DIGITAL RURAL GENDER DIVIDE IN LATIN AMERICA AND THE CARIBBEAN

IICA · UNIVERSITY OF OXFORD · IDB Inter-American Development Bank · IFAD Investing in rural people

Preface
A relevant contribution on the road to equality

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The difficult road to equalityis much longer and more challenging for rural women, who face many obstacles, including limited access to information and communication technologies. That is the topic of this document, which is the result of aneffort between the Inter-American Institute for Cooperation on Agriculture (IICA) and researchers at the Sociology Department of the University of Oxford, with support from the Inter-American Development Bank (IDB).

Our interest in and concerns regarding these issues are not new. We have only become more resolute in our decision to make substantial contributions, through technical cooperation, to the development and implementation of effective and useful public policies to empower women who live and work in rural areas.

When we developed our 2018-2022 **Medium-term Plan**, the roadmap for IICA's technical cooperation activities, we determined that the areas of Gender and Youth, as well as Innovation and Technology, would serve as the two main pillars for our institutional work, providing a new sense of direction and meaning. These are concerns that we share with our partners in this important publication: IDB and IFAD.

These topics serve as cross-cutting issues for the five hemispheric programs through which IICA delivers its services, which are aimed at eliciting positive changes in the agriculture sector and rural life in its 34 Member States. To achieve this goal, IICA works to foster the economic growth of rural areas and their dwellers, improve the sustainable management of their natural capital, and reduce poverty and inequalities that trigger migration flows towards cities.

The priorities of our cooperation policies are based on the firm conviction that any discussion regarding the future of agriculture must address two unavoidable issues: how to contribute to empowering rural women and how to reduce the digital divide between urban and rural areas.

To increase the quality of these public discussions, it is important to have an accurate diagnosis of the situation. In that regard, this document makes a fundamental contribution.

The result of extensive research, this document addresses trends in, and the correlation between, the discrimination faced by rural women and the digital divide that places them at a disadvantage. Both issues are the result of unequal social structures that hinder the full development of rural women who play a key role in driving agricultural productivity and guaranteeing the stability and survival of rural families.

By paying careful attention to the subtle differences between countries on such a vast and diverse continent, the pages of this document describe in detail how social discrimination against women over the course of history, as well as the recent digital divide, can be both a cause and a consequence of inequities, and are therefore interconnected.

Consequently, these pages can also serve as a roadmap for the work ahead.

Thus far, the relationship between discrimination against rural women and the digital divide has hardly been explored, especially in our region. However, this document provides an in-depth analysis of concrete, real-life data. This rigorous task was undertaken by a team of researchers at the University of Oxford, Bocconi University and McGill University, led by Italian social scientist Valentina Rotondi, who studies the interaction between technological change, populations and development.

In recent years, the technological revolution on our planet has brought digital connectivity to rural areas in each of our countries. But there is still a great deal of work to be done to minimize the obstacles faced by rural areas compared to cities, while also ensuring that the opportunities afforded by this revolution are available to smaller-scale producers with more limited access to marketing channels, particularly rural women.

This topic has become even more urgent amidst the current pandemic, which is sweeping through our societies and accelerating changes in the way we produce and access marketing chains. In that sense, this historic moment can also be seen as an opportunity.

We must ensure that information and communication technologies serve as a bridge that fosters equal opportunities and improves the quality of life of rural women, rather than becoming yet another area that further accentuates the social fragility of rural women producers and heads of households. Their full technological inclusion is crucial in order to leverage economic and social progress and guarantee food security in our countries.

This document, which we hope will provide valuable input for public policy-making in the region—notes that women in Latin America and the Caribbean are much less likely to own a mobile phone than men. This trend is continuing to increase among rural women with low levels of formal education, making them the least "connected" group.

It is also important to give greater visibility to the fact that, in addition to facing greater difficulties to own land, secure funding to produce or obtain inputs to increase crop yields, women also face greater obstacles in the use of technologies to communicate, receive training and stay informed.

This situation puts rural women at a disadvantage compared to rural men and urban women. Governments and civil society must undertake a commitment to addressing this crucial and relevant issue, which should also be addressed by the mass media. To this end, we must raise awareness of this issue to ensure that media can also contribute to positively transforming this reality.

Rural women's lower levels of connectivity have a strong impact on economic, social, health and community aspects in rural areas, given the fact that access to information and communication technologies is, above all, the main tool for driving personal, collective and productive development.

Evidence shows that countries with a smaller digital gender divide provide women with better opportunities.

We know that mobile phone use has increased tremendously, providing hundreds of millions of people with more than just an easy way to communicate and obtain information: mobile phones with an Internet connection also serve as a tool to access essential services related to education, health or economic development.

The disparities in access to the Internet and other information and communication technologies described in this document are what social researchers call the first-level digital divide. This is different from the second-level divide, which refers to learning skills that result in different ways of utilizing and capitalizing on these technologies.

The first-level digital divide is tremendously relevant in our efforts to unlock the full potential of agriculture in our hemisphere. Bridging this gap will allow for making a substantial contribution to the well-being of those living in rural areas, which is one of IICA's key missions.

All of our actions are geared towards a common goal: ensuring that rural areas are no longer viewed as outdated areas that lack opportunities and drive away their own people. They must be valued for what they truly are: key places that foster economic growth and sustainable development, provide safe sources of food, generate wealth and have tremendous potential to increase the prosperity and progress of their communities.

The crisis triggered by COVID-19 has led many urban populations to acknowledge the valuable role played by rural dwellers who produce food and other essential goods in a reliable manner and in harmony with nature.

Therefore, now more than ever, eradicating the conditions that prevent rural women from achieving their full potential is a key objective of IICA, IDB and IFAD policies and one of the main challenges that States should seek to overcome.

Access to mobile phones and an Internet connection is particularly important for promoting women's active participation in different aspects of rural life. There is ample evidence that phones can provide a means for combating the inequity that affects women, thus enabling them to participate in decision-making forums, organizational efforts, knowledge building, and collective economic and social processes.

With a mobile phone and an Internet connection, agricultural workers are now able to access relevant information: from weather forecasts to trade routes for various chains, and even financial services available to support the production of food and other goods, which rural areas provide for society.

Therefore, access to information and communication technologies is key to improving food security and contributing to the achievement of a competitive, inclusive and sustainable agriculture sector.

If anything has characterized IICA over the course of its almost 80 years of existence, as well as IDB and IFAD, is their ability to adapt to the dynamic reality and changing demands of the agriculture sector in the Americas. Today, we honor that history, as we focus our attention on achieving concrete and visible results that will transform lives in the countryside while fostering agricultural development. That is what this important document is all about.

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ABSTRACT

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This report presents empirical evidence showing the existence of a first-level digital gender divide in the Latin America and Caribbean (LAC) region. It does so by leveraging the richness of two data sources: the Gallup World Poll and digital trace data on the gender composition of Facebook users available from its advertising platform. **Results from the analysis of the Gallup World Poll show that in the 23 Latin American countries under analysis, there exists a digital gender gap in mobile-phone ownership whereby women are on average less likely to own a mobile phone than men.** The digital gender gap is gradually narrowing over time, yet with an apparent worsening over the last half decade. Additionally, characteristics such as gender, socio-economic status, and household location of residence interact with each other producing multiple layers of disadvantage for women. Specifically, low-educated women living in rural areas turn out to be the least "connected" group, thus highlighting important areas for policy intervention. Therefore, addressing these inequalities is an opportunity to know the realities of rural women to improve their access to this resource and promote their economic and political empowerment. Results from aggregate analyses are confirmed by a micro- level analysis (N=120000+) showing that, across specifications, women are less likely to own a mobile phone than their male counterparts even after accounting for a host of socio-demographic characteristics.

When we augment the **Gallup data** with indicators retrieved from the International Labor Organization (ILO), we find that a narrower digital gender gap is associated with better labor - market prospects for women as well. Looking further at types of digital connectivity for those who are online, we analyse social media use by gender in countries of the region by looking at the gender composition of Facebook users, one of the largest social media platforms used in the region. **The Facebook gender gap index, defined as the ratio of female-to-male Facebook users divided by the female-to-male ratio of the population, shows that, relative to countries in Sub-Saharan Africa and Asia, male and female Facebook penetration rates in Latin America are quite balanced.** This result masks, however, some heterogeneities. In fact, while in several countries of the region including Brazil, Argentina, Venezuela, Colombia, Suriname, Uruguay and Paraguay, women are more likely to be Facebook users than men, in others, including Mexico and the Central American region (e.g. Nicaragua, Guatemala) men are slightly more active on Facebook. We conclude by reflecting on data limitations and proposing fruitful avenues for future research.


AFP Orlando Sierra

EXECUTIVE SUMMARY

This report focuses on digital gender gaps in Latin American and Caribbean countries. More specifically, it presents some empirical evidence showing the existence of a first-level digital gender divide, i.e., a divide related to accessing ICTs rather than to the skills required to leverage their potentials (also called, second-level digital divide). To the best of our knowledge – with few exceptions– the literature on this topic is scant.

This report addresses this understudied area by relying on two data sources: the Gallup World Poll – which we augment with indicators from the International Labour Organization (ILO) – and digital trace data on the gender composition of Facebook users available from its advertising platform. We use Gallup data to trace the female-to-male ratio in mobile-phone ownership over time in 23 Latin American countries. Findings from this exercise show that, overall, there exists a digital gender gap disfavouring women in mobile phone ownership (i.e., a female-to-male ratio lower than 1) that is gradually narrowing over time, yet with an apparent worsening over the last half decade. This overall result masks, however, a significant heterogeneity between countries, with some countries (such as Argentina and Brazil) which have achieved almost gender parity in mobile-phone ownership since 2010 and others (such as Guatemala and Peru) which are lagging behind. In Chile and Uruguay, the female-to-male ratio tends to favor women (ratio>1). We then show the existence of an additional gradient whereby gender and household location of residence interact with each other producing multiple layers of disadvantage for women living in rural areas – who turn out to be the least "connected." This affects their ability to access information that allows them to make better decisions when producing, trading, accessing financial services, participating in organizations and spaces for political representation. These results are further confirmed by micro-level analyses showing that women are less likely to own a mobile phone than their male counterparts even after accounting for individual level of education and household location of residence. Once three-way interactions between gender, household location of residence, and education are included in the model, mobile-phone ownership turns out to be significantly higher for highly - educated females living in urban areas, confirming again the double disadvantage brought about by the interaction between gender, socio-economic status, and location of residence.

Due to the limited number of outcomes measuring women's status vis-à-vis men at the individual level in the Gallup dataset, we aggregate-up mobile-phone ownership information and complement micro-level analyses with country-level analyses exploring the correlation between gender gaps in mobile-phone adoption and three measures of women's empowerment (retrieved from the ILO), namely the ratio of female to male vulnerable employment rate, the ratio of female to male labor-force participation rate, and the ratio of female to male youth unemployment. This simple correlational evidence shows that when a narrowed digital gender gap is (ratio closer to 1, or higher), is associated with better labor-market prospects for women. More specifically, in countries where the digital gender gap (measured in 2017) is lower, gender gaps in vulnerable employment, youth unemployment and labor-force participation (all measured subsequently in 2019) are lower as well.

We further examine patterns of digital connectivity for those who are online by looking at social media use on one the region's largest social media platforms, Facebook. The Facebook gender gap index, defined as the ratio of female-to-male Facebook users divided by the female-to-male ratio of the population, shows that, compared with regions of the world such as Sub-Saharan Africa and Asia where women are much less likely to be Facebook users than men, male and female Facebook penetration (use) in Latin America is more balanced. This result masks, once more, some heterogeneities. While in several countries of the region, including Brazil, Argentina, Venezuela, Colombia, Suriname, Uruguay and Paraguay, women are more likely to be Facebook users than men,in others, including Mexico and the Central American region (e.g. Nicaragua, Guatemala) men are slightly more active on Facebook.

Results presented in this paper can be extended so as to study how gender gaps in digital access vary at the subnational level in the region, as well as to understand the relationship between online and offline gender inequalities.

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INTRODUCTION

Digital concerns underpin many of the United Nations (UN) Sustainable Development Goals (SDGs). Gender equality, population health, child well-being, quality education, industry innovation, sustainable cities: all these SDGs require strong information and communications technologies (ICTs) to become a reality. For this potential to be realized, poor countries and disadvantaged groups within countries have to overcome "digital divides," i.e., gaps in access between those who are connected and those who are not (first-level digital divide), and gaps in knowledge within the group of people who are connected (second-level digital divide).

