



Connected Women

The Mobile Gender Gap Report 2021



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For this study, Basis worked with the GSMA as a partner in the qualitative field research and analysis. The views expressed in this report do not necessarily reflect those of Basis.



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Introduction

Owning a mobile phone and accessing the internet can be life changing. The scale and reach of mobile technology is enabling billions of people around the world to access crucial services and information to meet their life needs, often for the first time. Over 3 billion people in low- and middle-income countries (LMICs) now access the internet on a mobile phone.¹ Mobile is the primary way men and women access the internet in developing countries, accounting for 85 per cent of broadband connections in 2020.²

Yet, mobile ownership and use remain unequal. While 83 per cent of women across LMICs now own a mobile phone and 58 per cent use mobile internet,³ women are being left behind in an increasingly connected world. Women are still less likely than men to have access to mobile phones and use mobile services. This is particularly true for women who are the most underserved, including those who have low literacy levels, low incomes, live in a rural area or have a disability.⁴ However, gender itself is a factor in many parts of the world. Analysis shows that even when women have the same levels of education, income, literacy and employment as men, they are still less likely to own a mobile phone or use mobile internet, suggesting that other issues are at play, such as discrimination and social norms.⁵

In this unprecedented year of the global COVID-19 pandemic, access to mobile and mobile internet have become more important than ever.⁶ Mobile has provided people with a way to continue living their lives despite lockdown restrictions, serving as a vital tool to access critical information, services and opportunities. Mobile has enabled people to stay connected, to keep working or earning an income, to access important services such as education and healthcare, to search for accurate information and to purchase the goods they need.

The pandemic has had a disproportionate impact on women who have not only taken on more household responsibilities and educating their children from home, but also suffered the loss of jobs and income.⁷ Despite this, the pandemic does not appear to have had a negative overall impact on women's mobile ownership and use compared to men. However, while mobiles have been valuable tools during the pandemic, especially during lockdowns, certain countries are showing some early indications of a negative and disproportionate impact on women's access to and use of mobile phones. It remains to be seen how the pandemic will impact this in the future, as it continues to evolve across the world, leaving tragic health and economic outcomes in its wake.

For women to become equal citizens in an increasingly digitalised, post-COVID world, closing the mobile gender gap has never been more critical. Mobile phones are valued by women as life-enhancing tools that make them feel more autonomous, connected and safe. Mobiles provide access to important information that assists them in their daily lives and that they would not have received otherwise.⁸ Addressing the mobile gender gap is also vital to achieving the UN Sustainable Development Goals (SDGs). Many of the SDGs, including those related to health, education and financial inclusion, are supported or underpinned by connectivity in a variety of ways.

Sizing the mobile gender gap annually and generating regional and country-level data draws attention to this issue and provides key evidence to inform action. This work is particularly crucial now, in light of COVID-19, to help ensure that gains in gender equality are not lost and that existing inequalities are not exacerbated.

In this fourth edition of the Mobile Gender Gap Report series, we consider how women’s mobile access and use are changing across LMICs, and how efforts to reach women with this technology should continue to evolve.

The report provides:



- Updated figures on the gender gap in mobile ownership (including smartphones), the gender gap in mobile internet use in LMICs and how these figures have changed;



- New data on men’s and women’s confidence performing tasks on a mobile and how they could learn new tasks; and



- A review of the barriers preventing male and female mobile users from adopting mobile internet;



- Qualitative insights from India and Kenya that highlight how the COVID-19 pandemic has influenced women’s use of mobile internet and access to smartphones.

The findings in this report draw on the annual GSMA Consumer Survey, which this year had over 9,000 respondents from eight LMICs.⁹ This face-to-face survey was conducted between 4 October 2020 and 8 January 2021.¹⁰ Additional qualitative research was conducted in Kenya¹¹ and India¹² to develop a more nuanced understanding of women’s access to and

use of mobile internet, especially in the context of the COVID-19 pandemic. This qualitative research was conducted in March 2021 with mobile internet users and expert stakeholders. Analysis of other research and data from the GSMA, and a range of other organisations that investigate and track the mobile gender gap, also inform the findings of this report.



Key findings

- 1. Women’s access to mobile internet continues to increase across low- and middle-income countries, while mobile ownership remains relatively flat: 83 per cent of women own a mobile phone and 58 per cent use mobile internet.**¹³ Women are also more likely than men to access the internet exclusively on a mobile handset in most of the countries surveyed, which highlights the importance of both increasing mobile access for women, as well as reducing the mobile gender gap.
- 2. The gender gap in mobile internet use continues to reduce, with women in low- and middle-income countries 15 per cent less likely to use it than men.** This reduction has been driven primarily by South Asia where it decreased significantly from 50 per cent in 2019 to 36 per cent in 2020. For the first time, the gender gap in mobile internet use in South Asia is now on par with Sub-Saharan Africa, where the gender gap remains largely unchanged. Across low- and middle- income countries there are still 234 million fewer women than men accessing mobile internet.
- 3. While the overall gender gap in mobile ownership remains largely unchanged since 2017, the gender gap in smartphone ownership has reduced for the first time since then, driven by South Asia** where these gaps have consistently been widest. Across low- and middle-income countries, women are now seven per cent less likely to own a mobile phone, which translates into 143 million fewer women mobile owners than men.¹⁴ Women are also 15 per cent less likely to own a smartphone than men, down from 20 per cent in 2019. While COVID-19 restrictions and lockdowns have increased the need for connectivity, in some countries, there are early signs that the pandemic may be disproportionately negatively impacting women’s handset ownership.
- 4. Mobile owners are using their phones for a wider range of activities, with notable increases in the use of mobile internet for video calls, listening to music and watching videos.** However, there is a persistent gender gap, with female mobile owners using a narrower range of mobile services than male owners. Encouragingly, across the countries surveyed, female smartphone owners are almost on par with male owners in terms of mobile internet adoption and the range of mobile services they use.
- 5. The gender gap in awareness of mobile internet continues to reduce across all countries surveyed,** with awareness continuing to increase for both men and women.
- 6. Mobile users who are aware of mobile internet but do not use it report that the main barriers to use are a lack of literacy and digital skills and affordability, particularly the cost of an internet-enabled handset.** Handset affordability is also a key barrier to mobile ownership.
- 7. Female mobile users feel less able than male users to learn a new activity on a phone by themselves.** However, once they have done a task, their confidence in being able to do it again is almost on par with male users.

IN LOW- AND MIDDLE-INCOME COUNTRIES:

58%



of women now use mobile internet

But there are still

234M

FEWER WOMEN than men accessing it



The mobile internet gender gap continues to reduce



Women are now **15%** less likely

to use mobile internet than men, down from

27% in 2017



South Asia has seen a significant reduction in the mobile internet gender gap:



from **50%** in 2019 to

36%

in 2020



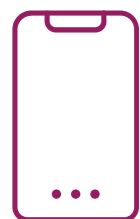
Women are **MORE LIKELY** than men to access the internet

exclusively on a mobile handset



Women's mobile ownership

remains largely unchanged



83%

of women own a mobile phone

Women are

7% less likely

than men to own a mobile phone

143M fewer women than men own a mobile

IN LOW- AND MIDDLE-INCOME COUNTRIES:

The gender gap in smartphone ownership has reduced for the first time since



2017

Women are now

15% less likely than men to own a smartphone

Mobile owners are using their phones for a **wider range** of activities,

with notable increases in **video calling, listening to music and watching videos**



The gender gap in **awareness**



of mobile internet continues to reduce



MOBILE INTERNET USE: Top three barriers

for female mobile users who are aware of mobile internet:

1. Literacy and skills
2. Affordability
3. Safety and security

Female mobile users feel less able than male users to

learn a new activity



on a phone by themselves

Addressing the mobile gender gap is an important way to contribute to the **UN Sustainable Development Goals**





DEFINITIONS



GENDER GAP

The gender gap in mobile phone ownership and mobile internet use is calculated using the following formula:

$$\text{Gender gap in ownership / use (\%)} = \frac{\text{Male owners / users (\% of male population)} - \text{Female owners / users (\% of female population)}}{\text{Male owners / users (\% of male population)}}$$



MOBILE OWNER

“Mobile phone owner” and “mobile owner” are used interchangeably in this report to mean a person who has sole or main use of a SIM card or mobile phone that does not require a SIM and uses it at least once a month. The vast majority of SIM owners also have sole or main use of a handset (a median of 92 per cent across the sample countries, ranging from 84 per cent to 98 per cent).



FEATURE PHONE OWNER

A mobile owner that has sole or primary use of a feature phone. A feature phone is an internet-enabled mobile phone with a small screen and basic keypad with several letters per button. A feature phone may have some pre-installed apps, but does not have the ability to download apps from an online app store, such as Google Play or the App Store. Smart feature phones are a sub-group of feature phones and are not recorded as a separate category in the survey.



SMARTPHONE OWNER

A mobile owner that has sole or primary use of a smartphone. A smartphone is a mobile phone with a touchscreen display, an advanced operating system (Android or iOS) and the ability to download apps from an online app store, such as Google Play or the App Store.



UNCONNECTED

“Unconnected” or “unconnected population” refers to people who are not mobile owners, as defined above.



MOBILE INTERNET USER

A “mobile internet user” is a person who has used the internet on a mobile phone at least once in the last three months.¹⁵ Mobile internet users do not have to personally own a mobile phone, and therefore can be non-mobile phone owners who use mobile internet by accessing it on someone else’s mobile phone.



The mobile gender gap in 2021

Despite the onset of the COVID-19 pandemic, mobile phone ownership and mobile internet use among women increased or stayed the same in most of the countries surveyed. It remains to be seen how COVID-19 will impact these trends in the long term.

Apart from a slight reduction in South Asia, the gender gap in mobile ownership remained largely unchanged across LMICs, with women seven per cent less likely than men to own a mobile phone (Figure 1). This gender gap is persistent and proving difficult to close. In fact, while mobiles continue to be prioritised as an important tool, there is some early evidence that the COVID-19 pandemic may be having a disproportionate negative impact on the type of handset women own in some parts of the world.

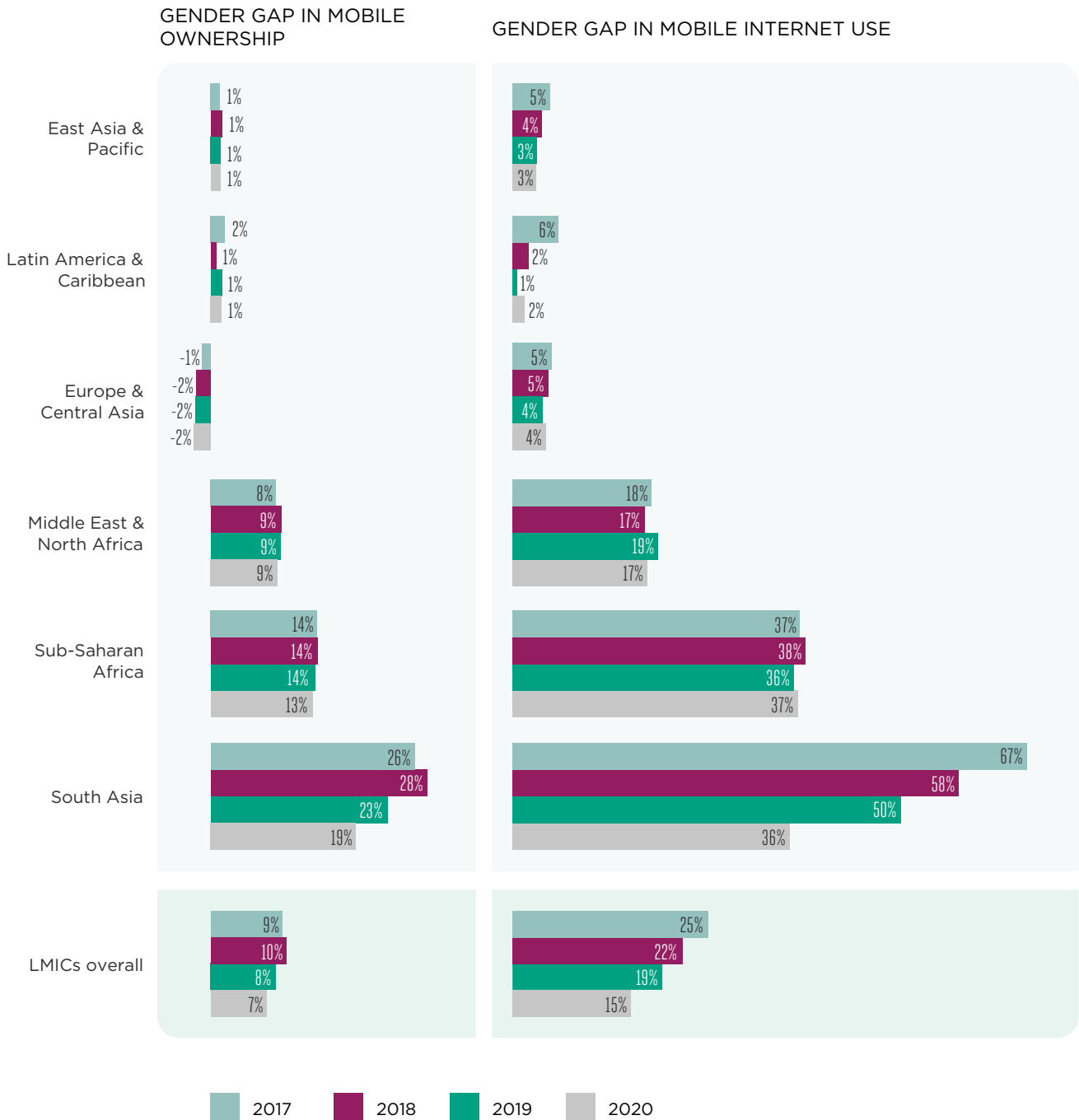
The gender gap widens significantly for mobile internet use, although there has been a further reduction in this gap across LMICs. Women are now 15 per cent less likely to use mobile internet than men, a substantial

decrease from previous years (Figure 1). Across LMICs, an estimated 112 million additional women started using mobile internet in 2020. In addition to other factors such as changing market dynamics, COVID-19 restrictions and lockdowns have driven an increased need, and in some cases, the required justification for women to go online (see India in Focus). Further research is needed to track whether this trend will continue post-COVID.

