
	Model 4	Model 5	Model 6
<i>Key independent variable</i>			
Mobile phone difference	0.0791 (0.101)	0.162 (0.0896)	0.249** (0.0783)
<i>controls</i>			
GDP per capita (logged)	-0.00229 (0.00533)	-0.0106** (0.00402)	
Employment gap	0.0020488 (0.000617)	0.00163** (0.000488)	0.00137** (0.000494)
Education gap	0.0212* (0.00836)		
No. of women in parliament	0.000383 (0.000642)		
Lifetime violence	0.000731 (0.000673)		
Legal discrimination	0.00156* (0.000779)	0.00130* (0.000646)	0.00184** (0.000572)
Organized violence	-0.00491* (0.00240)	-0.00199* (0.000978)	-0.00170 (0.000992)
Community safety as perceived by women			-0.000316 (0.000310)
Constant	-0.0400 (0.0638)	0.0875 (0.0465)	0.00155 (0.0272)
Observations	116	144	144
Adjusted r-squares	0.42	0.33	0.31
Mean vif	1.57	1.52	1.24
Pairwise correlation	just above 0.5 between some independent variables	just above 0.5 between some independent variables	below 0.4 for between all independent variables
Robust standard errors in parentheses *p<0.05, **p<0.01, ***p<0.001			

Notes

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