The 'digital divide' as a concept has been used to describe inequalities in accessing ICTs (Norris, 2001) including disparities across and between developed and developing countries, as well as disparities between groups within countries, such as those between men and women, or the rich and the poor. In this report, we focus on digital gender gaps. More specifically, given significant variation in mobile- phone penetration rates between the countries under analysis in this report, our focus is on gender gaps in access to mobile phones, without reference to specific types of users or skills – a topic that will be covered in future research. **To put it differently, our focus is on the first-level digital divide, the divide related to accessing the technology itself rather than to the skills required to leverage its potentials which are often referred to as second-level (Hargittai, 2001) and third-level digital divide (Van Deursen & Helsper, 2015).**

The rapid diffusion of mobile phones has shown some promises in narrowing the digital divide, thus raising scholars and policy-makers' interest in the potential of mobile phones to affect economic and social development outcomes (Rotondi et al., 2020). For many people around the world, mobile phones constitute cheap, easy and effective computers, allowing not only to communicate and access information but also to obtain vital services linked to health, education, and the economy. This is particularly relevant for women who, despite technology advancements and greater diffusion, still often lag behind in digital access. According to the latest report released by the International Telecommunication Union (ITU)[1] – the UN specialized agency for ICTs – in most countries of the world women are still trailing men in benefiting from the transformational power of digital technologies: over half the total global female population (52%) is still not using the Internet, compared to 42% of all men. **Although the digital gender gap has been shrinking in the developed world, it is growing in Africa, the Arab States and the Asia-Pacific region and it is widest in developing countries, especially the least developed ones.**

To the best of our knowledge, with few relevant exceptions being Gray et al. (2017) and Hilbert (2011), the literature looking at digital gender divides in Latin America and Caribbean (LAC region, henceforth) is scant. Our analyses directly address this understudied area. In doing so, we rely on two data sources. The first source of data is the Gallup World Poll, a continuous survey of citizens in about 160 countries, representing more than 98 percent of the world's adult population, combined with indicators from the International Labour Organization (ILO).[2] In this first part of the analysis, our focus is on mobile phone ownership for one main reason: according to the latest available data from GSMA[3], across low-income countries mobile phones are the primary way most people access the Internet, with mobile broadband connections comprising 87% of total broadband connections. In the context of low-income countries, therefore, Internet access has become cheaper and more widely available due to the rapid diffusion of mobile phones. As far as the LAC region is concerned,[4] in 2019 there were 422 million unique mobile subscribers across Latin America, accounting for 67% of the total population, and this is forecasted to reach 484 million unique mobile subscribers (73%) by 2025. As shown in Figure 1, plotting the latest available ITU data from LAC countries, the percentage of the population covered by mobile-phone signal across the region is around 94% but it is heterogeneous across countries with Saint Lucia scoring the lowest (81%) and a number of countries (including Guatemala and Colombia) scoring the highest (100%). The percentage of the population covered by 3G or LTE connection is also heterogeneous. However, as GSMA suggests, 4G coverage and adoption will accelerate in Latin America over the next few years, reaching 67% by 2025, paving the way for 5G.

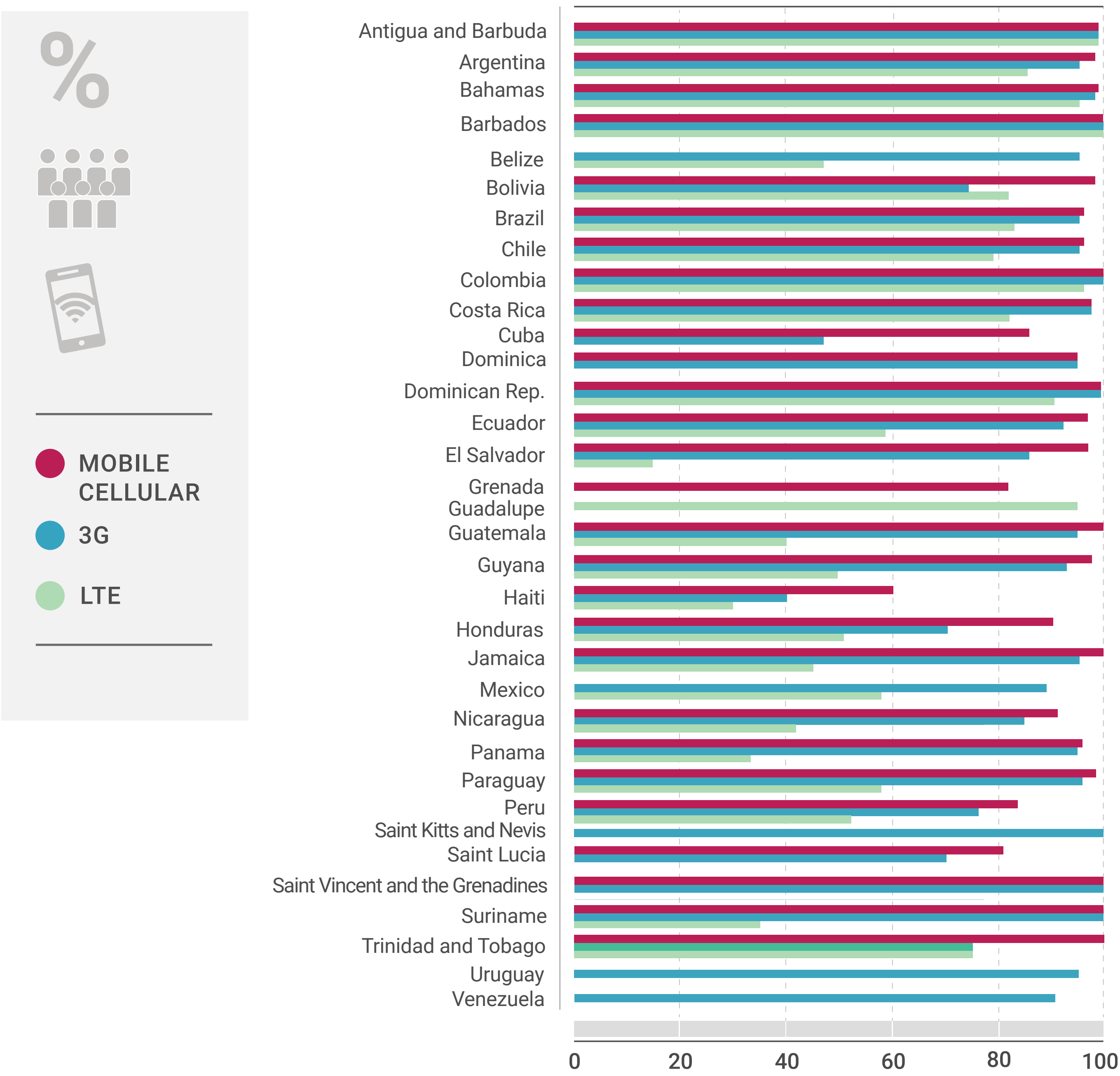
1 https://www.itu.int/en/mediacentre/Pages/2019-PR19.aspx

2 Luca Maria Pesando obtained access to these data in 2018 when he was a Postdoctoral Scholar at the University of Pennsylvania, with the help of the librarian Lauris Olson. He has since then been the sole user of these data.

3 https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/GSMA-The-Mobile-Gender-Gap-Report-2020.pdf

4 https://www.gsma.com/latinamerica/resources/the-mobile-economy-latin-america-2019/