Gender gaps in mobile ownership and mobile internet use vary across regions, with the widest gaps in South Asia and Sub-Saharan Africa (Figure 1). These gender gaps have shown little change in each region over the last few years, with the exception of South Asia where they have narrowed. Although the mobile internet gender gap in South Asia remains high at 36 per cent, the rapid reduction in recent years is very promising. For the first time, the gender gap in mobile internet use in South Asia is now on par with Sub-Saharan Africa.

Figure 1

Regional gender gaps in mobile ownership and mobile internet use, 2017–2020



Source: GSMA Intelligence, 2020

Mobile ownership is defined as having sole or main use of a SIM card (or a mobile phone that does not require a SIM) and using it at least once a month.

Mobile internet use is defined as having used the internet on a mobile phone at least once in the last three months.

Mobile internet users do not have to personally own a mobile phone. The gender gap in mobile ownership and mobile internet use refers to how less likely a woman is to own a mobile (or to use mobile internet) than a man.

Regional averages were calculated from country-level data.

Based on survey results and modelled data for adults aged 18+.

Some of the percentages show minor differences from previous reports. This is due to changes in the group of countries defined as “low and middle income” and the fact that our modelling uses the most up-to-date data from our survey and third-party sources.



Country-level gender gaps in mobile ownership and mobile internet use

There are significant variations between countries in men’s and women’s mobile ownership and mobile internet use, and the resulting size of the gender gap (Figure 2). In general, countries with the lowest levels of mobile ownership tend to have the widest gender gaps in mobile ownership and mobile internet use. In all countries surveyed, the gender gap in mobile ownership is smaller than the gender gap in mobile internet use. Even where the gender gap in mobile ownership is relatively small, there can be a substantial gender gap in mobile internet use. For instance, Kenya and Nigeria have gender gaps in mobile ownership of seven per cent and four per cent, respectively, and gender gaps in mobile internet use of 42 per cent and 29 per cent (Figure 2).

The mobile gender gap also varies within countries. For example, gender gaps in both mobile ownership and mobile internet use tend to be greatest in rural areas and among certain populations, including those with lower literacy levels, low incomes, disabilities or over the age of 55 (see Box 1 and Box 3).

Figure 2

Male and female mobile ownership and mobile internet use by country

Percentage of total adult population



X% = Gender Gap

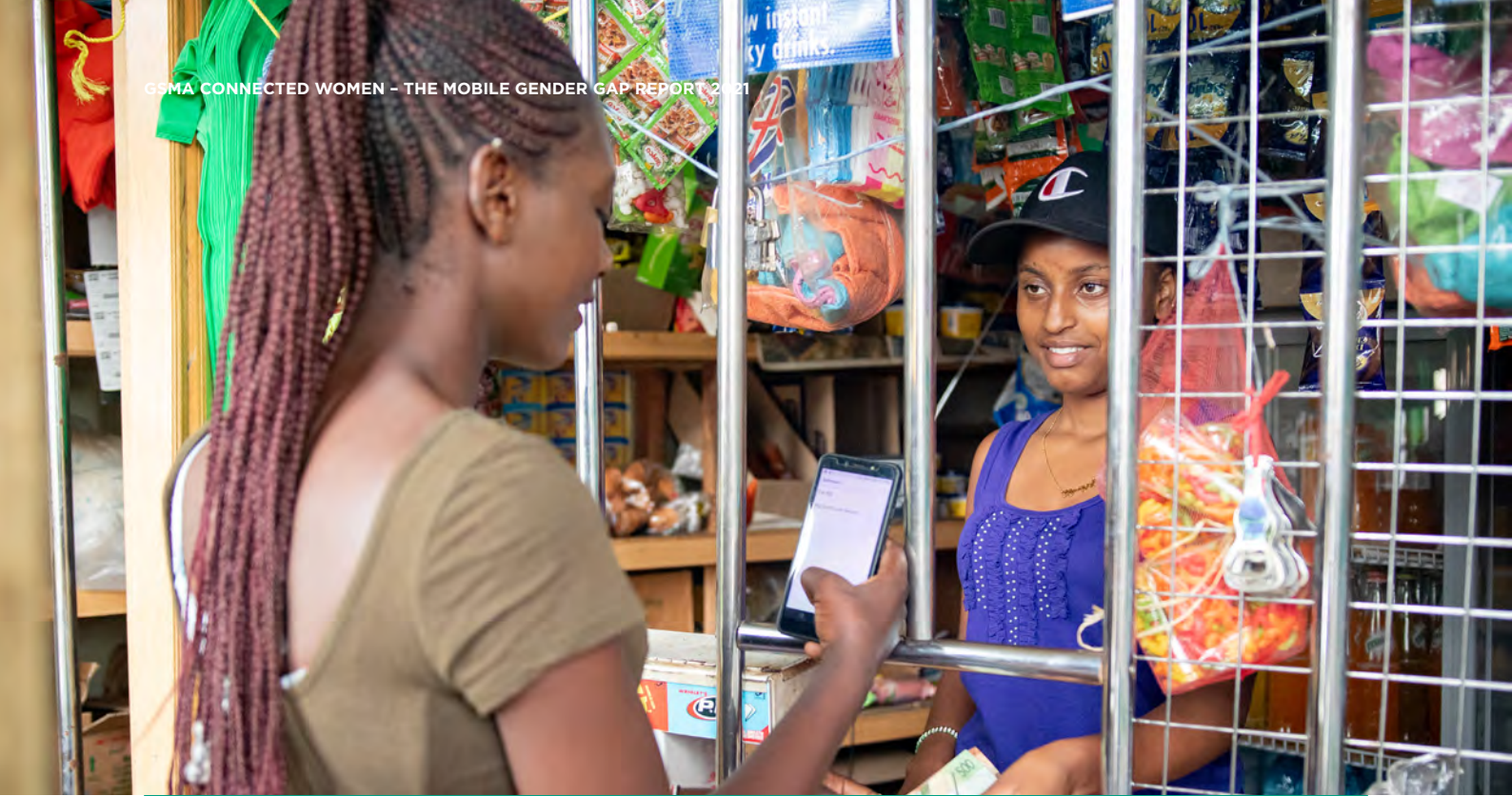
Source: GSMA Consumer Survey, 2020

Base: Total population aged 18+

A mobile owner is defined as a person who has sole or main use of a SIM card (or a mobile phone that does not require a SIM) and uses it at least once a month.

Mobile internet users do not have to personally own a mobile phone. The gender gap in mobile ownership and mobile internet use refers to how much less likely a woman is to own a mobile (or to use mobile internet) than a man.

n= from 495 to 973 for women and n= from 471 to 1,153 for men



The journey to mobile internet use

Mobile continues to be the primary way people access the internet, particularly women

With the proliferation of mobile phones and growth in internet-enabled handsets, including smart feature phones and smartphones, mobile is the primary way most people in LMICs access the internet. Across the eight survey countries in this study, a high proportion of respondents were found to access the internet exclusively from a mobile. The median proportion of internet users accessing it exclusively on mobile is 69 per cent, ranging from 52 per cent in Mozambique to 85 per cent in Bangladesh.

In seven of the eight countries surveyed, female internet users were more likely than their male counterparts to access it exclusively via mobile. For example, in Kenya, 63 per cent of male internet users reported using the internet only via mobile compared to 79 per cent of female internet users. Women's reliance on mobile to access the internet demonstrates the disproportionate benefit that increasing mobile internet access in LMICs would have for women.

The gender gap widens at each stage of the mobile internet journey, with handset type playing an important role

Acquiring, using and learning about digital services is not necessarily a linear process. Nevertheless, certain key stages and milestones can pose barriers to regular and diverse mobile use, preventing men and women in LMICs from reaping the full benefits of mobile. This report looks at each stage of this journey.

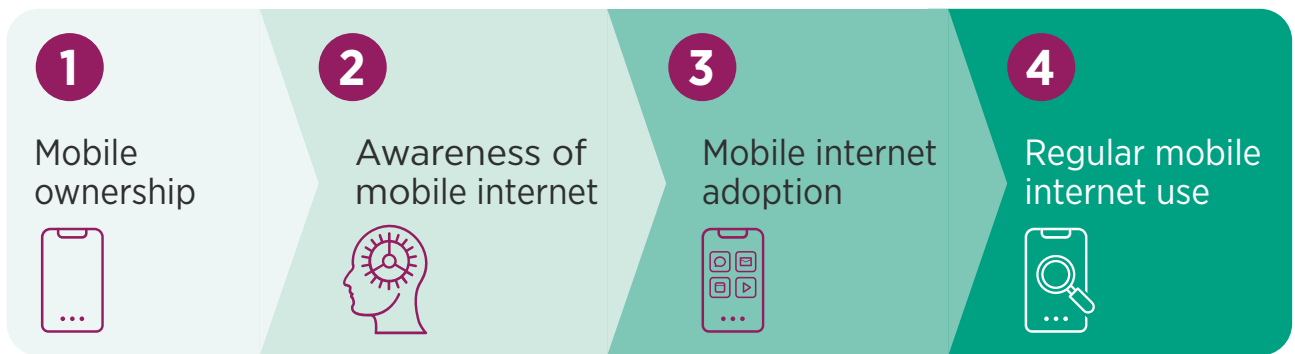
Typically, the gender gap widens along each stage of the user journey, from mobile ownership to awareness of mobile internet, mobile internet adoption and regular mobile internet use (Figure 3). The gap is smallest for

mobile ownership and increases for mobile internet adoption and regular use.

Handset type is important in this user journey, and smartphones drive substantially higher mobile internet use. However, the gender gap in smartphone ownership is wider than for basic phone ownership. Across LMICs, women are 15 per cent less likely than men to own a smartphone,¹⁶ which closely mirrors the overall mobile internet gender gap.

Figure 3

The mobile internet user journey





The gender gap in mobile ownership

At the end of 2020, 83 per cent of women in LMICs owned a mobile phone, yet 374 million women were still unconnected. Across LMICs, growth in mobile ownership remains relatively flat overall, and the gender gap has remained largely unchanged since 2017. Women are now seven per cent less likely than men to own a mobile phone.¹⁷

The cost of a handset has consistently been the greatest barrier to ownership for both men and women over the last few years. However, as highlighted in last year's report, the growth of smart feature phones has provided a lower cost alternative. Even so, female

mobile owners are more likely than male owners to own a more basic handset.

As illustrated in Figure 4, the gender gap in mobile ownership varies significantly by region. While South Asia still has the widest gender gap in ownership, this has reduced somewhat over the last few years (Figure 1). Of the countries surveyed, Pakistan has the widest gap in mobile ownership at 34 per cent (Figure 2).