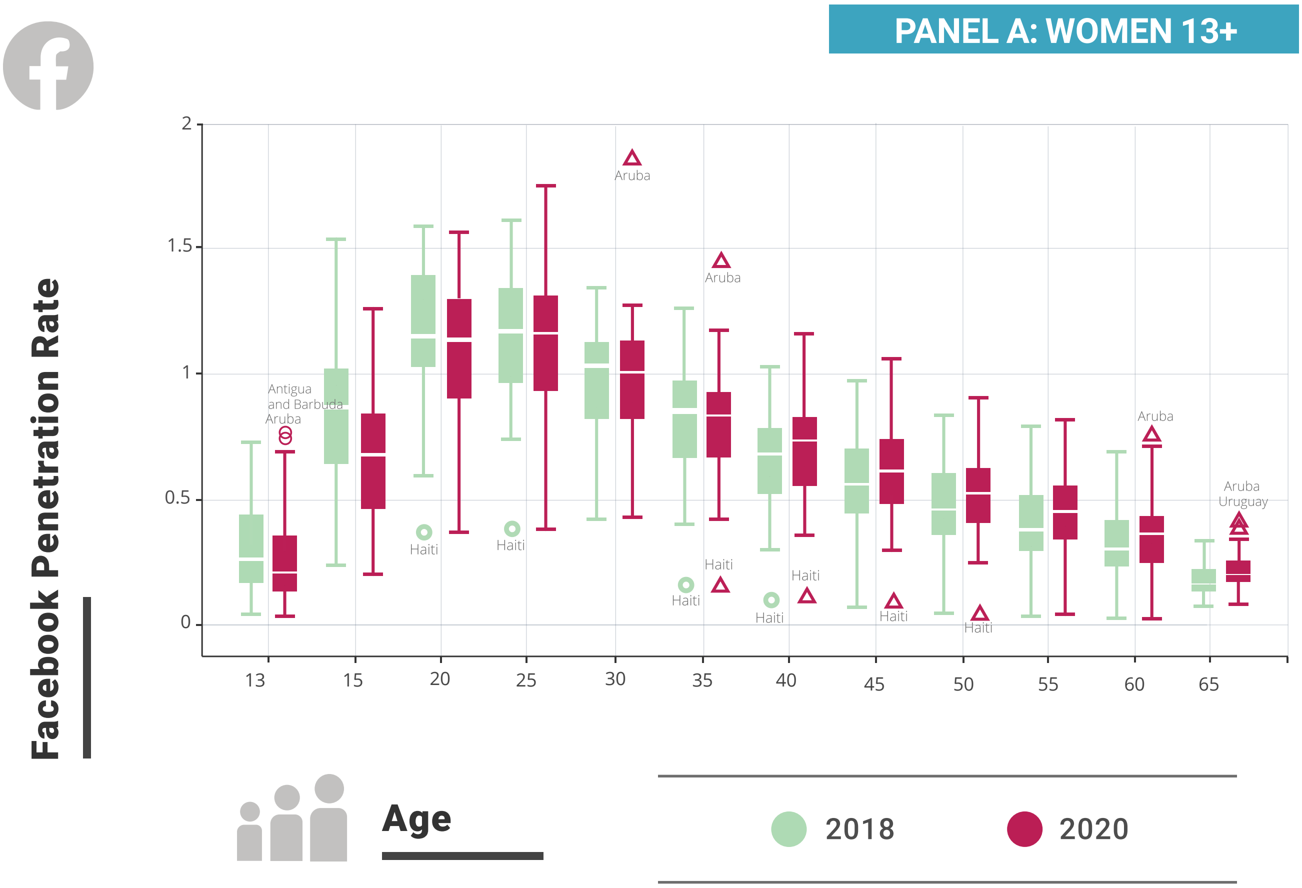
FIGURE 1. PERCENTAGE OF THE POPULATION COVERED BY MOBILE, 3G OR LTE SIGNAL



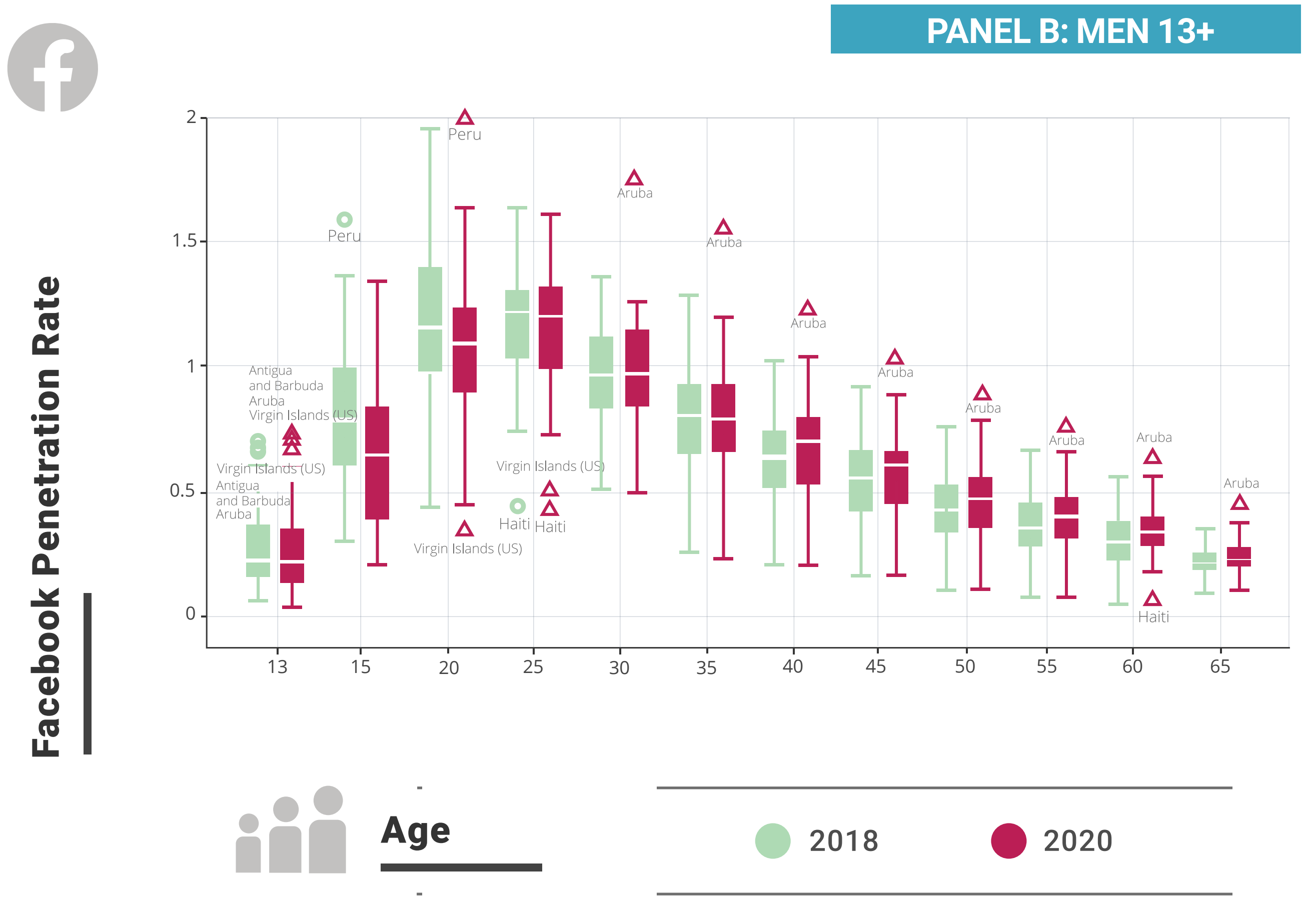
Note: Authors' elaborations from ITU data. percentage of the population covered by mobile cellular network refers to the percentage of inhabitants that are within range of at least a mobile-cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants within range of a mobile cellular signal by the total population and multiplying by 100.

The second part of our analyses focuses on a complementary measure of digital connectivity by looking at social media use by gender on one of the region's largest online populations, Facebook. We rely on data from Facebook's advertising platform, available through its marketing application programming interface (API) for this analysis. Existing research shows that gender gaps in Facebook are positively correlated with gender gaps in internet use and low-level digital skills (Fatehkia et al 2018, Kashyap et al 2020). In other words, in countries where women are underrepresented on Facebook, this may thus be a signal that they are less likely to be internet users and lack low-level digital skills in these populations. The wider geographical and more recent temporal coverage of these data compared with survey data sources, as well as more detailed information on age patterns of use available from them, motivate their use in this analysis.

FIGURE 2. BOXPLOT SHOWING THE FACEBOOK PENETRATION RATE, 2018 AND 2020 FOR 35 COUNTRIES IN THE LATIN AMERICA AND CARIBBEAN REGION



PANEL B: MEN 13+



Facebook captures a significantly large proportion of Internet users in the Latin America and Caribbean region. Facebook penetration, measured by the fraction of the population in a country who are monthly active Facebook users, is high in the LAC region.[5] Median Facebook penetration exceeds 0.5 (50%) between the ages of 15- and 50-year olds for both men and for women, as shown in Figure 2. Countries with the highest Facebook penetration rates for women in the region for 2020 were Aruba, Argentina, Ecuador, Mexico and Uruguay. For men, the highest penetration rates were in Aruba, Peru, Ecuador, Mexico and Bolivia. Median Facebook penetration in the ages of 20-30-year olds exceeds 1, which is likely due to a greater number of multiple accounts held in these age groups by users of the platform. Between 2018 and 2020, median Facebook penetration in the region decreased for the younger age groups (< 25-year olds) but stayed the same or increased among older age groups (> 25-year olds) for both men and women.

5 It is possible to examine the correlation between the Gallup gender gap in mobile ownership rate and Facebook data. The correlation is positive for both men (0.21) and women (0.23),i.e.,incountries where mobile use is higher among women and men, the fraction of the population that is a monthly active Facebook user is also higher.

This report is structured as follows:

1	We introduce some background literature.
2	We leverage the richness of the Gallup World Poll to describe, both from a micro- and a macro-level perspective, the existence of gender gaps in mobile-phone ownership in the LAC region.
3	We link macro-level indicators of gender gaps in mobile-phone ownership to indicators of gender gaps in labor-force participation and we show that online and offline gender gaps are correlated.
4	We present complementary evidence on online participation by gender drawing on digital traces left on Facebook.
5	We conclude by presenting limitations of the current report and introducing some avenues for further research.

Given its mandate to guarantee women empowerment in all roles and aspects of its institutional performance, in full accordance with the provisions of the Sustainable Development Goals (SDGs), this research offers important insight to IICA, BID, and FIDA. More specifically, the findings will be used to initiate a public debate on the consequences that the gaps in the access, skills and use of cell phones have on rural women. More importantly, they will pivotal in starting a conversation on how to effectively promote policies aimed at reducing on-line gender gaps and, ultimately, offline gaps which result in low empowerment of rural women.

Latin America and the Caribbean have 58 million rural women, 17 million are registered as economically active and only 4.5 million are considered as agricultural producers. Women in rural areas have the worst rates of employment and access to basic services, and predominantly have informal, low quality and low-paid jobs (IICA, 2019). Rural women are the main providers of food and their contribution is key to food security, through the production, sale or donation of agricultural products to families, communities, student cafeterias and organizations; however, the pandemic has disrupted everything and they have lost the possibilities of acquiring productive resources to continue producing. In the same way, access to markets to commercialize their products has been reduced or totally nullified; the agricultural value chain has been broken; and, in many cases, they have lost their formal jobs or the possibility of developing activities in the informal market. For all this, it is that a study of these characteristics has become even more necessary at this time.

BACKGROUND

Why do we care about digital gender gaps?

Mobile phones have revolutionized people's lives and everyday activities. This mobile-phone revolution has been profound and widespread and is playing out in unique ways, especially in low- income settings. With an eye to the particular features that characterize the mobile-phone revolution in low-income countries, social scientists have started to measure its consequences in specific contexts. As an example, enhanced access to mobile money has been shown to be positively and causally related to increased long-term consumption and negatively related to extreme poverty in Kenya (Suri & Jack, 2016), while health-care interventions based on mobile phones have been shown to improve the delivery of health services including access to antiretroviral and malaria therapies in Kenya as well (Zurovac et al., 2011).

We know that, if women produced under the same conditions as men, there would be a reduction in hunger between 12 and 17%; that women have access to 10% of the total credits directed to agriculture. Other statistics reinforce inequalities between rural women and men. Showing the correlation between online and offline inequalities highlights the potential that the reduction of digital gender gaps has for the improvement of women's living conditions and the promotion of their empowerment (IICA, 2019).

Can mobile phones empower women?

The social science literature suggests that phones are especially valuable to women, as they might serve as a liberator (Frissen, 1995) by reducing women's fears and sense of isolation. The liberating effect of mobile phones is likely to be larger in low-income contexts where women tend to face high barriers in their daily lives and have fewer opportunities to voice their concerns, viewpoints, ideas, or plans, and to form networks to, for instance, find jobs or start businesses. In these contexts, mobile phones may empower women by giving them better access to social and economic services, as work by Suri & Jack (2016) has shown, and also boost access to information regarding their health and wellbeing and their ability to make independent decisions (Rotondi et al., 2020). Furthermore, features unique to mobile phones, such as portability, text messaging, and data downloading, may also allow women to more easily participate in the labour force by giving them better and easier access to financial services (De Gasperin et al., 2019). By allowing women to, for instance, directly access remittances, mobile phones may enhance women's agency and support their willingness to be employed outside their household. Likewise, by granting access to finance even in remote and rural areas, mobile phones might act as an equalizer of opportunities especially for the most disadvantaged individuals. In addition, unlike desktop computers or laptops, mobile phones do not require sophisticated literacy or digital skills that many women in the context of low-income countries often lack (Fatehkia et al., 2018).

Can mobile phones help with the attainment of SDGs?

A recent paper (Rotondi et al., 2020) provides an unequivocally positive answer to this question by estimating associations between mobile-phone access and multiple indicators linked to SDGs across more than 200 countries between 1993 and 2017. Outcome measures include the Gender Inequality Index (GII) — a comprehensive macro-level indicator of gender inequality comprising reproductive health, empowerment, and economic status — the prevalence of modern contraceptive methods, the maternal mortality ratio, and (under 5 years) child mortality. The paper shows that, at the global level, mobile-phone diffusion is negatively correlated with gender inequality as measured by the GII, positively correlated with contraceptive prevalence, and negatively correlated with maternal and child mortality. These associations show nonlinearities across levels of economic development measured by gross domestic product (GDP) per-capita quintiles and are on average higher in absolute values for the lowest quintiles. These GDP gradients take the form of J, or reversed-J, curves, with mobile-phone diffusion more negatively associated with the GII, maternal and child mortality, and more positively associated with contraceptive prevalence among the least- and less-developed countries. These associations remain statistically significant and robust even after controlling for measures linked to economic development (e.g. GDP per capita) and social development (e.g. educational attainment), suggesting that mobile-phone diffusion has an important role to play independently of these factors.

Mobile phones, food security, and agricultural outcomes

A solid body of literature shows associations between access to mobile phones and Internet, and improved food security and agricultural outcomes. These studies generally suggest that mobile phones can positively impact agriculture through better access to information, markets, and financial services in the agricultural sector (Aker, 2011) and through improving farmers' ability in terms of planning farm-based activities by providing information on upcoming weather forecasts, prices (Jensen, 2007), and ease of harvest calculation (Mittal, 2016). Agricultural benefits of mobile devices extend to women farmers who make up a substantial portion of all farmers.[6] During the virtual forums, held by IICA, rural women argued that the digitization of agriculture is essential to have access to real-time information for decision-making and much more precise management. based on the use of good practices, rural women should be the focus of this trend. "The intelligent and intensive use of information and communication technologies should promote the development of productivity, with social inclusion and care for the environment for the benefit of small production, women and youth" (IICA, 2020. IICA, 2020. Rural Women and Equity in the context of the COVID-19 Pandemic: Recommendations for a New Starting Point).

In an analysis of the states of Haryana and Bihar in India, Mittal (2016) showed that as farmer groups become more aware of mobile phone technologies, women farmers in particular value the newfound access to weather-related information. Also, women show more interest in knowing

6 IICA's publication Warriors collects information about the reality of rural women in LAC, both quantitative and qualitative, as well as initiatives in favor of their empowerment, existing mechanisms and legislation that drives their rights, and the great challenges and needs that prevail (IICA, 2019). Also IICA's publication Rural Women and equity during the COVID-19 pandemic: Recommendations for a new starting point (IICA, 2020), which includes the experience developed with a cycle of virtual forums with rural women in LAC, on the differentiated effects of the pandemic in their lives.

about mobile technologies and report a feeling of empowerment in response to information. Therefore, gender gaps in ICTs need to be bridged for women to enable them to fully realize their potential (Agu, 2013). As an example, in rural communities in Ghana, the majority of smallholder female farmers have limited or no knowledge in the use of mobile phones, thus calling for educational interventions that go beyond awareness campaigns to include building the capacity of women farmers to effectively use phones in accessing useful market information, alongside more solid ICT training in schools (Owusu et al., 2018).

It is crucial to understand how patterns of advantages or disadvantages of ICTs unfold for women farmers, as some studies suggest that women with access to ICTs demonstrate similar or more interest in using them in productive ways relative to their male counterparts. Likewise, Tata and McNamara (2016) analyzed the use and effectiveness of Farmbook in Southern Africa, a farm technology application available for both mobile devices and desktop, and found that although women face more farm-level challenges in applying the knowledge they gain from Farmbook, they also report lower occurrences of technical challenges in using the application itself (Tata & McNamara, 2016). Equally important are studies not supporting the idea that mobile phones are empowering tools for women in agriculture. One example is Garcia (2011), whose analysis does not focus on low- and middle-income countries (LMICs) but nonetheless highlights important interactions between technology adoption, gender, class, and migration status. Focusing on a small community of Latino immigrant farmers in Southeast Ohio in the US, the study suggests that mobile phones are not inherently empowering to women, and under specific circumstances such as undocumented migration they can serve as a tool to strengthen hierarchical power relations between men and women (Garcia, 2011).

How are digital and offline inequalities linked?

An important issue about digital gender inequalities is whether they are the reflection of offline gender inequalities, in other words social and socioeconomic barriers that women disproportionately face, or whether digital gender gaps are instrumental in perpetuating offline inequalities themselves, particularly as digitalisation affects different domains of economic and social life.

Online inequalities often mirror sociodemographic, offline inequalities, and the digital divide by gender is one widely noted dimension of this inequality. As an example, a study of gender gaps and ICT use in Latin America and 11 countries in Africa (Hilbert, 2011) shows that gender gaps in both Internet and mobile-phone use could be entirely explained by women's lower levels of literacy, employment, and incomes within each country. Furthermore, women's access to education has been shown to be an especially important predictor of women's Internet use in LMICs (Antonio & Tuffley, 2014). **Aside from financial or institutional constraints limiting access, cultural factors may also prevent women from going online, especially in countries with conservative gender norms.**

Some authors have argued that digital gender divides close with overall ICT penetration, and with greater technology diffusion men and women use of digital technologies approaches equality (Haight et al., 2014). Some other authors, however, have questioned this interpretation by showing that the gender divide is only mildly improving as overall infrastructure for digital technologies improves (Hafkin & Huyer, 2007). If this is true, then already existing inequalities (in education, income, employment etc.) are transposed onto the digital space, thereby significantly amplifying, perpetuating, and even exacerbating gender inequality. As a result, while the digital transformation provides new avenues for the economic empowerment of women contributing to greater gender equality, digital inequality might be both the consequence of and the cause for greater offline gender inequality whenever the barriers to the emergence of an equitable information society are not promptly removed. As a result, although the potential of digital technologies for bolstering key socio-economic development outcomes has been largely documented, if digital gender inequality persists, the positive benefits of technology cannot be fully realized. **During the virtual forums held with rural women leaders and specialists on gender issues from all over LAC, held by IICA, women raised the need to ensure, in this pandemic context, access to cell phones, resources to purchase data, as well as connectivity itself, which is especially limited in rural areas. They also proposed the creation of a specific financial fund, with economic resources where rural women (especially young women) are priority targets, which also allows them to access strategic information for their ventures, for which it is key to achieve connectivity. Connectivity is also key to increasing the results of learning processes and the consequent increase in the possibilities of real insertion of women in agricultural product markets (IICA, 2020. Rural Women and Equity in the context of the COVID-19 Pandemic: Recommendations for a New Starting Point).**

DATA AND METHODS

Although gender equality in access to ICTs, and in particular to the Internet and mobile phones, has become increasingly recognized as a development goal, monitoring progress towards this goal is challenging due to the limited availability of gender-disaggregated data (Fatehkia et al., 2018). Official, nationally representative gender-disaggregated statistics on Internet and mobile access often lack coverage across countries and regular production, and data availability on these indicators is especially limited in LMICs (Hafkin & Huyer, 2007).

In order to overcome this limitation, in this report we leverage the richness of two alternative data sources. First, we use data from the Gallup World Poll, a continuous survey of citizens in 160 countries, representing more than 98% of the world's adult population. Relevant to our work, data from the Gallup World Poll provide information on mobile-phone ownership for individuals across 23 Latin American countries between 2006 and 2017, as detailed in Table 1. The data include information on mobile-phone ownership both at the individual level and at the household level. By relying on basic information related to household composition and socio-economic status (SES) – such as individual level of education, household size, household income, etc. – we can also explore some of the correlates of mobile-phone ownership or, stated otherwise, whether mobile phone ownership differs by SES or household types across countries. Furthermore, by relying on information on the sex of the survey respondent, we can explore gender gaps in mobile phone ownership and trace their changes overtime between 2006 and 2017.

Second, we use data retrieved from Facebook's marketing API to analyse digital gender gaps, as seen from the perspective of social media use by gender. As one of the largest social media platforms in the world with over 2.7 billion monthly active users, and with significant coverage among Internet users in the Latin American region (see Figure 2), Facebook provides a complementary indicator of digital gender gaps. Facebook makes its revenue from targeted advertising and to support advanced targeting options provides information on the aggregate numbers of users by demographic attributes such as age, gender, geography, and others such as interests expressed on Facebook and information on the device used to access Facebook. Aggregate data are the numbers of Facebook users are implicitly made available to advertisers who can choose to show their advertisement to, say, men aged 18+ living in India and using an iPhone 7. Before the advertisement is launched and before any cost is incurred, Facebook provides the advertiser with information on the audience size, i.e., on how many users match the given targeting criteria. This information is of use to the advertiser as it affects the total expected ad cost. From a social research perspective, the same data can be used as a kind of digital census across Facebook's users, which can be queried with questions such as "how many Facebook users match criteria X?". As more than half of all Internet users are also Facebook users, the data have the potential to capture sizable online populations in real-time (Fatehkia et al., 2018; Kashyap et al., 2020). For the purpose of this study, data on the aggregate number of Facebook users disaggregated by age and gender in a given country were used. Data from Facebook's marketing API are regularly collected as a part of the Digital Gender Gaps project (www.digitalgendergaps.org) led by Ridhi Kashyap of the University of Oxford. Facebook data were available for 35 countries in the Latin America and Caribbean region, thereby providing wider geographical coverage than the Gallup poll. The Facebook data are also more recent than the Gallup survey, and in this analysis, we draw on data from 2020 (we also report data from 2018 in Figure 2). Using these data, we analyse Facebook use by gender in countries of the region.

TABLE 1: DATA ON MOBILE OWNERSHIP BY GENDER FROM GALLUP WORLD POLL

Name of data set	Countries	Years
Gallup World Poll	Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay	2006; 2010; 2011; 2012; 2015; 2016; 2017
Gallup World Poll	Haiti	2006; 2010; 2011; 2012; 2013; 2015; 2016; 2017
Gallup World Poll	Jamaica	2006; 2011; 2013; 2017
Gallup World Poll	Puerto Rico	2006
Gallup World Poll	Suriname	2012
Gallup World Poll	Trinidad and Tobago	2006; 2011; 2013; 2017
Gallup World Poll	Venezuela	2006; 2007; 2010; 2011; 2012; 2015; 2016; 2017

TABLE 2: DATA ON SOCIAL MEDIA USE BY GENDER RETRIEVED FROM FACEBOOK MARKETING API

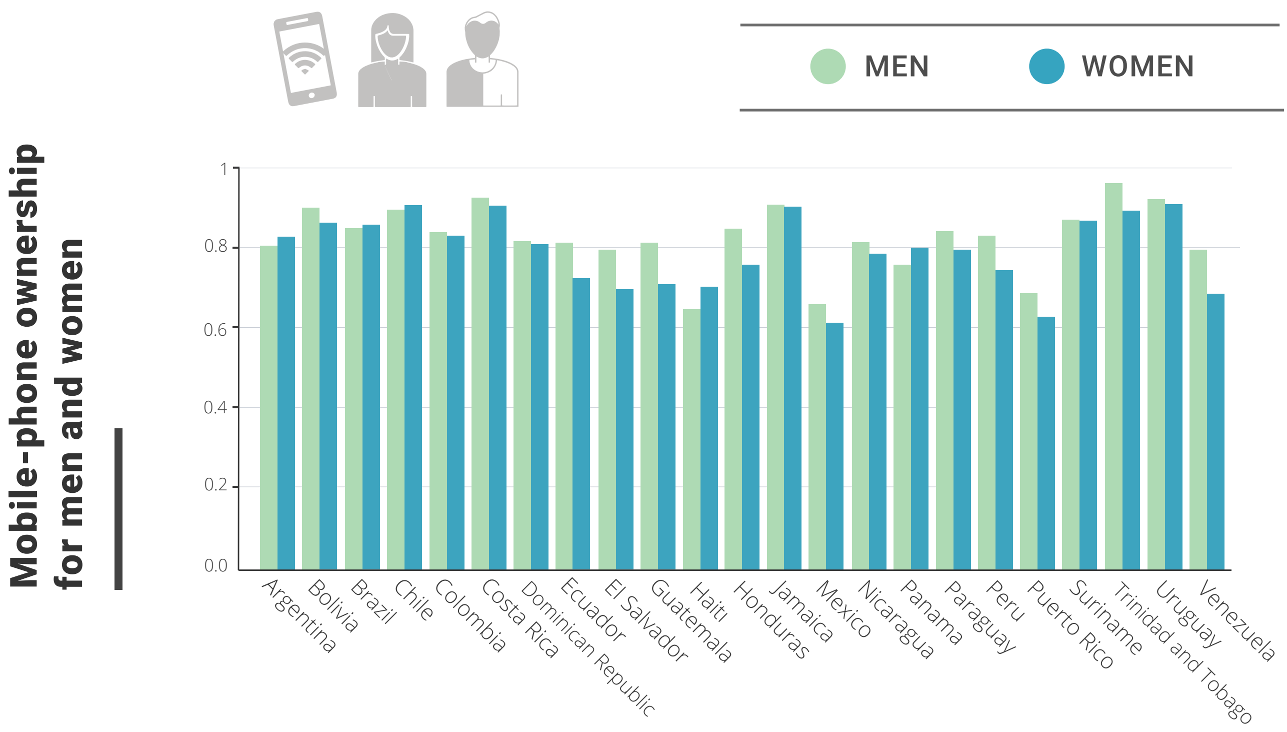
Name of data set	Countries	Years
Facebook marketing API (monthly active users (MAU) audience estimates)	Data collected for 193 countries, including 35 countries in the Latin America and Caribbean region. Countries include: Virgin Islands (U.S.), Venezuela, Uruguay, Barbados, Jamaica, Argentina, Curacao, Saint Lucia, Panama, Chile, Grenada, Brazil, Saint Vincent and the Grenadines, Puerto Rico, Bahamas, Trinidad and Tobago, Costa Rica, Suriname, Antigua and Barbuda, Belize, Haiti, French Guiana, El Salvador, Dominican Republic, Peru, Mexico, Colombia, Ecuador, Paraguay, Guatemala, Nicaragua, Guyana. Honduras, Bolivia, Aruba	2018 (data collected during September 2018) and 2020 (data collected during February 2020)