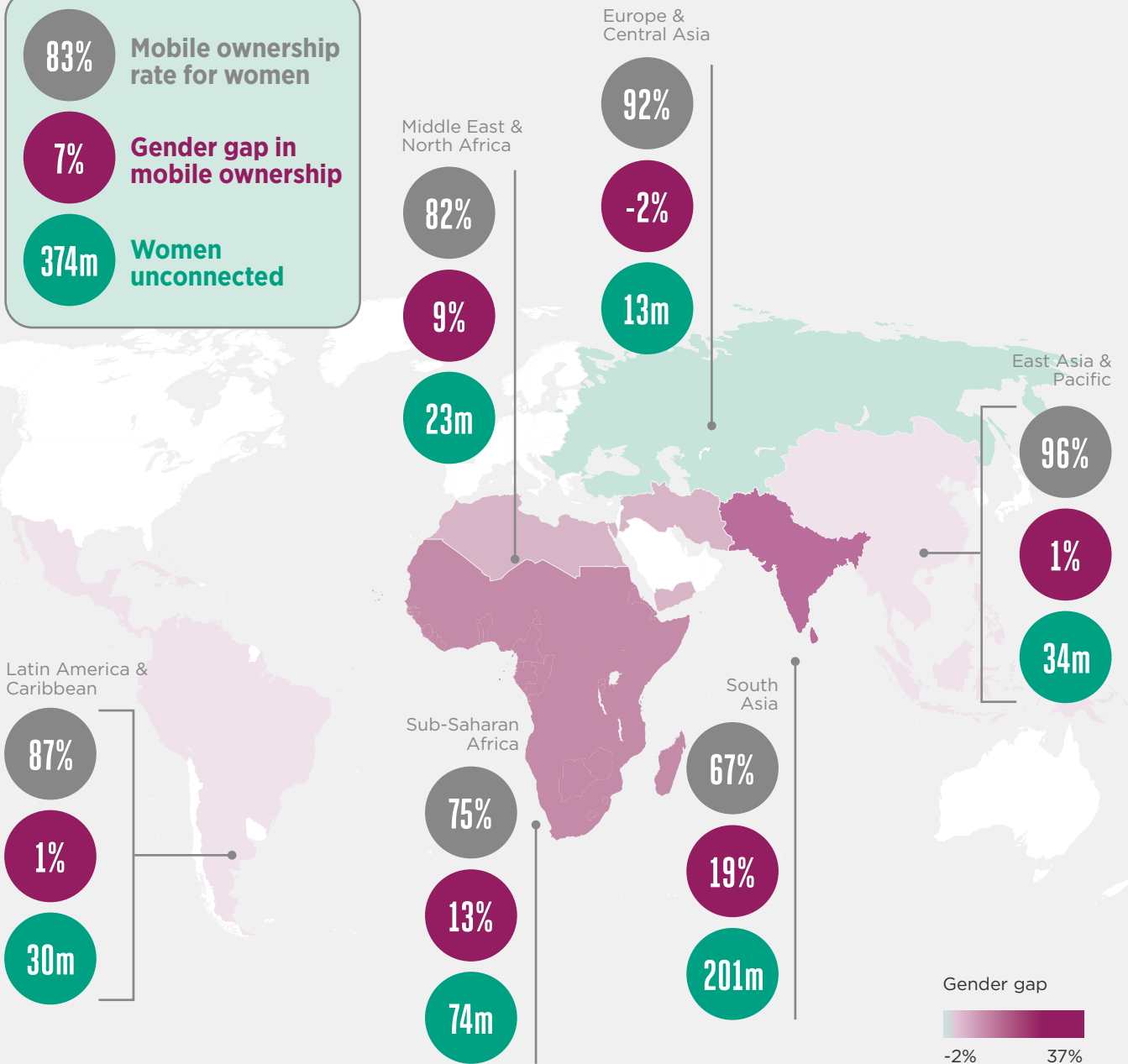
Figure 4

Gender gap in mobile ownership in low- and middle-income countries, by region

Total adult population

OVERALL

- 83%** Mobile ownership rate for women
- 7%** Gender gap in mobile ownership
- 374m** Women unconnected



Source: GSMA Intelligence, 2020

The gender gap refers to how less likely a woman is to own a mobile than a man.

Mobile ownership is defined as having sole or main use of a SIM card (or a mobile phone that does not require a SIM), and using it at least once a month.

Based on survey results and modelled data for adults aged 18+.

Encouragingly, the COVID-19 pandemic does not appear to have led to an overall decline in mobile ownership among women, at least so far. Although women were more likely to have lost their jobs and experienced more financial strain from reverse migration in some markets,¹⁸ mobile ownership among women remained largely unchanged in 2020. However, there are some exceptions at the country level. In India, more women now own mobile phones, particularly smartphones, whereas there has not been much change for men (see the *India in focus* section).

In contrast, in Kenya particularly but also in Nigeria and Mozambique, there is some evidence that women's mobile ownership, particularly smartphone ownership, was negatively impacted over the last year compared to men's (see Box 2 and Figure 6). Anecdotal evidence obtained while conducting the survey indicates that some men and women in certain surveyed countries sold their handsets to cope with financial stress. Further research is crucial to assess the long-lasting effects of the pandemic on women's access to mobile.



Box 1:

The gender gap in mobile ownership varies between population groups

The mobile ownership gender gap typically varies within the survey countries. This is due to a range of factors, including:



Location: The gender gap in mobile ownership is widest in rural areas. For example, in Mozambique, there is a 16 per cent gender gap in mobile ownership in urban areas while in rural areas it is more than double, at 33 per cent.



Literacy: Variations by literacy level are significant. For example, in Pakistan, the gender gap in mobile ownership is 46 per cent for those who are illiterate, compared to just 18 per cent among those who are literate.



Age: The mobile ownership gender gap varies by age cohort, but is highest for those over the age of 55 in most surveyed countries. In Bangladesh, the gender gap in mobile ownership is 17 per cent among 18 to 24-year olds, but it is more than double that for those over 55 years, at 46 per cent.



Disability: Previous GSMA research shows that the gender gap in mobile ownership tends to be higher among persons with disabilities than those without disabilities. In Uganda, for instance, the gender gap in mobile ownership is 11 per cent among persons without disabilities and 42 per cent among persons with disabilities.¹⁹



Employment: The gender gap in mobile ownership is higher among the unemployed in most of the surveyed countries. In Nigeria, for example, there is no gender gap among people who are employed, but there is a nine per cent gap among people who are unemployed.





Box 2:

Kenya: the COVID-19 pandemic appears to be having a disproportionate impact on women’s mobile access and use

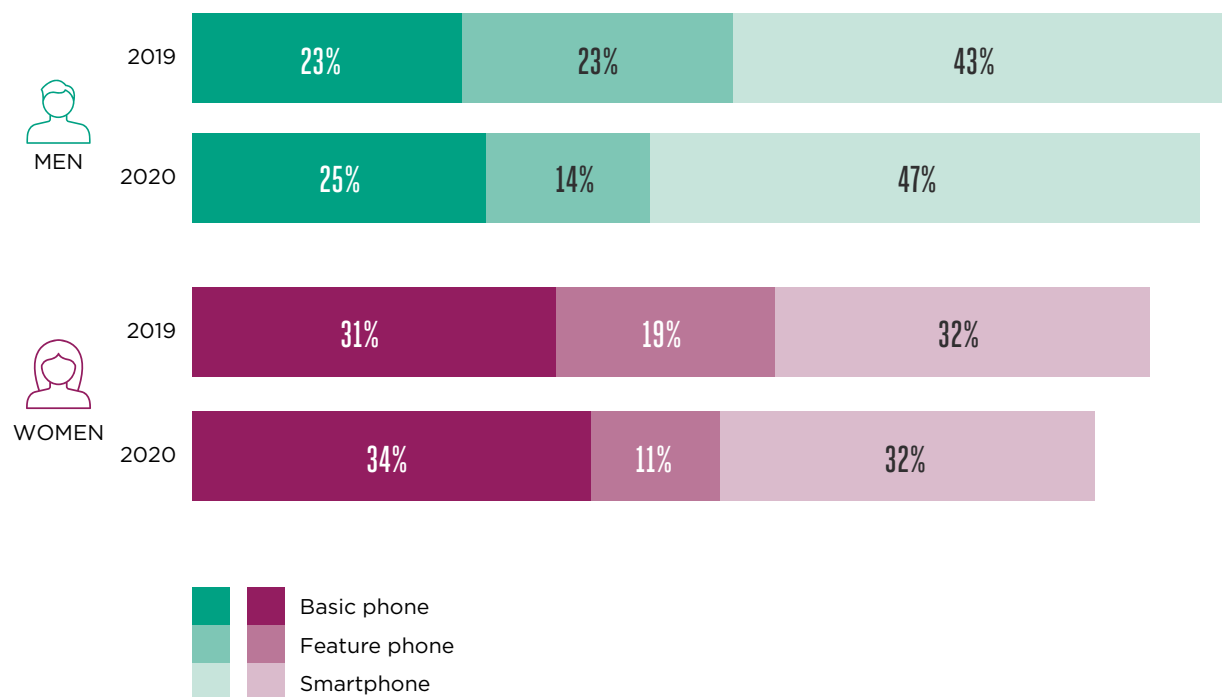
Respondents in our qualitative research highlighted that the economic impact of the pandemic has been felt acutely in Kenya, especially by women.

While overall mobile ownership remains largely unchanged among men in Kenya and smartphone ownership has grown, overall mobile ownership declined slightly for women, and the proportion of women who own a smartphone has not increased (Figure 5). In addition, Kenya was the only survey country where the gender gap in mobile internet use has widened, from 34 per cent in 2019 to 42 per cent in 2020. Women’s mobile internet use remained flat over this period while use increased for men.

Figure 5

Share of population in Kenya by type of handset owned, 2019–2020

Percentage of total adult population



Source: GSMA Consumer Survey 2019 and 2020
 Base: Total population aged 18+
 The total percentage of handset owners does not exactly match the percentage of mobile owners in Figure 2. Figure 2 captures people who have the sole or main use of a SIM card whereas Figure 5 is people who have sole or main use of a handset.
 Respondents are categorised according to their most advanced device owned, and can only be included in one category. Smartphone owners that also own a basic or feature phone are counted only as smartphone owners.
 n= from 523 to 545 for women and n= from 496 to 526 for men

**Box 2 continued:**

Kenya: the COVID-19 pandemic appears to be having a disproportionate impact on women's mobile access and use

Our qualitative research revealed that smartphones have been prioritised for men over women during the COVID-19 pandemic to seek new work opportunities, pass the time, stay socially connected and watch sports.



“It makes work easier. I can keep my records...as a business person and type notes. I am self-employed and still looking for work. So, I could Google for jobs and also entertain myself through WhatsApp, Facebook.” Male, 25–34, rural, Nyanza



Furthermore, COVID-related financial strains on households tended to reinforce certain gender norms that disempower women financially. Men were typically permitted to spend any money they earned while women were usually expected to use their earnings for household expenses.



“If a woman wants money, she has to explain why she wants that money. But for a man, it's his money. So he will just buy a phone.” Quality Control Afrika



The qualitative research showed a divergence of experience between mobile internet users who could no longer afford it and had to use it less, and those who could continue to use mobile internet and chose to use it more to continue their life online due to pandemic restrictions.



“A phone is not a priority for me now, other things are; children going to school, buying food, clothing.” Female, 35–44, rural, Rift Valley



For women who could access mobile internet, it provided a way to earn income when mobility was restricted during the pandemic.



“I can say WhatsApp has helped me since I can take photos of my vegetables in the farm and ask someone if they would want such fresh vegetables. So, it is helping me to sell my vegetables.” Female, 35–44, rural, Nyanza



Mobile internet also provided an important means for people to relax and escape the stresses of life during the pandemic through music and videos. Listening to gospel music in particular was mentioned as lifting women's spirits. Female mobile internet users reported that Safaricom periodically sent bonus data via SMS, which provided some continued access.