RESULTS

Mobile-phone ownership across the LAC region: Gallup data

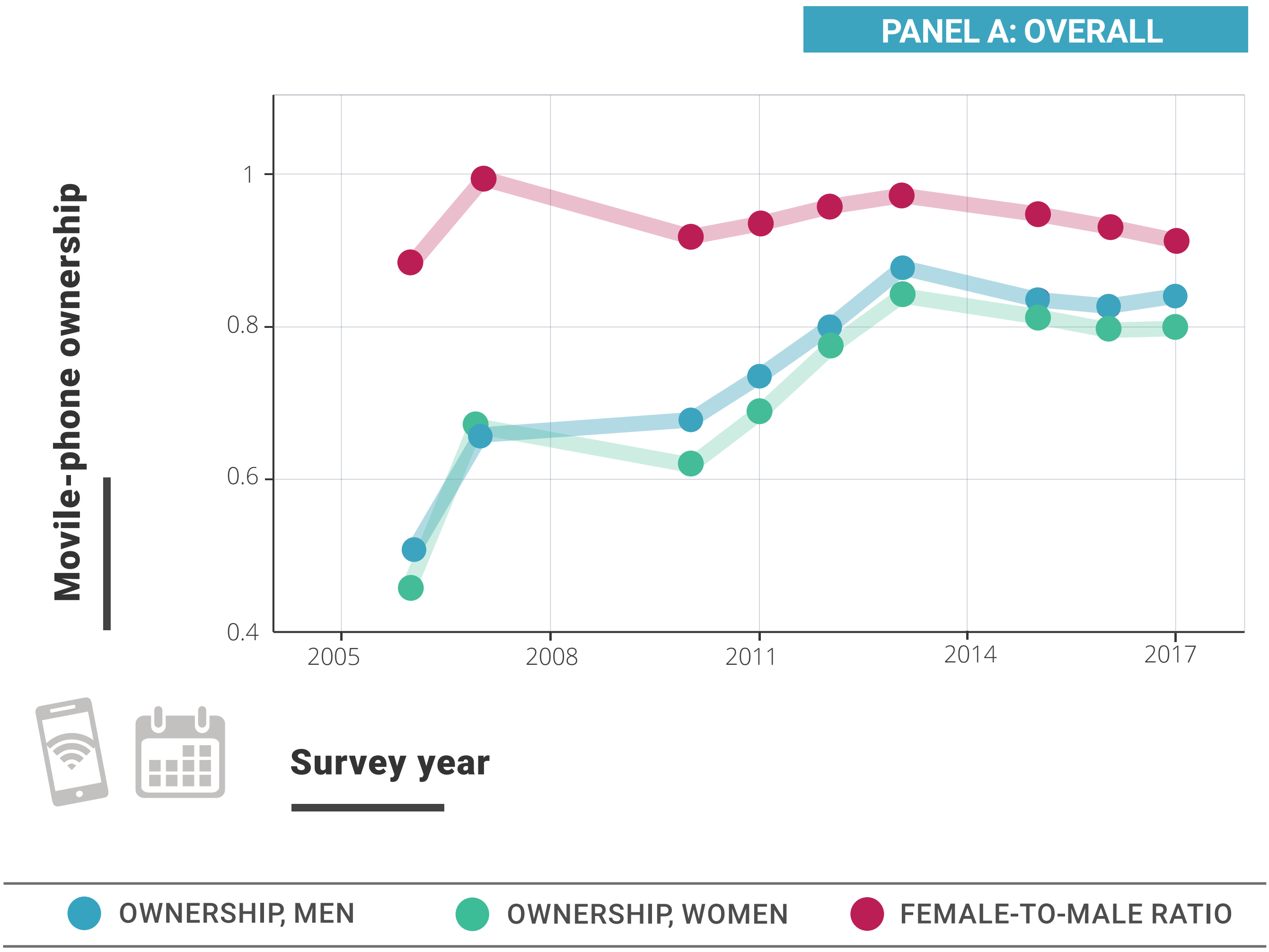
Figure 3 makes use of the latest available Gallup surveys to estimate mobile-phone ownership by sex of the owner across 23 Latin American countries under analysis.

FIGURE 3: MOBILE-PHONE OWNERSHIP FOR MEN AND WOMEN, ESTIMATE FROM LATEST GALLUP SURVEY YEAR AVAILABLE

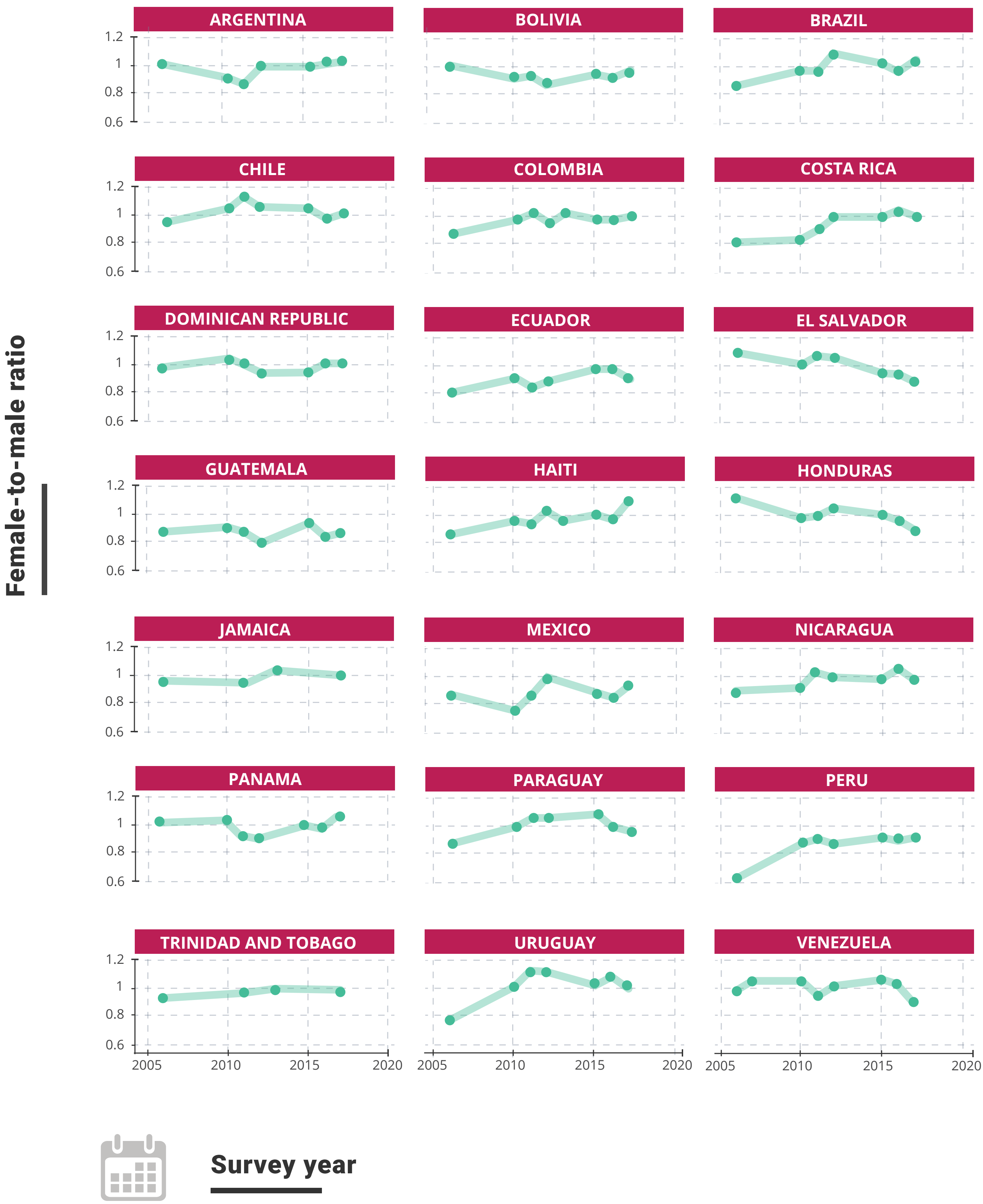


The figure provides first descriptive evidence on the existence of a digital gender gap in mobile-phone ownership in the LAC region. In line with our expectations, in 17 out of 23 countries women are less likely to report to own a mobile phone with respect to their male counterparts. Panel A of Figure 4 tracing mobile-phone ownership and the female-to-male ratio in mobile-phone ownership over time provides two sets of results. First, mobile-phone ownership has increased from about 45% in 2006 to about 80% in 2017 for the whole sample of countries combined, i.e., it has nearly doubled. Second, there exists an overall digital gender gap in mobile-phone ownership (female-to-male ratio<1) that is gradually narrowing over time, yet with an apparent worsening over the last half decade. Panel B of Figure 4 shows, however, that there is significant heterogeneity between countries, with some countries (such as Argentina and Brazil) which have achieved almost gender equality in mobile-phone ownership since 2010 and others (such as Guatemala and Peru) which are lagging behind. There are also interesting cases such as Chile and Uruguay, where the female-to-male ratio tends to favor women (ratio>1).

FIGURE 4: MOBILE-PHONE OWNERSHIP OVER TIME. ESTIMATE GALLUP POLL

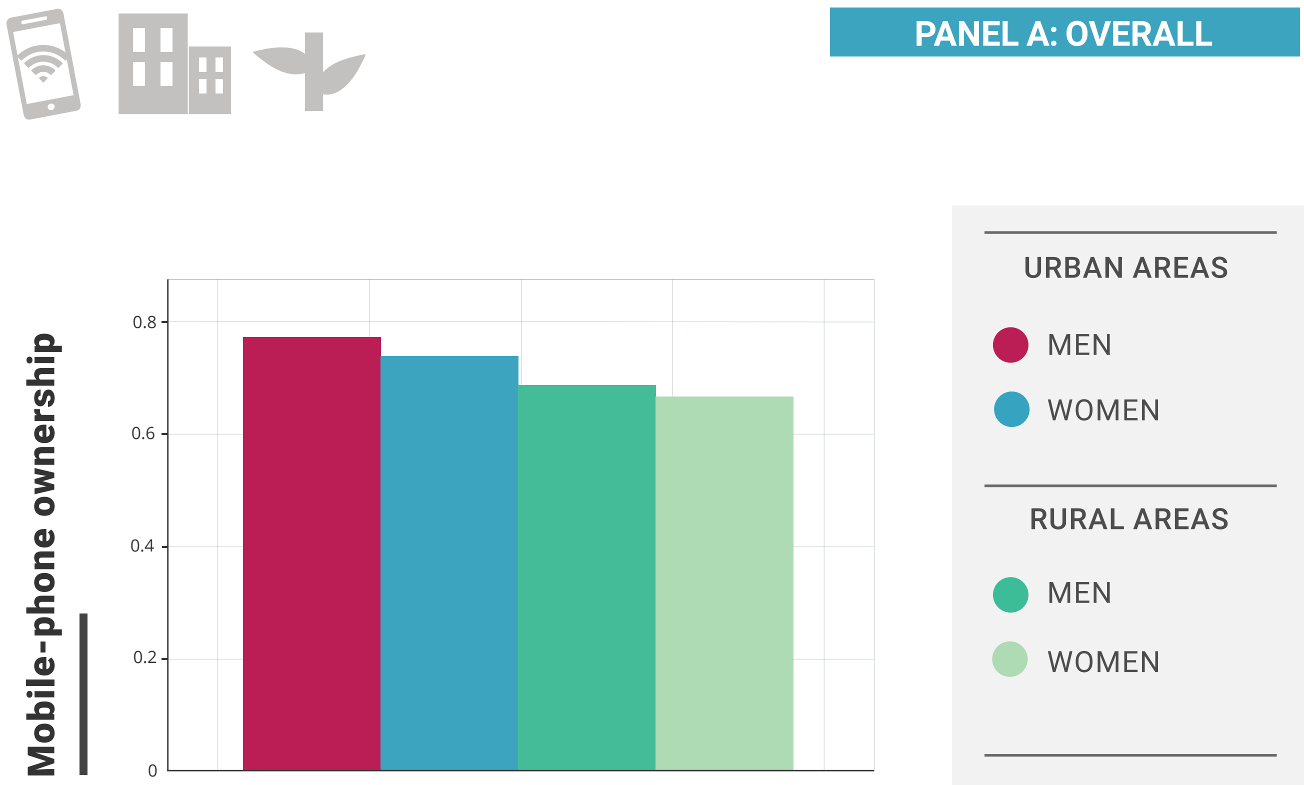


PANEL B: BY COUNTRY AND OVER TIME



Panel A of Figure 5 suggests the existence of additional heterogeneity. Not only mobile-phone ownership is, on average, lower for women, but it also varies according to rural/urban divides. Findings from Figure 5 are clear, providing evidence of a gradient whereby ownership is higher among males in urban areas, followed by females in urban areas, followed by males in rural areas and females in rural areas. In other words, gender and household location of residence interact with each other producing multiple layers of disadvantage for women living in rural areas – who turn out to be the least "connected" group. This is further confirmed by panel B, which shows trends in these four variables over time, confirming the clear gradient, yet also highlighting wider gaps between men and women in urban areas rather than in rural areas, with an overall tendency towards convergence among the four variables over the past few years. **Studying the gender gaps in access to mobile telephony in rural areas is of utmost importance, to identify affirmative actions that reduce those gaps and address the relationship between such access and the empowerment of rural women, who face conditions of poverty, greater economic, social and political disadvantage than urban women, in general.**

FIGURE 5: MOBILE PHONE OWNERSHIP BY SEX AND LOCATION OF RESIDENCE, ALL COUNTRIES COMBINED. ESTIMATE FROM LATEST GALLUP SURVEY YEAR AVAILABLE



PANEL B: OVER TIME

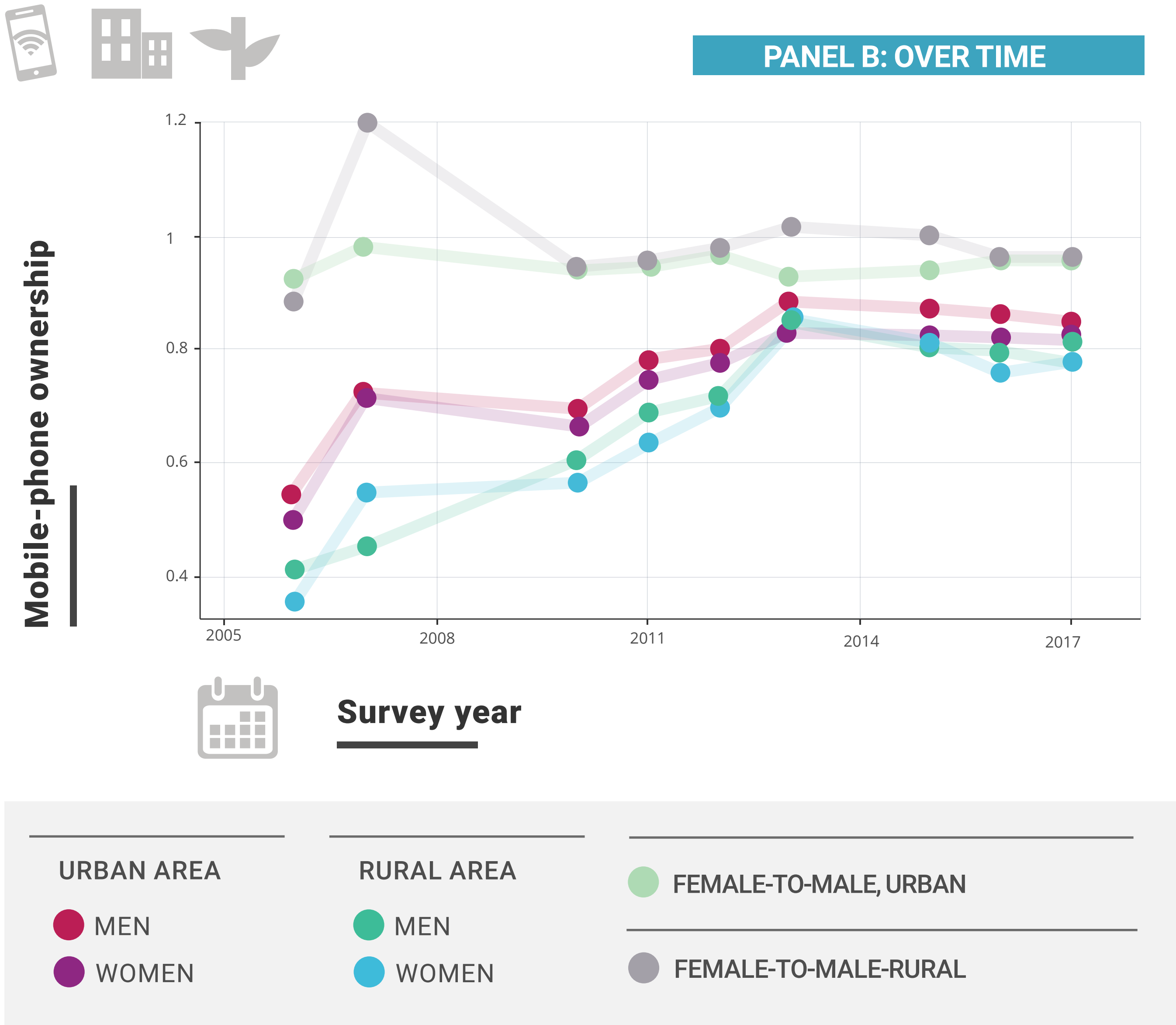


TABLE 3: REGRESSIONS OF INDIVIDUAL-LEVEL VARIABLES ON MOBILE-PHONE OWNERSHIP

Mobile-phone ownership	(1)	(2)	(3)	(4)	(5)	(6)
Female=1 (Ref.: Male)	-0.031*** (0.002)	-0.032*** (0.002)	-0.021*** (0.002)	-0.018*** (0.003)	-0.018*** (0.004)	-0.010+ (0.005)
Education=Secondary (Ref.: Primary or less)			0.209*** (0.003)	0.209*** (0.003)	0.212*** (0.004)	0.218*** (0.005)
Education=Tertiary (Ref.: Primary or less)			0.304*** (0.004)	0.304*** (0.004)	0.303*** (0.006)	0.317*** (0.010)
Living in urban area (Ref.: Rural)			0.039*** (0.002)	0.041*** (0.003)	0.039*** (0.002)	0.051*** (0.006)

Mobile-phone ownership	(1)	(2)	(3)	(4)	(5)	(6)
(Female=1) x (Urban=1)				-0.006 (0.005)		-0.021** (0.008)
(Female=1) x (Education=Secondary)					-0.006 (0.005)	-0.016* (0.007)
(Female=1) x (Education=Tertiary)					0.002 (0.008)	-0.013 (0.013)
(Education=Secondary) x (Urban=1)						-0.014+ (0.007)
(Education=Tertiary) x (Urban=1)						-0.025* (0.012)
(Female=1) x (Education=Secondary) x (Urban=1)						0.023* (0.010)
(Female=1) x (Education=-Tertiary) x (Urban=1)						0.030+ (0.017)
Wave Year = 2007		0.208*** (0.015)	0.221*** (0.016)	0.221*** (0.016)	0.221*** (0.016)	0.221*** (0.016)
Wave Year = 2010		0.216*** (0.004)	0.200*** (0.006)	0.200*** (0.006)	0.200*** (0.006)	0.200*** (0.006)
Wave Year = 2011		0.274*** (0.004)	0.258*** (0.006)	0.258*** (0.006)	0.258*** (0.006)	0.258*** (0.006)
Wave Year = 2012		0.318*** (0.004)	0.307*** (0.006)	0.307*** (0.006)	0.307*** (0.006)	0.307*** (0.006)
Wave Year = 2013		0.356*** (0.010)	0.338*** (0.010)	0.338*** (0.010)	0.338*** (0.010)	0.339*** (0.010)
Wave Year = 2015		0.396*** (0.004)	0.380*** (0.006)	0.380*** (0.006)	0.380*** (0.006)	0.380*** (0.006)
Wave Year = 2016		0.383*** (0.004)	0.366*** (0.006)	0.366*** (0.006)	0.366*** (0.006)	0.366*** (0.006)
Wave Year = 2017		0.374*** (0.004)	0.357*** (0.006)	0.357*** (0.006)	0.357*** (0.006)	0.357*** (0.006)
Constant	0.730*** (0.002)	0.452*** (0.003)	0.301*** (0.005)	0.300*** (0.006)	0.300*** (0.006)	0.294*** (0.006)
Country dummies	No	Sí	Sí	Sí	Sí	Sí
Observations	136996	136996	120707	120707	120707	120707
R-squared	0.001	0.112	0.145	0.145	0.145	0.145

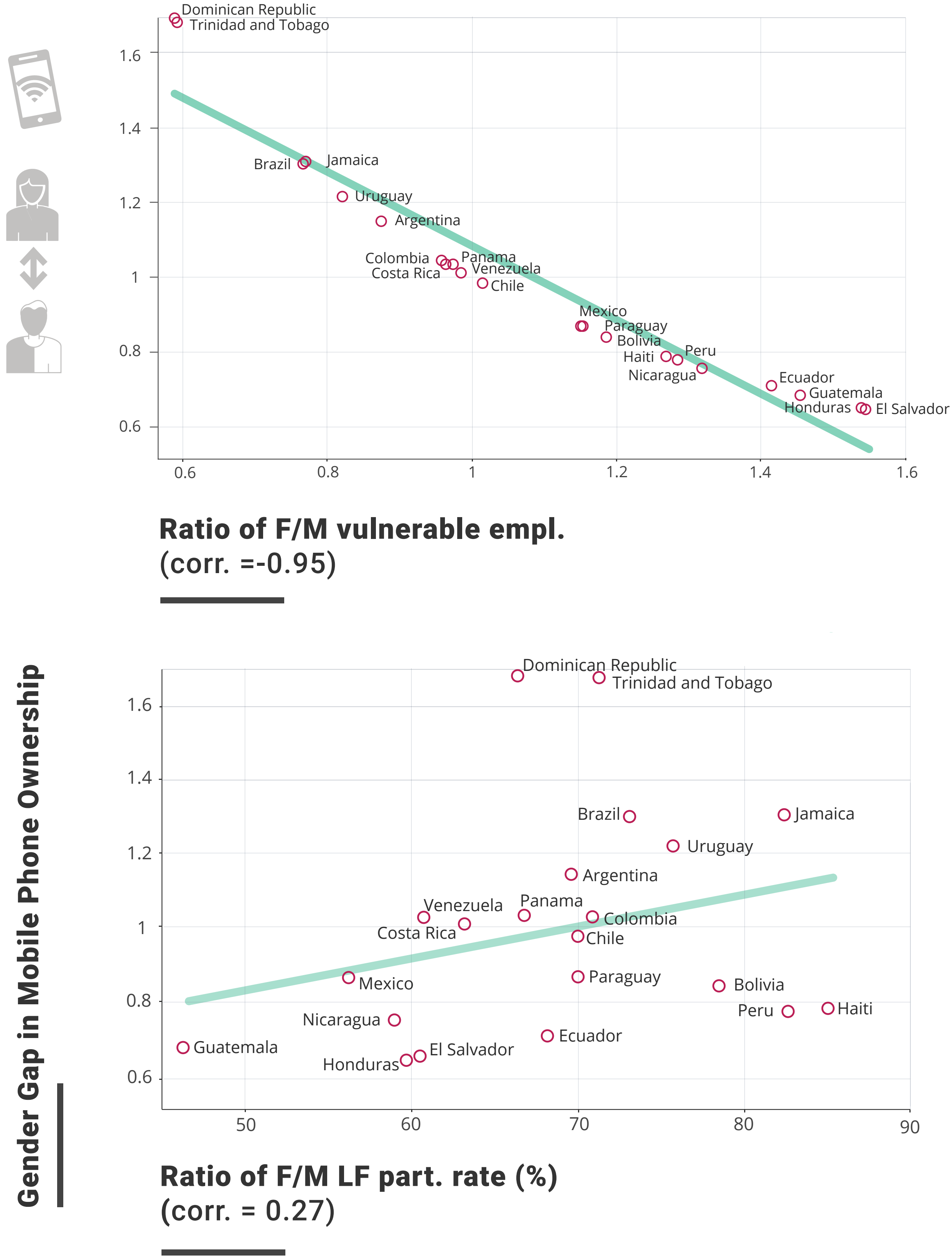
Standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