“We are trying to survive. Most things are not going on well. A lot of people are stressed and we need at least some happiness. You see a video that makes you laugh, you see a funny meme, you find someone posting an encouraging message. When I have a bad day, I go online and search for something that will make me happy.” Female, 35–44, rural, Nyanza





The gender gap in smartphone ownership

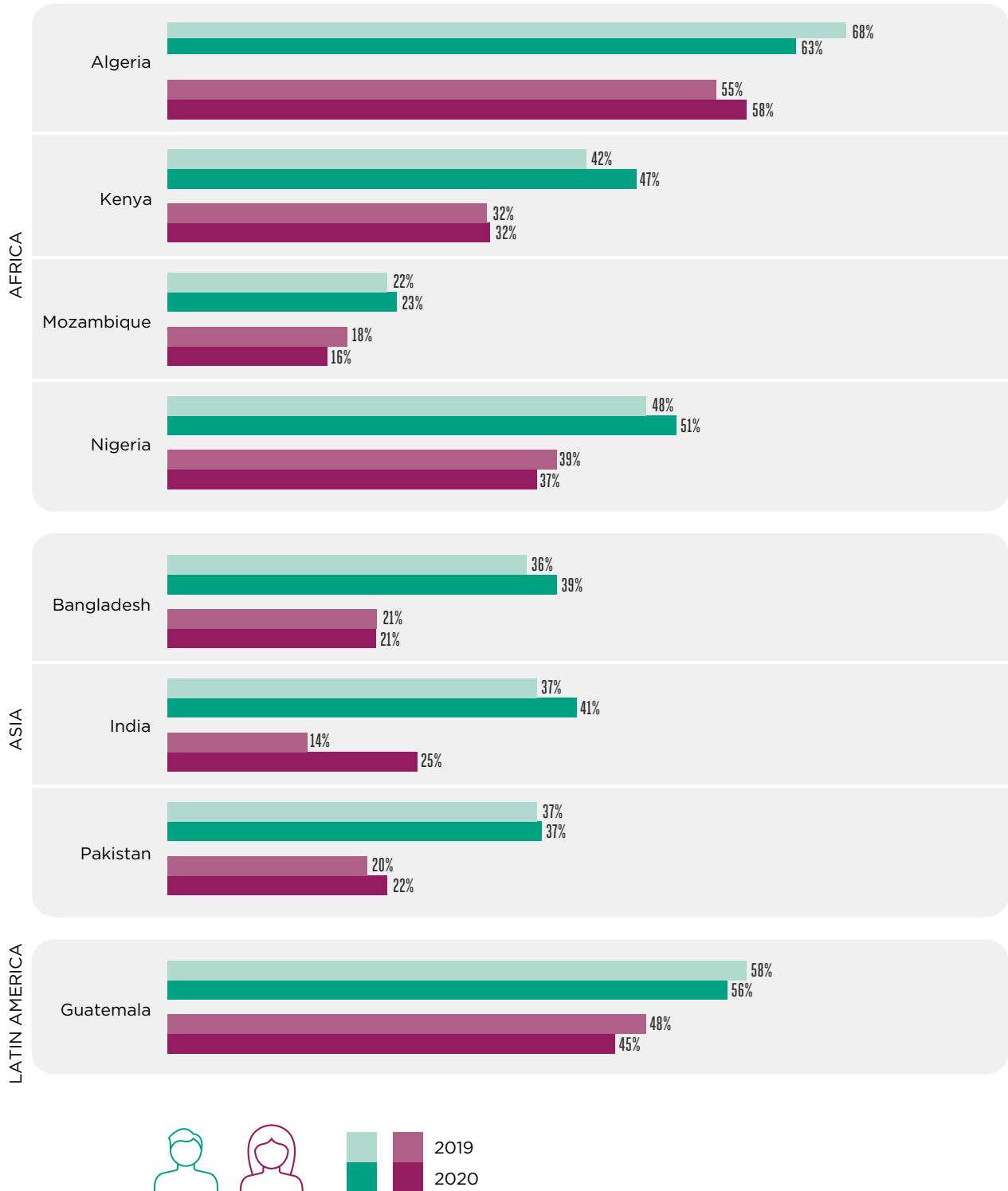
For the first time since 2017, the gender gap in smartphone ownership has reduced across LMICs. In 2019, women were 20 per cent less likely to own a smartphone, but this dropped to 15 per cent in 2020. However, this has largely been driven by South Asia, especially growth in smartphone ownership among women in India. There has been relatively little

progress in reducing the smartphone gender gap in regions outside South Asia. Figure 6 demonstrates that smartphone ownership among women in India increased significantly in 2020 compared to other survey countries, and grew more rapidly among women than men.

Figure 6

Smartphone ownership, 2019-2020

Percentage of total adult population



Source: GSMA Consumer Survey 2019 and 2020
 Base: Total population aged 18+
 n= from 495 to 973 for women and n= from 471 to 1,153 for men

The importance of smartphone ownership for mobile internet adoption

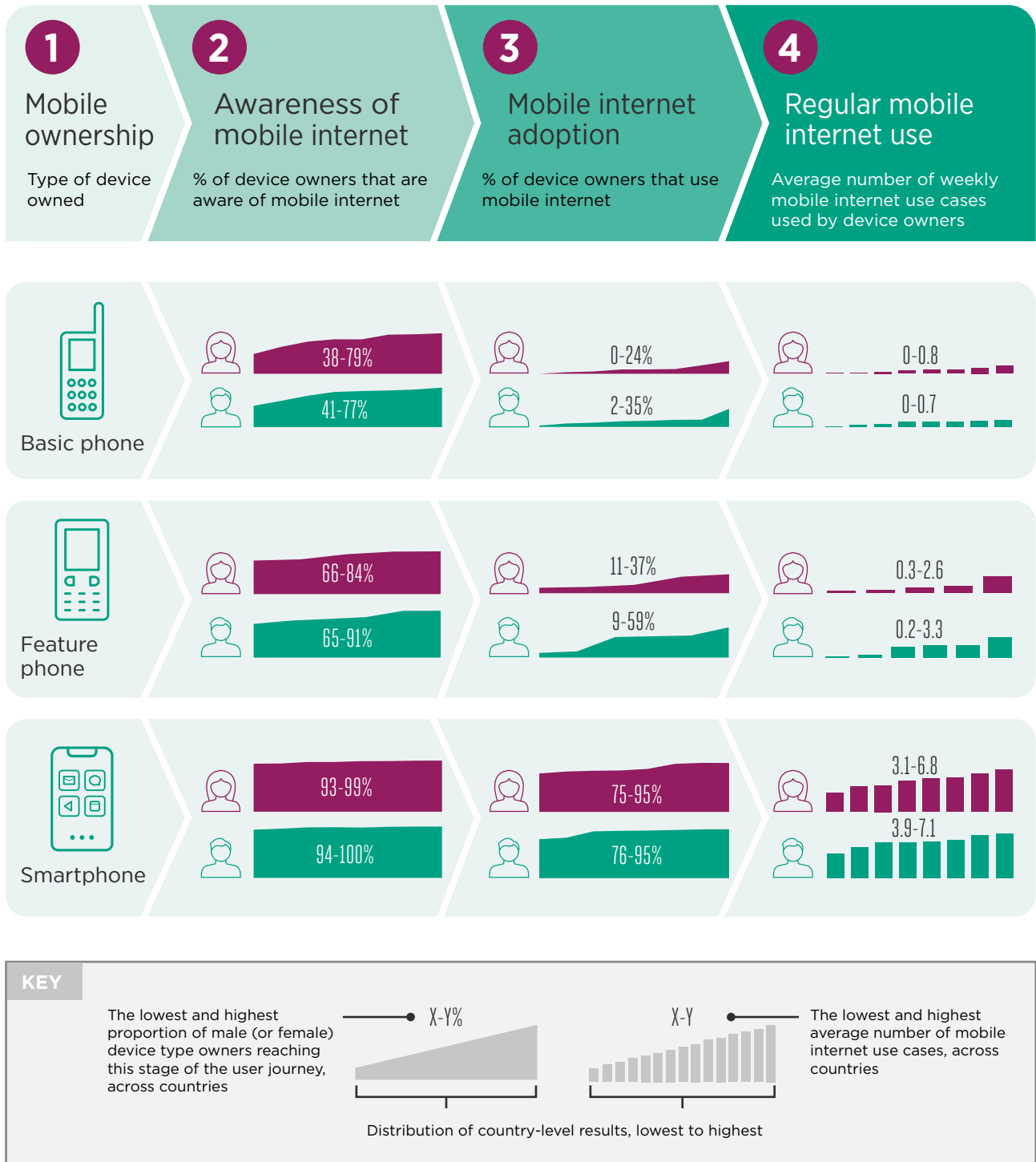
The gender gap in smartphone ownership is even more significant in the context of the mobile internet user journey. Whereas the first stage of the journey, mobile ownership, can include a more basic device, smartphone owners are much more likely to progress to regular mobile internet use and meet a wider variety of needs. While women without internet-enabled handsets often access mobile internet on other people's phones, there is no substitute for personal ownership.

Women and men who own a smartphone are much more likely to be aware of mobile internet and to use it than those who own a basic or feature phone (Figure 7). For example, in Nigeria, 93 per cent of female smartphone owners use mobile internet compared to only 12 per cent of women who own a basic or feature phone. When women own a smartphone, their adoption of mobile internet and the range of mobile services they use is almost on par with male smartphone owners (Figure 7).



Figure 7

Mobile internet user journey, by handset type



Source: GSMA Consumer Survey, 2020

Base: Basic phone, feature phone and smartphone owners aged 18+

Respondents are categorised according to the most advanced device they own, and can only be included in one category. Smartphone owners that also own a basic or feature phone are counted only as smartphone owners.

Respondents may have engaged in some use cases on a phone other than their own. Internet-based use cases were asked only of those who reported having used the internet on a mobile or other device in the past.

n = from 71 to 220 for female basic phone owners, from 60 to 313 for male basic phone owners, from 36 to 115 for female feature phone owners, from 30 to 148 for male feature phone owners, from 89 to 324 for female smartphone owners and from 102 to 484 for male smartphone owners.

Results for feature phone owners in three countries were excluded due to unweighted sample sizes below 30. The countries excluded were Algeria, Mozambique and Guatemala.



The growing awareness of mobile internet

Awareness of mobile internet is a critical step in the mobile internet user journey.²⁰ The gender gap in awareness continues to narrow in all survey countries. Figure 8 highlights the significant growth in mobile internet awareness among both men and women from 2017 to 2020. Despite the onset of the COVID-19 pandemic and increased reliance on mobile internet, there was not an acceleration of growth over the past year.

As shown in Figure 8, there has been strong growth in mobile internet awareness among men and women in Nigeria, Bangladesh, India and Pakistan since 2017. Pakistan in particular has had consistent progress in increasing awareness of mobile internet and reducing the gender gap in awareness, with 72 per cent of women and 79 per cent of men now aware of mobile

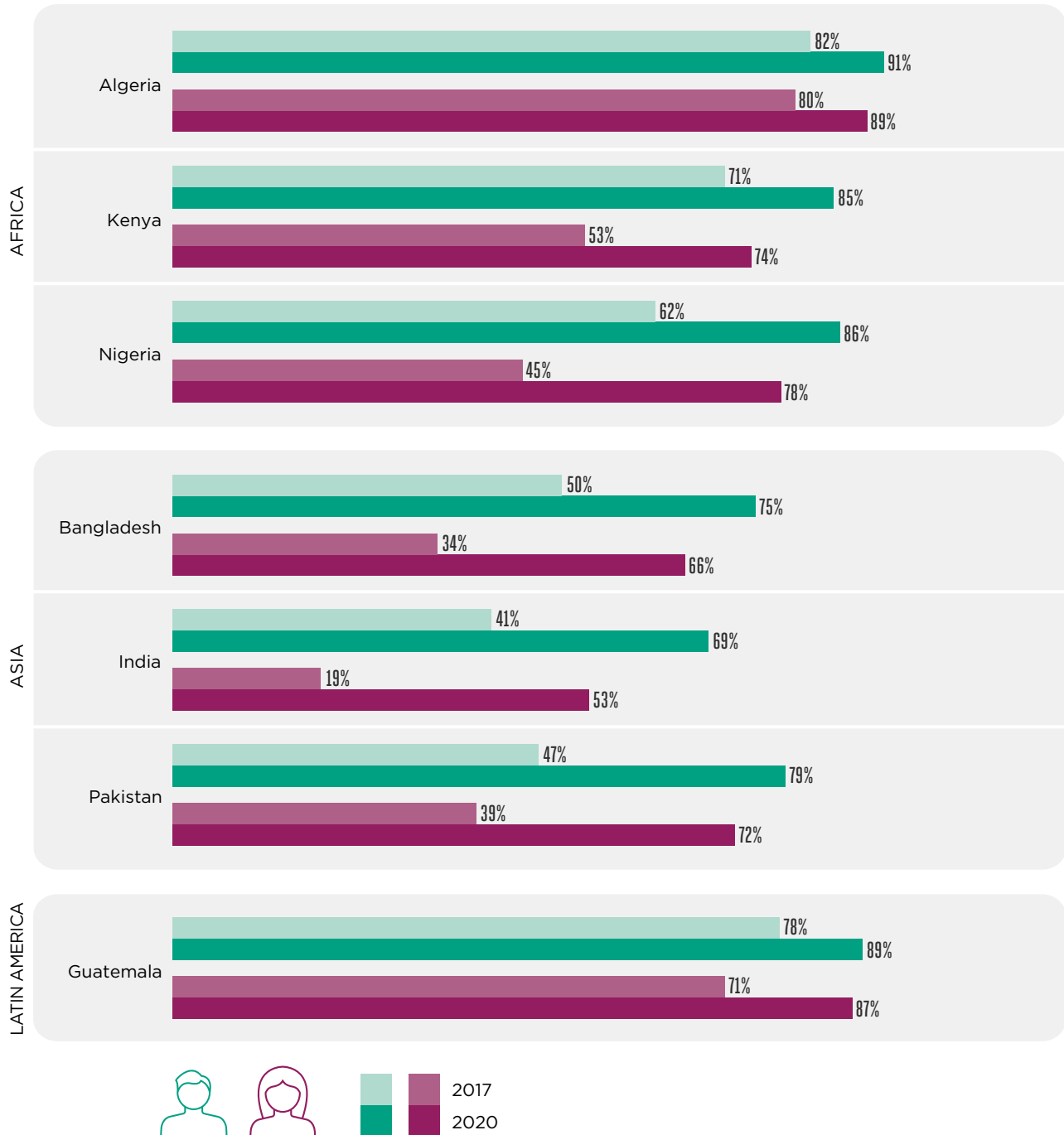
internet. Awareness of mobile internet has also increased substantially in India, including for women, but at 53 per cent, Indian women still have the lowest levels of mobile internet awareness in the surveyed markets.