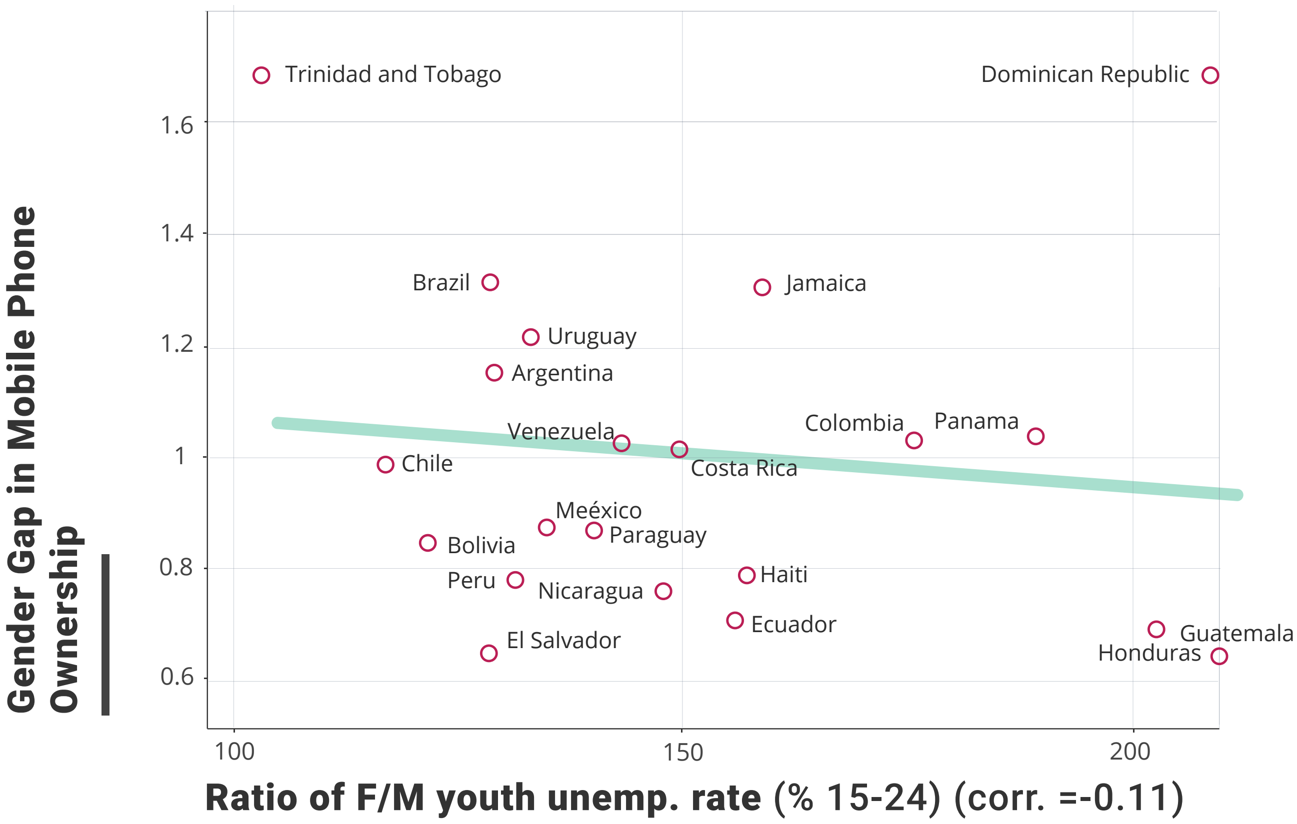
From a micro-level perspective, Table 3 shows that, irrespective of specification, female respondents are less likely to own a mobile phone than their male counterparts. While the inclusion of socio- demographic and economic characteristics decreases the size of the gender gap by a third, the coefficient estimates even with the controls included remain strongly statistically significant, suggesting that the gender gap persists even after accounting for individual level of education and household location of residence. Yet, estimates from model 4 including an interaction between gender and household location of residence suggest that there is no statistical difference in mobile-phone ownership between females in rural areas and females in urban areas, as well as there is no statistical difference in ownership between low-educated females and high-educated females (column 5). The real difference emerges once three-way interactions between gender, household location of residence, and education are included in the model. In this case, we observe that mobile phone ownership is significantly higher for higher-educated females living in urban areas, confirming again the double disadvantage brought about by the interacting gender, socio-economic status, and location of residence (rural) dimensions.

Digital and offline gender gaps

Mobile phones have been shown to offer “leapfrog” opportunities for women also by increasing their employment options (De Gasperin et al., 2019), ultimately building a more inclusive world. Due to the limited number of outcomes measuring women’s status vis-à-vis men at the individual level in the Gallup dataset, we complement micro-level analyses with country-level analyses exploring the correlation between gender gaps in mobile-phone adoption and three measures of women’s empowerment, namely the ratio of female to male vulnerable employment rate, the ratio of female to male labor-force participation rate, and the ratio of female to male youth unemployment. These outcomes have been merged at the country-year level drawing information from the ILO. The results of this simple exercise are depicted in Figure 6. Notice that while the women’s empowerment outcomes are measured in 2019, the gender gaps in mobile ownership are measured in 2017, hence reducing the issue of contemporaneity in measurement and minimizing reverse-causality concerns.

FIGURE 6: CORRELATION BETWEEN DIGITAL AND OFFLINE GENDER GAPS LINKED TO WOMEN'S ECONOMIC EMPOWERMENT





Note: Gender Gap in Mobile Phone Wwnership (GALLUP) is calculated as the female-to-male ratio in mobile phone ownership. Ratio of female to male vulnerable employment rate is calculated by dividing female vulnerable employment by male vulnerable employment. Vulnerable employment is contributing family workers and own-account workers as a percentage of total employment. Ratio of female to male labor force participation rate is calculated by dividing female labor force participation rate by male labor force participation rate and multiplying by 100. Ratio of female to male youth unemployment is the percentage of female to male youth unemployment rates. These measures have been derived using data from International Labour Organization, ILOSTAT database. The data were retrieved in june 21, 2020.

Although we acknowledge that these analyses may well be affected by ecological fallacy, they show that there are some interesting relationships between our measure of digital gender gap and other offline gender gaps, especially in vulnerable employment. More specifically, they show that when the digital gender gap is lower – by which we mean that the ratio is closer to 1 or even higher than 1 – the labor-market prospects for women are better (as measured by data from two years later, in 2019). This is particularly apparent for the female-to-male ratio in vulnerable employment and the female-to-male ratio in labor-force participation rate. For the former, as digital gender gaps worsen (i.e., the ratio gets closer to zero), female vulnerable employment relative to male vulnerable employment is more common, with a very high correlation (0.95, in absolute value). For the latter, as digital gender gaps worsen, female labor force participation relative to male labor force participation is also lower, with a correlation of 0.27. The association between female-to-male ratio in mobile-phone ownership and female-to-male ratio in youth unemployment rate is also in the expected direction, yet the correlation is weaker (~0.11).

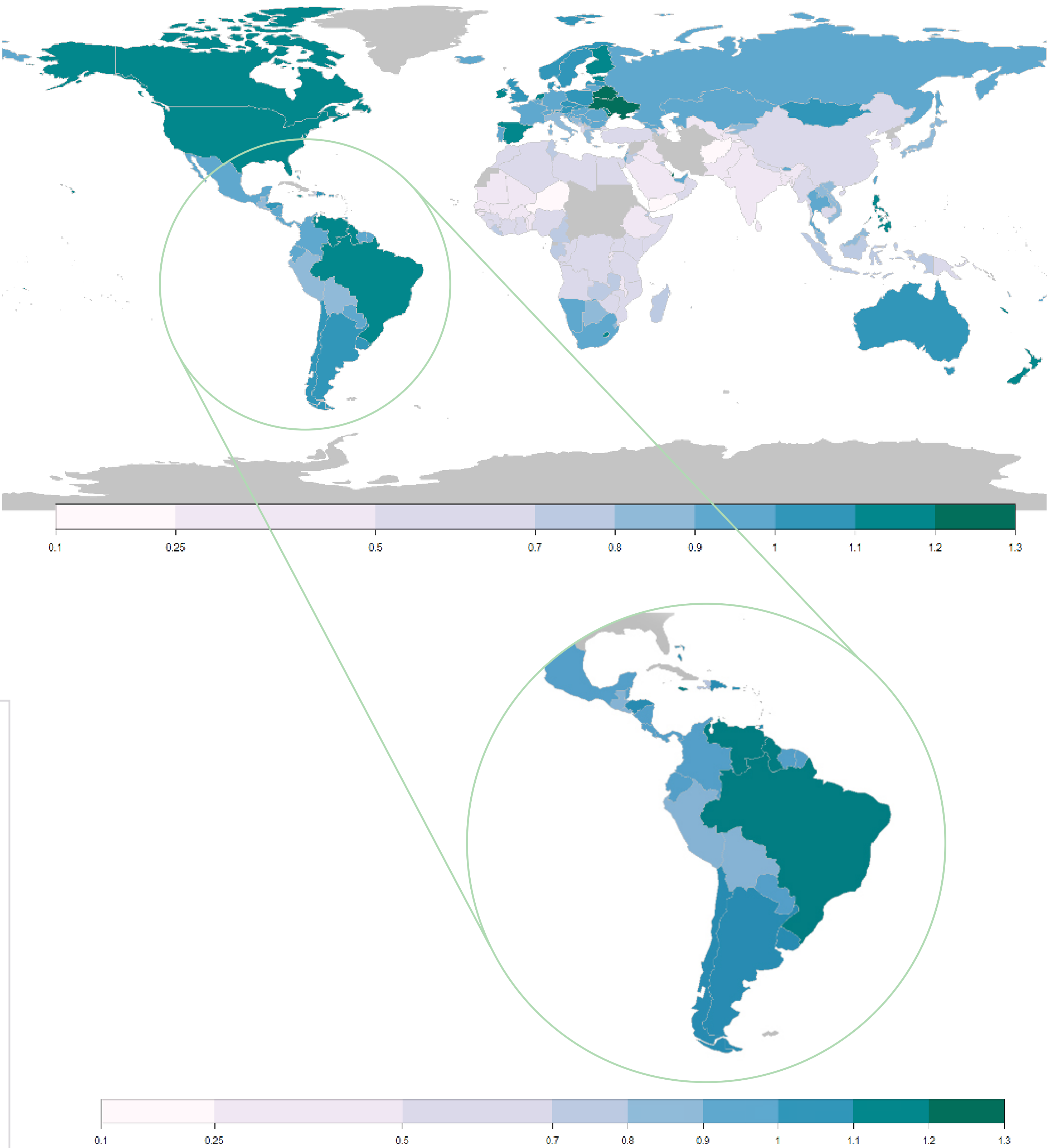
Using digital traces to study digital gender gaps in the LAC region

The upper panel of Figure 7 shows the Facebook gender gap index (FB GGI), which is defined as the ratio of female-to-male monthly Facebook users divided by the female-to-male ratio of the population. Further details about this indicator are available in Kashyap et al (2020) and Fatehkia et al (2018). The data pertain to monthly active users on Facebook as retrieved in February 2020. The comparative advantage of the Facebook data is their broader geographical coverage compared with survey data sources that have coverage on ICT indicators, and ability to retrieve data regularly through the marketing API.

The FB GGI captures the female-to-male (gender gap) patterns of Facebook penetration in the world. Compared with regions of the world such as Sub-Saharan Africa and Asia where women are much less likely to be Facebook users than men, male and female Facebook penetration (use) in Latin America is more balanced across the 35 countries of the region for which Facebook data are available. The lower panel of Figure 7 zooms in a bit further into the Latin America and Caribbean region. These maps focus on national-level patterns and differences by gender. However, there is undoubtedly likely to be significant variations in gendered patterns of use at the subnational level, particularly in large countries such as Brazil, and by urban-rural geography as shown in the Gallup data above for mobile ownership gender gaps. These are avenues for further extension of this work.

In several countries of the region, including Brazil, Argentina, Venezuela, Chile, Suriname, Uruguay and in much of the Caribbean, women are more likely to be Facebook users than men (FB GGI > 1). In other countries in the region, including in the Central American region (e.g. Nicaragua, Guatemala) men are slightly more active on Facebook (FB GGI < 1). This is shown in Figure 8, where the FB GGI indicators for each country in the region for which data are available are reported from lowest to highest.