However, increased awareness of mobile internet and its benefits does not necessarily translate into usage. In all markets surveyed, a greater proportion of men and women are aware of mobile internet than are using it. For instance, in Bangladesh, 75 per cent of men and 66 per cent of women are aware of mobile internet, but only 33 per cent of men and 19 per cent of women are using it. This highlights the importance of addressing the barriers that prevent men and women from adopting mobile internet, even for those who are aware of it and its potential value.

Figure 8

Mobile internet awareness by country, 2017-2020

Percentage of total adult population



Source: GSMA Consumer Survey 2017 and 2020

Base: Total population aged 18+

A person is considered aware of mobile internet if they have either used mobile internet before, or have not used mobile internet but are aware they can access the internet on a mobile phone.

Excludes Mozambique as it was not covered by GSMA Consumer Survey 2017

n= from 495 to 973 for women and n= from 471 to 1,153 for men



The gender gap in mobile internet use

The number of people using mobile internet has grown rapidly over the last few years and the gender gap continues to decrease. Across LMICs, an additional 112 million women started using mobile internet in 2020.²¹ This growth is driven mostly by women in South Asia where 45 million women came online. This is noteworthy as South Asia has consistently had the largest gender gap, but between 2019 and 2020 it declined from 50 per cent to 36 per cent. For the first time, South Asia's mobile internet gender gap is on par with that in Sub-Saharan Africa. The trends highlighted in last year's report on changing market dynamics and price reductions in South Asia are likely to have contributed to this reduction.

Despite these improvements, a substantial gender gap in mobile internet use remains across LMICs, with women 15 per cent less likely to use mobile internet than men, which is equivalent to 234 million fewer women. At a regional level, gender gaps in mobile

internet use are greatest in Sub-Saharan Africa, where it has remained relatively unchanged since 2017, and in South Asia. Among our survey countries, the gender gap in mobile internet use is greatest in Kenya, Bangladesh and Pakistan (Figure 2). This unequal access to mobile internet deprives women of access to crucial information and services online, as well as opportunities to meet their life needs in an increasingly digital society.

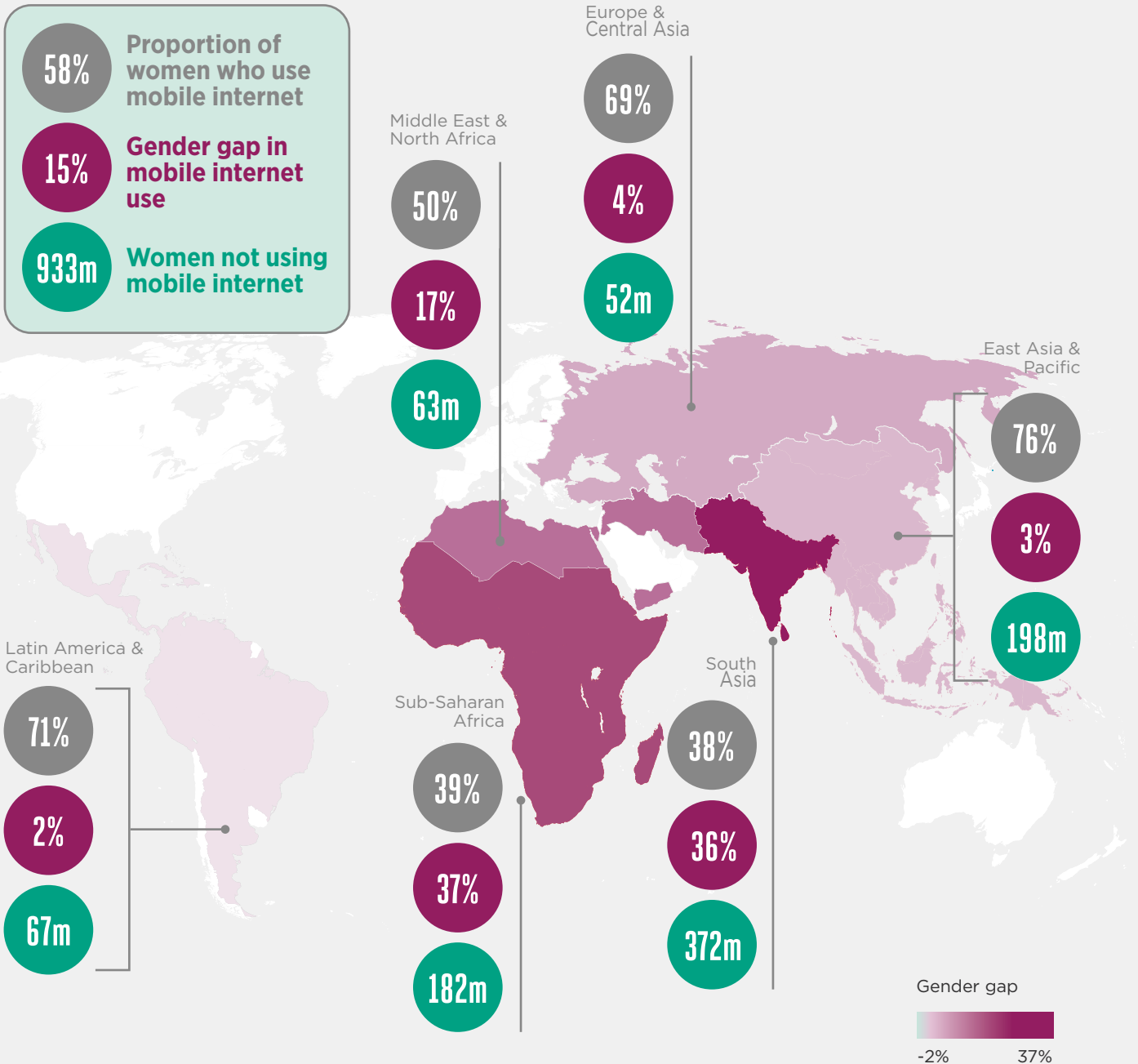
Encouragingly, even during the COVID-19 pandemic, women's mobile internet use stayed the same or increased in every surveyed market, and the gender gap in mobile internet use improved or stayed the same in every survey country except Kenya. In Kenya, women's mobile internet use has remained flat and men's use has increased, creating an even wider gender gap (Box 2).

Figure 9

Gender gap in mobile internet use in low- and middle-income countries, by region

Total adult population

OVERALL



Source: GSMA Intelligence, 2020

The gender gap refers to how much less likely a woman is to use mobile internet than a man.

Mobile internet use is defined as a person having used the internet on a mobile phone at least once in the last three months.

Mobile internet users do not have to personally own a mobile phone, so the above figures also include those who used mobile internet on someone else's phone.

Based on survey results and modelled data for adults aged 18+.

**Box 3:****The gender gap in mobile internet use varies between population groups**

The gender gap in mobile internet use typically varies within survey countries. This is due to a range of factors, including:



Location: The gender gap in mobile internet use is wider in rural areas. For example, in Nigeria, the urban gender gap is 23 per cent while in rural areas this rises to 38 per cent.



Literacy: The gender gap is narrower for men and women who are literate, but widens significantly for those who are illiterate. For example, in Mozambique, the mobile internet gender gap among those who are literate is 18 per cent, but rises to 62 per cent among those who are illiterate.



Age: The gender gap in mobile internet use is greatest among those older than 55 in the majority of surveyed countries. In Bangladesh, women aged 18 to 24 are 39 per cent less likely to use mobile internet than men their age, whereas women over 55 are 82 per cent less likely than their male counterparts to use it.



Disability: The gender gap for persons with disabilities is also significant. For example, in Mozambique, the mobile internet gender gap among persons without disabilities is 34 per cent, but this rises to 51 per cent for persons with disabilities.



Employment: The gender gap is widest among the unemployed. For example, in Nigeria, the gender gap in mobile internet use is 19 per cent among those who are employed compared to 41 per cent among those who are unemployed.

Understanding the barriers to mobile internet use

As mobile internet adoption continues to rise among both men and women, it is important to understand how the barriers for non-users are evolving. Since awareness of mobile internet is growing faster than adoption, those who are aware of mobile internet clearly face other barriers to using it.

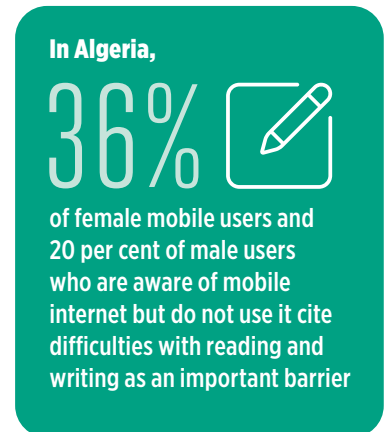
In the survey countries, mobile users who are aware of mobile internet but do not use it were asked whether certain barriers were preventing them from doing so, and which was the most important barrier for them. Table 1 lists the top reported barriers to mobile internet use, both at a country level and across surveyed countries (see Appendix 1 for more detail). Across the surveyed countries, both male and female mobile

users who are aware of mobile internet but do not use it reported that the top barrier preventing them from doing so is a lack of literacy and digital skills. Affordability, primarily of smartphones, is the second most important barrier. This overall ranking of the top two reported barriers has remained the same over the last few years.

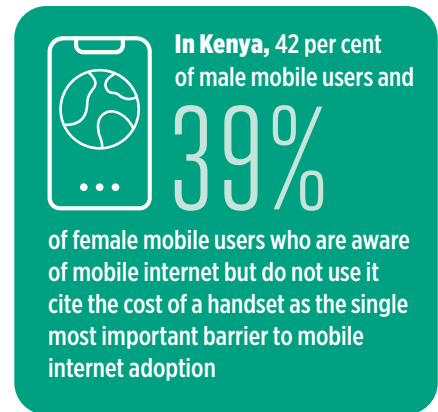
At the country level, there are variations in the top reported barriers. For example, while literacy and digital skills is the main barrier reported by both male and female respondents in the majority of survey countries, including all South Asian countries, affordability is reported as the greatest barrier in Kenya and Nigeria (Table 1).



Literacy and digital skills are ranked as the top barrier to mobile internet adoption by both male and female mobile users across the surveyed markets. This barrier is a composite of five sub-barriers that include functional literacy as well as mobile-related digital skills. Of these sub-barriers, difficulties with reading and writing are the biggest concern highlighted by both male and female respondents, followed by not knowing how to access the internet on a mobile or not having enough time to learn. In five of the eight surveyed countries, difficulties with reading and writing are reported as an important barrier by more female respondents than male.²² In Algeria, for instance, 36 per cent of female mobile users and 20 per cent of male users who are aware of but do not use mobile internet cite difficulties with reading and writing as an important barrier.



Affordability is a critical barrier to mobile internet access for male and female users alike, particularly handset affordability. This is most evident in Sub-Saharan Africa where the price of a handset is ranked as the top barrier for both female and male respondents in Kenya and Nigeria. In Kenya, 42 per cent of male mobile users and 39 per cent of female mobile users who are aware of mobile internet but have not used it cited the cost of a handset as the single most important barrier to mobile internet adoption. Our qualitative research in Kenya revealed that the economic impact of COVID-19 has been severe and, for those already on the margins, affordability has pushed mobile internet even further out of reach (see Box 2).



Safety and security has consistently been a top barrier to mobile internet adoption among male and female mobile users in Latin America,²³ and features again this year as the top barrier for male and female respondents in Guatemala (Table 1). In our qualitative research in India, female mobile internet users raised concerns about children’s safety online or exposure to harmful content, as well as fake news. This highlights how important it is for stakeholders to work collaboratively to ensure women and their families feel safe and secure when using the internet.



Relevance of mobile internet continues to be a barrier preventing both male and female mobile users from adopting mobile internet, particularly in Bangladesh where 20 per cent of both male and female respondents identified lack of perceived relevance as the top barrier to adopting mobile internet.



Access-related barriers cover a wide range of issues, so they are not grouped as a composite. Family approval is a critical barrier preventing female mobile users from adopting mobile internet. This was a greater barrier for female users than male users in every survey country except Guatemala – a reflection of the more conservative social norms influencing women’s choices and behaviour with respect to mobile technology. Family approval was ranked as one of the top three barriers to mobile internet adoption by female users in Algeria, Bangladesh and Pakistan, highlighting the importance of involving gatekeepers in efforts to increase women’s mobile internet access (Appendix 1). Notably, in Pakistan, where family disapproval is a significant barrier, there has been some improvement. Whereas last year this was reported as the single most important barrier preventing female mobile users from adopting mobile internet, this year family approval dropped by 10 percentage points as a barrier. This suggests that mobile internet use among women may be becoming more socially acceptable over time or that other barriers have become relatively more important.

Table 1

Top barriers to mobile internet use in surveyed countries among mobile users who are aware of mobile internet but do not use it

Based on the single most important barrier to using mobile internet identified by mobile users who are aware of mobile internet but have not used it in the last three months

Ranking	All countries	
	Women	Men
1	Literacy and skills	Literacy and skills
2	Affordability	Affordability
3	Safety and security	Relevance

Ranking	Algeria		Kenya		Mozambique		Nigeria	
	Women	Men	Women	Men	Women	Men	Women	Men
1	Literacy and skills	Literacy and skills	Affordability	Affordability	Literacy and skills	Literacy and skills	Affordability	Affordability
2	Affordability	Relevance	Literacy and skills	Literacy and skills	Affordability	Affordability	Literacy and skills	Literacy and skills
3	Family disapproval	Affordability	Relevance	Relevance	Safety and security	No coverage	Relevance	Relevance

Ranking	Bangladesh		India		Pakistan		Guatemala	
	Women	Men	Women	Men	Women	Men	Women	Men
1	Literacy and skills	Literacy and skills	Literacy and skills	Literacy and skills	Literacy and skills	Literacy and skills	Safety and security	Safety and security
2	Relevance	Relevance	Affordability	Affordability	Family disapproval	Relevance	Literacy and skills	Literacy and skills
3	Family disapproval	Affordability	Relevance	Safety and security	Relevance	Affordability	Affordability	Affordability

Source: GSMA Consumer Survey, 2020

Base: Adults aged 18+ who have used a mobile phone in the last three months but have not used mobile internet in the last three months on any device, despite being aware of mobile internet (excludes mobile users who are not aware of mobile internet).

The barriers above are composite barriers. These composite barriers are aggregates (not averages) of the responses for between two and five sub-barriers (see Appendix 1). Access-related barriers are not grouped as a composite since they cover a disparate range of topics. Rankings indicate the relative aggregated proportion of respondents who answered, "This is the most important reason stopping me" to the question, "Which one of those factors would you say is the single most important reason stopping you from using the internet on a mobile phone?"

'All countries' barriers were calculated by averaging country-level data for the eight countries surveyed.

n = from 65 to 197 for women and n = from 63 to 131 for men



Understanding women's mobile use

Mobile internet provides access to new information and opportunities. For women to truly reap the benefits of mobile internet, it is important to look beyond

equal access to equal use. Yet, as outlined in Figure 10, female mobile owners are still using a smaller number of use cases than their male counterparts.

Mobile owners are using mobiles for a wider range of activities, but there is still a gender gap

Mobile owners were asked about 22 distinct use cases on a mobile phone, including basic mobile services, such as sending SMS messages and making voice calls, through to more complex, internet-based use cases, such as watching video content online (Appendix 2).

With few exceptions, male and female mobile owners across the survey countries reported using mobile

phones for more use cases in 2020 than in 2019 (Figure 10). However, female owners still use a less diverse range of use cases than male owners. Across the survey countries, female owners used, on average, 3.3 to 7.1 use cases per week whereas male owners used 3.8 to 7.7 use cases. The greatest increase in the average number of use cases reported each week was among female mobile owners in India (Figure 10).

Figure 10

Average number of mobile use cases per week among male and female mobile owners, 2019–2020



Source: GSMA Consumer Survey 2019 and 2020

Base: Mobile owners aged 18+

A mobile owner is defined as a person who has sole or main use of a SIM card (or a mobile phone that does not require a SIM) and uses it at least once a month.

Respondents may have engaged in some use cases on a phone other than their own. Internet-based use cases were asked only of those who reported having used the internet on a mobile or other device in the past. The numbers in this graph reflect only those use cases performed on a mobile device.

This weighted average for use cases is based only on use cases that were asked in both 2019 and 2020, to allow for a fair year on year comparison (full list of use cases in Appendix 2).

n = 252 to 655 for women and n = 298 to 921 for men

The changing nature of mobile use

The specific use cases that mobile owners perform on a weekly basis vary by both gender and survey country. From 2019 to 2020, there were general increases in the use of video calls, free music and free videos by both male and female mobile owners. Notable increases include:



Kenya: The percentage of female owners listening to free music online on a weekly basis increased from six per cent to 16 per cent, and from 12 per cent to 27 per cent for male owners.



Bangladesh: The percentage of female owners watching free videos on a weekly basis increased from 11 per cent to 20 per cent and from 14 per cent to 29 per cent for male owners.



India: The percentage of female owners using video calls on a weekly basis increased from 16 per cent to 34 per cent, and from 33 per cent to 44 per cent for male owners.

For additional evidence on the changing nature of mobile internet use in India, see the *India in focus* section.

Driving mobile use through increasing skills and confidence

Building mobile-related digital skills is critical to reaping the full benefits of mobile and mobile internet. This has consistently been the top barrier to mobile internet adoption for male and female mobile users who are aware of mobile internet but have not yet used it.

There is currently relatively little publicly available data on digital skills in LMICs, especially mobile-related digital skills.²⁴ Since digital skills are not easy to measure without testing actual proficiencies, proxy measures are often used. As a step towards addressing this gap, this year's Consumer Survey included some new questions for mobile users²⁵ to ascertain men's and women's self-assessed level of confidence with performing mobile-related tasks on their own. This included questions on tasks they had already performed on a phone, as well as tasks they had not

yet performed. Questions referred to basic tasks, such as inserting a SIM, through to more complex tasks, such as editing photos or videos to share via social media.²⁶ Respondents were also asked what they could do to learn a new task on a mobile phone and were provided with a multiple choice list of options to consider. These questions were asked to mobile users in seven of the eight survey countries.²⁷

Although these questions do not directly measure mobile-related digital skills, they provide insights into men's and women's confidence using a mobile and their perceptions of how they could learn a new task. This is useful for informing digital skills training and approaches, specifically for women, and provides some insights to inform further research.

Female mobile users are performing fewer tasks on mobile phones than men

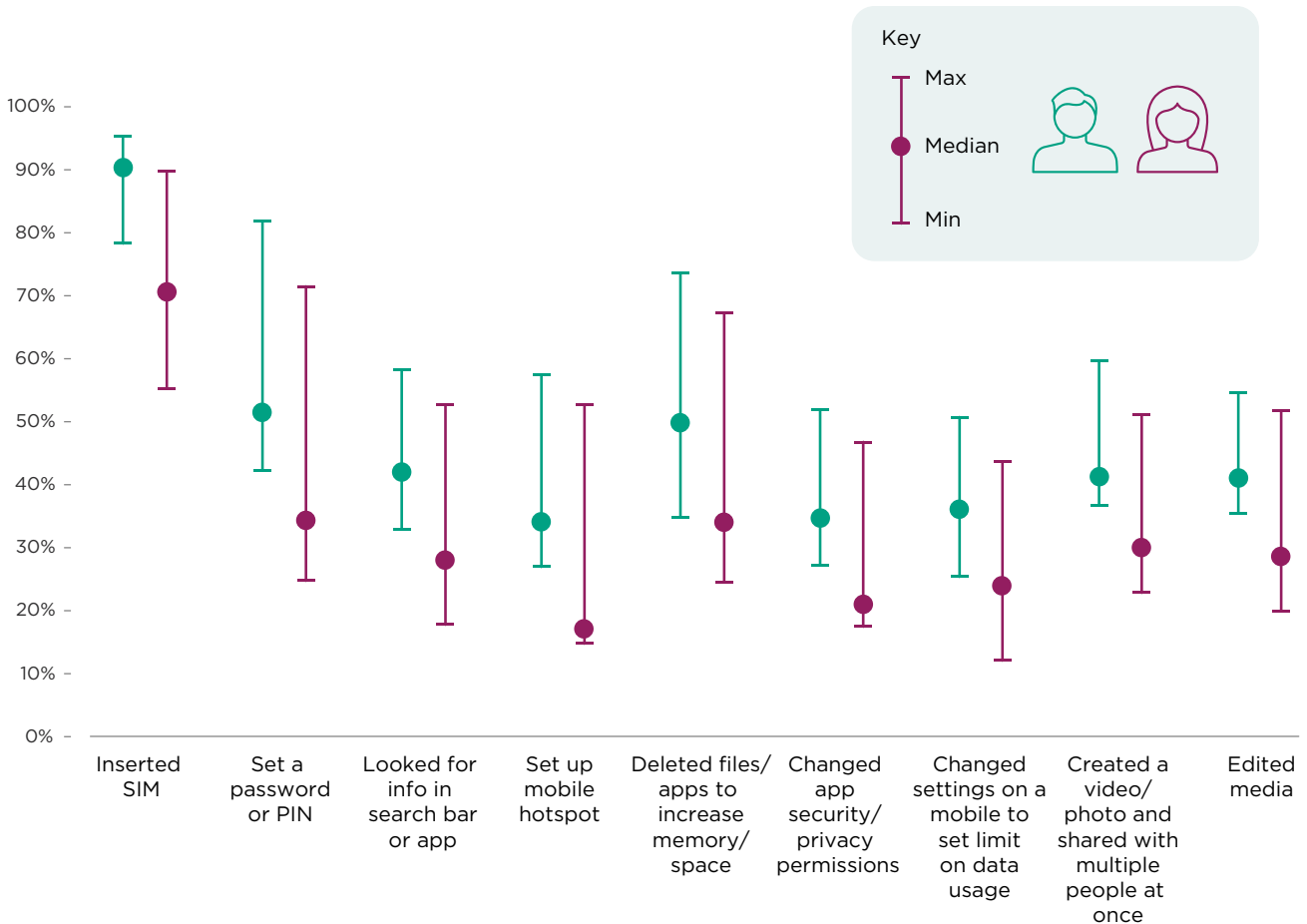
Figure 11 shows the ranges of male and female mobile users across our survey countries who reported they had completed each of the mobile-related tasks in the survey. It is important to note that performing a task is not necessarily an indication of skills. There are many reasons why a person may not have performed a task, from not having access to the right type of phone, to not having a need for the task, to being constrained by family disapproval.

Most users have performed the basic task of inserting a SIM card, but other tasks, particularly those relating to mobile internet, have been performed by fewer men and women (Figure 11). Overall, female mobile users are less likely than male users to have performed each of these tasks. These gender-related findings applied across all survey countries and demographic segments analysed, such as rural or urban. Although female mobile users are less likely than male users to own a mobile, the findings still hold true when only handset owners²⁸ or even just smartphone owners are considered.

Figure 11

Range of mobile users who reported they had performed a mobile-related task across survey countries

Percentage of mobile users



Source: GSMA Consumer Survey, 2020

Base: Mobile users aged 18+

A mobile user is defined as a person who has ever used a mobile phone. A mobile user does not have to personally own a mobile phone, and therefore can be a non-mobile phone owner who uses someone else's mobile phone.