FIGURE 7: MAP OF THE FACEBOOK GENDER GAP INDEX FOR THE WORLD (UPPER PANEL) AND FOR THE LATIN AMERICA AND CARIBBEAN REGION (LOWER PANEL). DATA FROM FEBRUARY 2020



Note: The Facebook Gender Gap Index is defined as the ratio of female-to-male Facebook users divided by the female-to- male ratio of the population in a given country

FIGURE 8: FACEBOOK GENDER GAP INDEX (FB GGI) FOR COUNTRIES IN THE LATIN AMERICA AND CARIBBEAN REGION

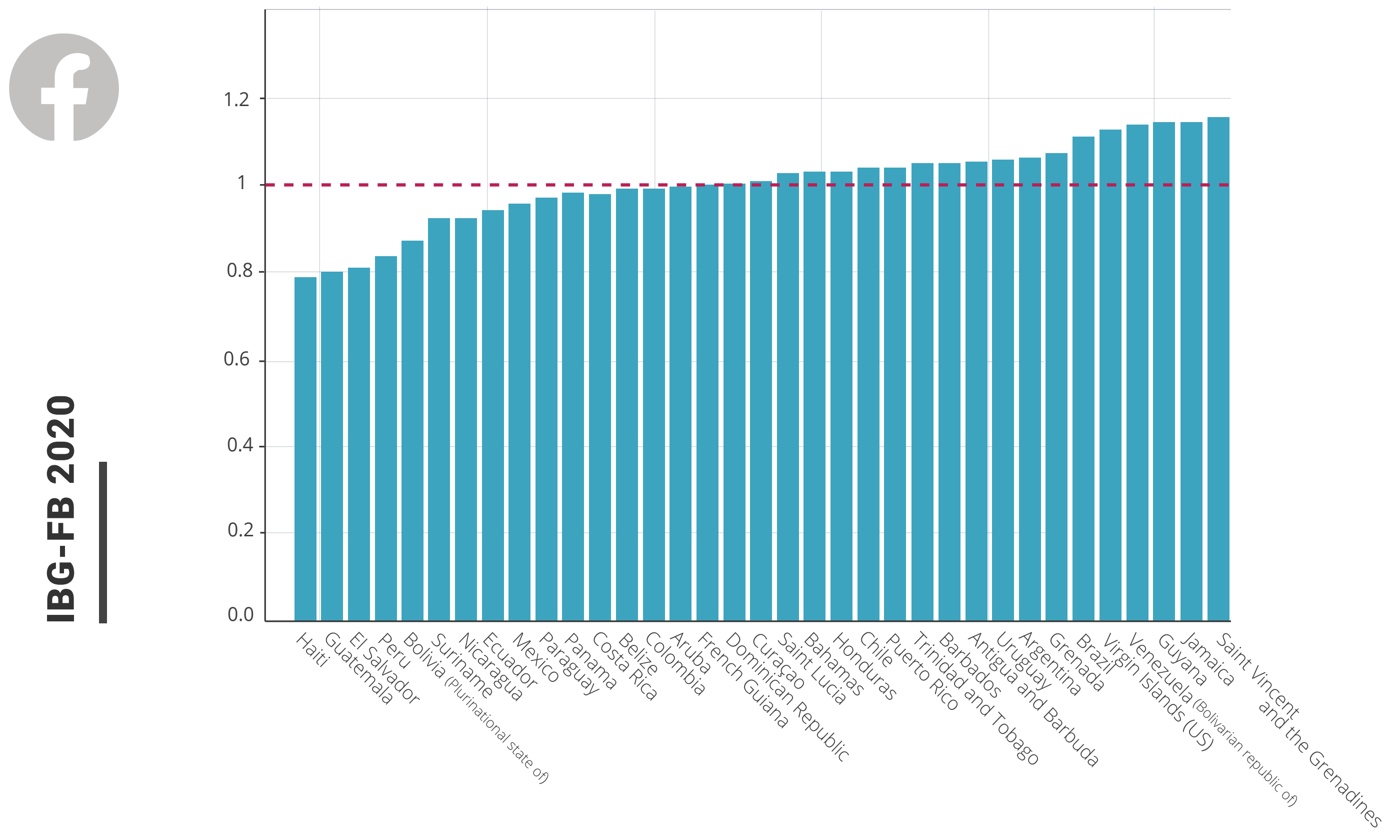
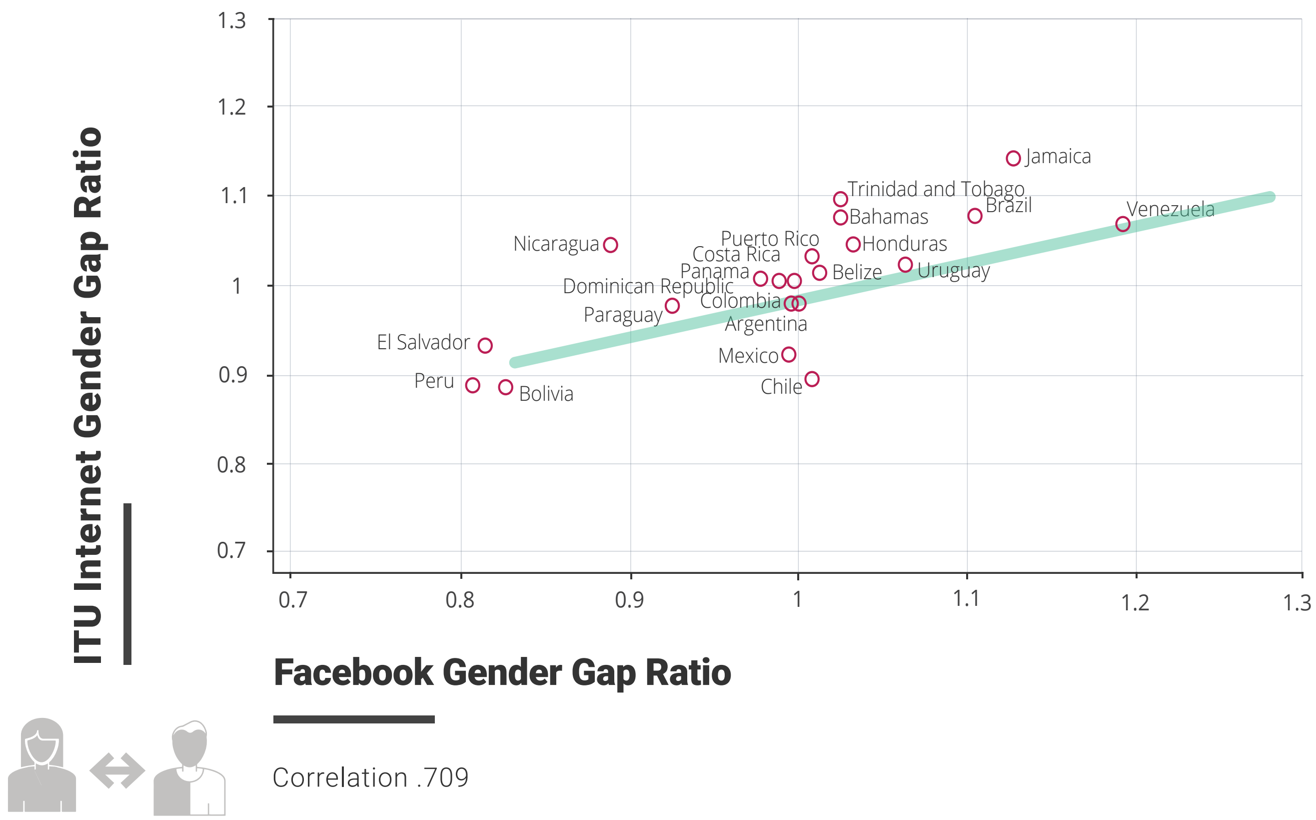


FIGURE 9: CORRELATION BETWEEN FACEBOOK GENDER GAP (HORIZONTAL AXIS) AND ITU INTERNET GENDER GAP (VERTICAL AXIS) FOR 21 COUNTRIES IN LAC REGION



Correlation .709

As shown in previous work (Fatehkia et al 2018, Kashyap et al 2020), gender gaps on Facebook are good predictors of gender gaps in internet use and low-level digital skills. In other words, in countries where women are underrepresented on Facebook, this serves as a good predictor that they are not internet users and lack the digital skills required to access social media platforms. This pattern is also confirmed for the Latin America and Caribbean region, as shown in Figure 9, which shows the correlation between the internet use gender gap (female-to-male ratio of internet use) computed using data from the International Telecommunications Union (ITU) and the FB GGI. The ITU data are available only for 21 countries in the region, and come from surveys that were fielded at different time points in each country (ranging between 2012 and 2018). For the countries for which both Facebook data and ITU indicators are available, the correlation is strong and positive (0.71), suggesting that for the region the FB GGI serves as a good proxy for internet use gender gaps. In contrast with the ITU data however, the Facebook data covers more countries (35 versus 21 in ITU).

CONCLUSIONS

Conclusions and avenues for further research

The World Bank recently stated that the ongoing COVID-19 pandemic has shown that digital connectivity is a public good.[7] However, while about half the world's population has access to the Internet, the other half is still offline.[8] The road to ensuring equality is still long. In this regard, mobile phones hold great potential. However, mobile phones are also spread unevenly. Inequalities in access to ICTs in general, and mobile phones in particular, if not effectively addressed, might exacerbate inequalities that already exist in the world, such as those between men and women.

With this report we have described – both at the macro and the micro-level – the digital gender gap existing in the LAC region. More specifically, we have shown that, overall, there exists a digital gender gap in mobile-phone ownership that is gradually narrowing over time, yet with an apparent stagnation in improvements over the last half decade. We have also shown the existence of an additional divide whereby women living in rural areas turn out to be the least "connected." Finally, we have shown that in countries where digital gender gaps are lower, the gender gap in vulnerable employment, in youth unemployment and in labor-force participation are lower as well. We have then introduced a complementary measure of digital connectivity by looking at

7 https://blogs.worldbank.org/voices/covid-19-reinforces-need-connectivity?cid=ECR_TT_worldbank_EN_EXT.

8 https://www.itu.int/en/mediacentre/backgrounders/Pages/digital-inclusion-of-all.aspx

the gender composition of users on one of the region's largest social media platforms, Facebook. The Facebook gender gap index, which is defined as the ratio of female-to-male Facebook user divided by the female-to-male ratio of the population shows that, compared with regions of the world such as Sub-Saharan Africa and Asia where women are much less likely to be Facebook users than men, male and female Facebook penetration (use) in Latin America is more balanced. Nevertheless, even with this indicator we see significant heterogeneities in the region in online, social media connectivity by gender.

At present, the data we have, only allow us to describe these divides, as we have done, at the country- level. **Understanding how gender gaps in digital access vary at the subnational level in the region is the next step towards a deeper understanding of these inequalities, as well as in understanding the relationship between online and offline gender inequalities.** Data on Facebook gender gaps can be retrieved at a higher level of geographical granularity to understand these patterns and relationships more closely at the state and district-levels, and in next steps of this work we will explore this aspect further. Furthermore, data limitations have forced us to focus only on the analysis of the first-level digital divide. However, there are good reasons to believe that further important gaps are related to the different digital skills (second-level digital divide) between men and women and, also, to the different capability in getting the most out of technology in terms of outcomes (third-level digital divide).

Secondary data on these topics are scant at most. The cross-country surveys that we have explored in the region do not reach this level of detail. At the same time, it is difficult given the current pandemic situation to hypothesize to administer a survey with the tools of traditional social sciences. Once again, online social networking platforms can come to our aid.

As we have already indicated above, for example, Facebook offers a wealth of information that exceeds the mere number of people who create an account through the platform. Potentially, we could know, always with a higher level of granularity than the national scale, with which device men and women connect, at what time of day, how many friends they have, etc. Furthermore, as recent studies show, social media platforms can be effectively used to collect survey data that reaches even the most remote places through specific geolocalized targeting. Once the appropriate weights are applied, these data can be used to conduct robust quantitative analyses.

These opportunities, given by digitalization, can enable data collection opportunities to overcome existing data gaps. These new data opportunities, if analyzed in parallel with the already existing secondary data, can offer particularly important policy implications at a time when digital connectivity and literacy are considered as public goods of primary importance especially for the poorest and most marginalized.

Given rural women's access to this type of resource, along with others such as land, seeds, technologies, markets, etc., is lower than men's, it is important for IICA to be able to map the level of access and the management of rural women using this technology. It is key, in a context in which IICA is adapting its offer of technical cooperation to virtual modalities.

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IICA – Inter-American Institute for Cooperation on Agriculture
Organism of the Inter-American System specialized in agricultural and rural development.

IDB – Inter-American Development Bank
Main source of financing for development in Latin America and the Caribbean.

IFAD – International Fund for Agricultural Development
United Nations specialized financial institution.
Invest in the rural population.

Editorial Production: IICA
Graphic Design: Nadia Cassullo