Guatemala is excluded since these questions were not asked there.

n= from 375 to 882 for women and n= from 420 to 1,114 for men

Female mobile users are less confident performing a new task on a mobile than male users

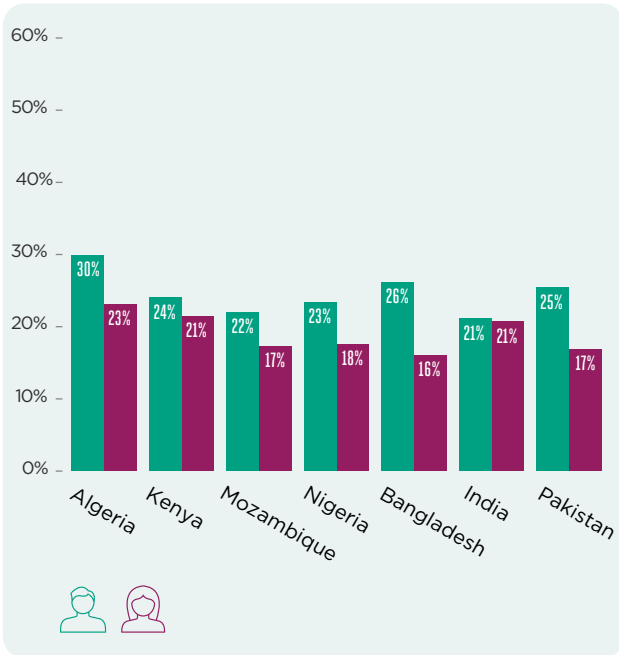
Female mobile users were less likely than male users to feel confident performing a new task on a phone by themselves. This held true for all nine mobile-related tasks and across all countries in the survey, even when considering only those respondents who own their own mobile phone. Figure 12a illustrates this point, showing the share of mobile users who are confident using a search bar on a phone.²⁹ Female mobile users who had never tried to use a search bar were less likely to feel confident doing this by themselves compared to their male counterparts.

Encouragingly, female mobile users who had already performed a mobile-related task reported feeling confident repeating the task almost on par with male users. This finding applies for the majority of tasks in each survey country, including when only those who own their own mobile handset were considered. Figure 12b illustrates that female mobile users who had already used a search bar were almost as likely as their male counterparts to feel as confident doing it again on their own. This suggests that once women have tried a task on a mobile, their confidence in doing it again seems to increase substantially, and more so than for men.

Figure 12

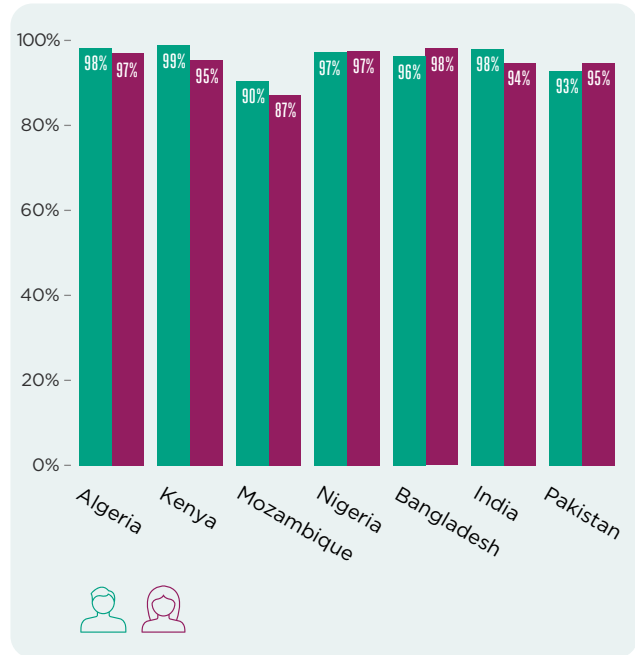
Share of mobile users who are confident they could use a search bar on their own

12a. As a percentage of mobile users who had never used a search bar before



Source: GSMA Consumer Survey, 2020
 Base: Mobile users aged 18+ that reported never having looked for information by typing a word or phrase into a search bar or app on a mobile phone.
 Percentages indicate the proportion of mobile users who responded, “I would be able to do this on my own with ease and I would be able to teach others”, “I would be able to do this on my own with ease but I would not be able to teach others” or “I would be able to do this on my own but with difficulty” in response to the question, “Please tell me which of the following best describes your ability to do this if you had to do it today?”
 n= from 207 to 603 for women and n= from 187 to 595 for men

12b. As a percentage of mobile users who had used a search bar before



Source: GSMA Consumer Survey, 2020
 Base: Mobile users aged 18+ that reported having previously looked for information by typing a word or phrase into a search bar or app on a mobile phone.
 Percentages indicate the proportion of mobile users who responded, “I would be able to do this on my own with ease and I would be able to teach others”, “I would be able to do this on my own with ease but I would not be able to teach others” or “I would be able to do this on my own but with difficulty” in response to the question, “Please tell me which of the following best describes your ability to do this if you had to do it today?”
 n= from 77 to 283 for women and n= from 159 to 519 for men

Female mobile users are less likely than male users to know how they could learn new activities on a phone

Mobile users were asked what they could do to learn a new task on a phone, and were presented with a list of options from which they could select multiple answers. Figure 13 illustrates the responses from four markets, which are representative of the overall results. In all surveyed countries, female mobile users tended to identify fewer learning options than men, and female respondents in South Asia tended to identify fewer options than those in Sub-Saharan Africa. These results apply even when considering only those who own their

own mobile handset. It is interesting to note that many respondents in Asia, especially women, reported that they “don’t know” any means of learning a new task even when presented with a list of options. In Pakistan, for instance, 34 per cent of female mobile users and 19 per cent of male users did not identify a single learning option (Figure 13). This suggests that women, especially women in South Asia, feel they have fewer options available to learn a new task on a phone.

Female mobile users are less likely than men to feel able to learn a new task on a phone by themselves

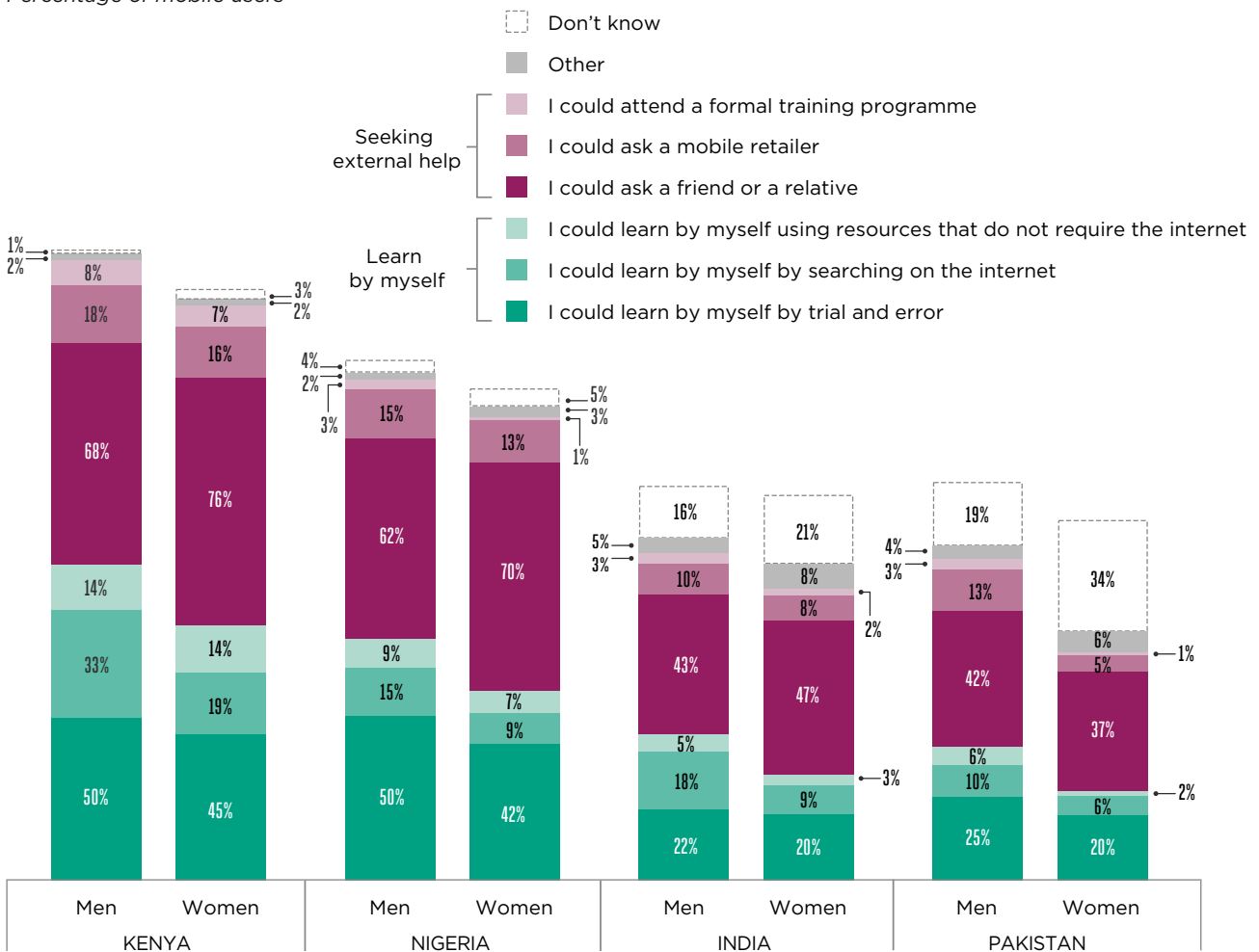
In all survey countries, fewer female mobile users than male users responded that they could learn a new task by themselves, whether by trial and error, searching on the internet or using other offline resources (see example countries in Figure 13). These results apply

even when considering only those who own their own mobile handset. Interestingly, female mobile users in South Asia are usually even less likely to respond that they could learn a new task by themselves than female users in Sub-Saharan African countries surveyed.

Figure 13

Percentage of mobile users reporting how they could learn to do something new on a mobile phone

Percentage of mobile users



Source: GSMA Consumer Survey, 2020

Base: Mobile users aged 18+

Respondents were able to select multiple answers to the question, "Which of the following could you do to learn how to do something new on a mobile phone?" Therefore, bars total more than 100 per cent.

n= from 440 to 882 for women and n= from 420 to 1,114 for men

In-person digital skills training has the potential to significantly improve women's mobile-related skills and confidence

The findings highlighted in this section suggest that women could benefit significantly from in-person mobile-related digital skills training that focuses on repeating tasks demonstrated to them on a handset.

Furthermore, since reading and writing difficulties continue to be a key barrier to mobile internet use, such training could highlight workarounds, such as speech-to-text.





Box 4:
Mobile money: an important mobile use case for women during the COVID-19 pandemic

Mobile money has been an important financial service for men and women during the COVID-19 pandemic. With social distancing measures in place, mobile money provides a convenient, contactless channel to make and receive payments, save money and access credit. In many markets, governments and NGOs have leveraged the reach of mobile money to disburse social and humanitarian cash transfer payments to those excluded from formal financial services, most of whom are women.³⁰ Given that mobile money accounts are usually relatively easy to sign up for, and can be accessed from a basic phone via USSD, mobile money is an important channel for women’s financial inclusion.

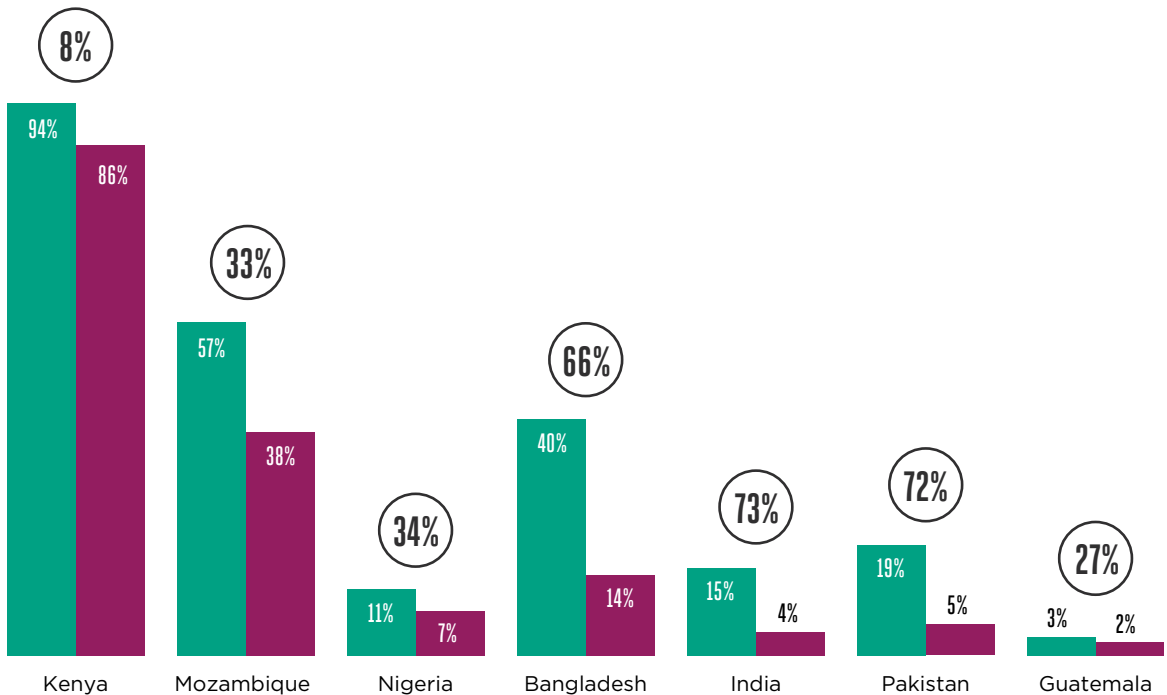
Mobile money account ownership among men and women is well-documented by the Global Findex database.³¹ Based on the latest available data from 2017, women across LMICs were 33 per cent less likely than men to use mobile money.³² Our more recent survey data reveals that the gender gap in mobile money still persists (Figure 14).³³

The gender gap in mobile money account ownership is even more crucial to address in light of the COVID-19 pandemic. As economies struggle and lockdowns continue, a mobile money account can help women manage their finances and businesses, and receive crucial COVID-related social welfare payments safely and conveniently.

Figure 14

Share of population that owns a mobile money account

Percentage of total adult population





 = Gender Gap

Source: GSMA Consumer Survey, 2020
 Base: Total population aged 18+
 n= from 495 to 973 for women and n= from 471 to 1,153 for men



Box 4 continued:
Mobile money: an important mobile use case for women during the COVID-19 pandemic

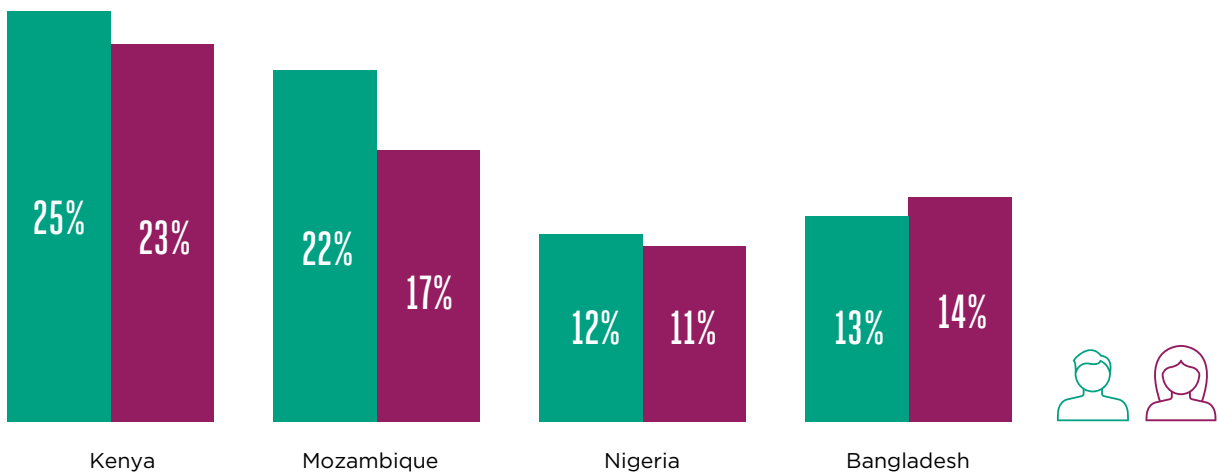
Survey findings suggest that mobile money has helped women mitigate the impact of the pandemic. In the surveyed countries, both male and female mobile money users pointed out that COVID-19 restrictions had driven them to use certain mobile money use cases for the first time.³⁴ This included using mobile

money to purchase products (Figure 15), pay utility bills, manage savings and loans and receive social welfare payments. Across the surveyed countries, both male and female mobile money users reported adopting these new services at similar rates.³⁵

Figure 15

Proportion of mobile money account owners that reported purchasing products via mobile money for the first time because of COVID-19

Percentage of mobile money account owners



Source: GSMA Consumer Survey, 2020
 Base: Mobile money account owners aged 18+ that are aware of COVID-19
 Percentages indicate the proportion of respondents who answered, “Applies to me” to the question, “Thinking now about Coronavirus and your use of mobile money, for each of the following please tell me whether this applies to you or not: I started purchasing products (food, clothes, items, etc) via mobile money because of Coronavirus.”
 n= from 114 to 499 for women and n= from 180 to 510 for men



India in focus: the rise of smartphones and mobile internet use among women

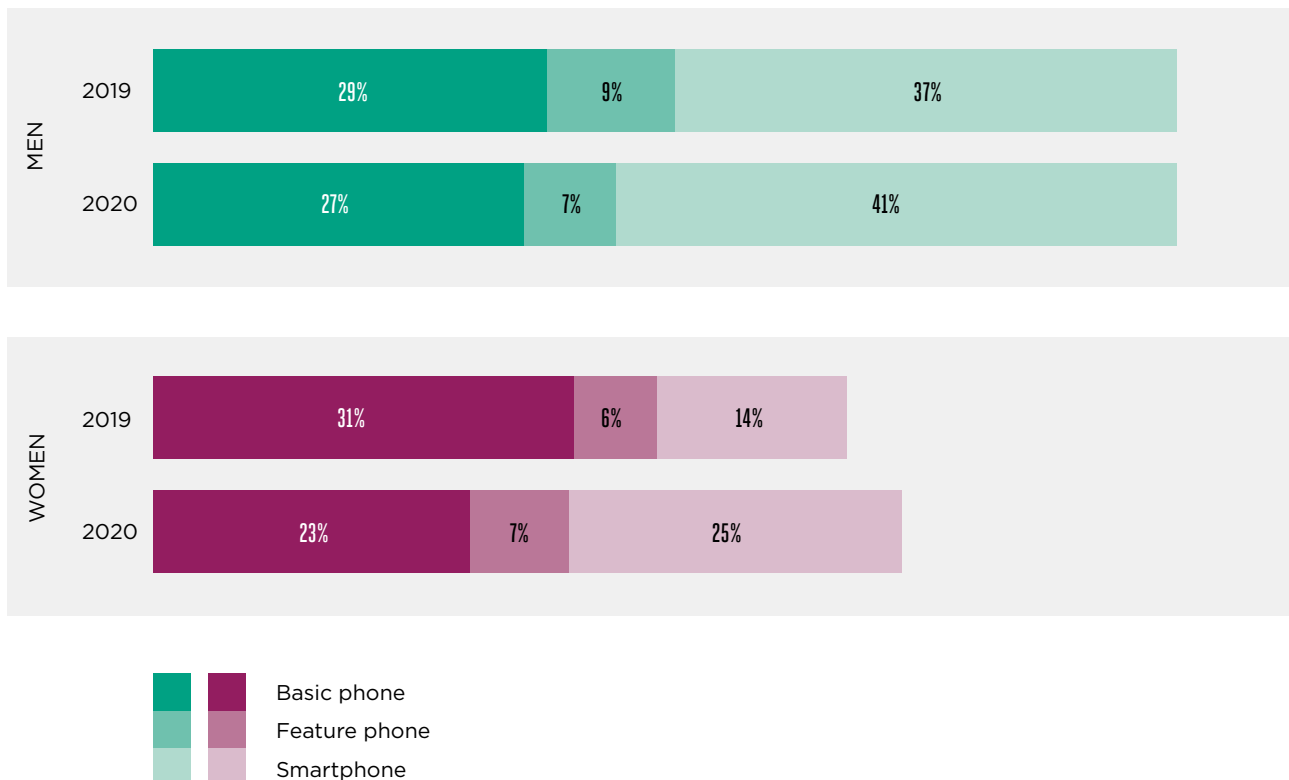
In 2020, the number of women in India who reported using mobile internet and owning a smartphone grew rapidly, and even faster than for men. Compared to other surveyed countries, this growth for women in India has been exceptional. Last year's Mobile Gender Gap Report highlighted this trend, but growth has been even stronger this year. In 2020, 25 per cent of Indian women reported owning a smartphone (Figure 16) compared to 14 per cent in 2019, and 30 per cent of Indian women reported using mobile internet, compared to 21 per cent in 2019 (Figure 17).

It is interesting to note the changes in handset types owned by men and women in India from 2019 to 2020 (Figure 16). Overall, device ownership has remained flat among Indian men, but it has increased among women, driven primarily by smartphone ownership. In addition, the proportion of women who own a basic phone has declined substantially, from 31 per cent in 2019 to 23 per cent in 2020.

Figure 16

Share of population in India by type of handset owned, 2019–2020

Percentage of total adult population



Source: GSMA Consumer Survey 2019 and 2020

Base: Total population aged 18+

The total percentage of handset owners does not exactly match the percentage of mobile owners in Figure 2. Figure 2 captures people who have sole or main use of a SIM card whereas Figure 16 represents people who have sole or main use of a handset.

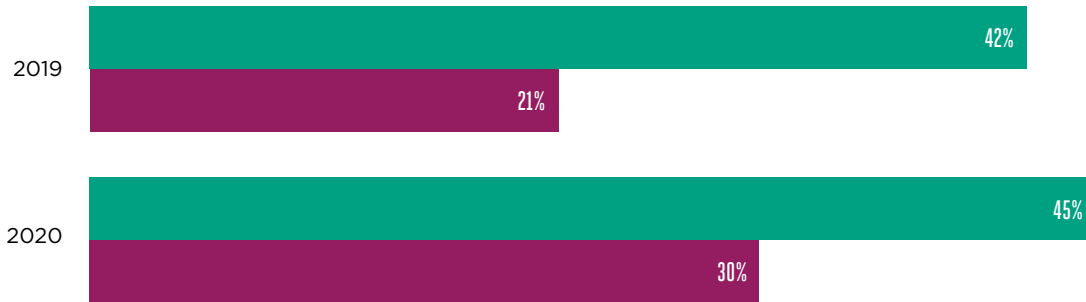
Respondents are categorised according to the most advanced device they own, and can only be included in one category. Smartphone owners that also own a basic or feature phone are counted only as smartphone owners.

n= from 973 to 1,099 for women and n= from 1,153 to 1,279 for men

Figure 17

Mobile internet use in India by gender, 2019-2020

Percentage of total adult population



Source: GSMA Consumer Survey 2019 and 2020
 Base: Total population aged 18+
 n= from 973 to 1,099 for women and n= from 1,153 to 1,279 for men



Evidence from our quantitative and qualitative research suggests that the key drivers of this rapid uptake of smartphones and mobile internet use among Indian women are further improvements in the affordability of internet-enabled handsets and data, and the additional justifications that COVID-19 restrictions and lockdowns, have provided to drive women online. Qualitative research

with female mobile internet users in Bihar and Madhya Pradesh, as well as expert interviews, highlighted four important life needs that have been driving smartphone uptake and mobile internet use among women over the last year: online education for children, video calls, access to income opportunities and increased demand on devices in the home for entertainment and other purposes.



“[COVID-19] has been a multiplier of digital inclusion for women. What would have taken five years has taken place in one.” Digital Empowerment Foundation



Affordability of handsets and data. The evidence suggests a continued decline in the cost of internet-enabled handsets and data as a barrier to mobile internet adoption for men and women in India. For example, fewer male and female mobile users³⁶ who had not used mobile internet reported affordability as a barrier in 2020 than the year before. More specifically, the proportion of female mobile users who reported handset cost as a top barrier to mobile internet adoption decreased by 14 percentage points compared to last year. Furthermore, of all survey countries, India has the highest relative level of mobile internet use given awareness levels. These findings are

likely linked to a rapid decline in the cost of internet-enabled handsets and data in recent years. This is a promising trend and one which appears to be having a disproportionate effect on women.

It is worth noting that while the cheapest smartphone in India is 206 per cent of average monthly income, JioPhone, an LTE-enabled handset launched by Reliance Jio in partnership with KaiOS, is just 24 per cent.³⁷ However, the qualitative research suggests that, for many women, the cost of an internet-enabled handset is still unaffordable even though the desire to own one appears to be growing.



“It became a priority to buy a mobile phone, irrespective of whether people could afford it or not.” Digital Empowerment Foundation



Children’s education. Long periods of school closures during the pandemic prompted many schools in India to move learning online, creating pressure for households to access internet-enabled devices. This presented a unique opportunity for women to

negotiate ownership of an internet-enabled handset. Many women with children had greater access to internet-enabled devices for online education, and several pointed out that this was a socially acceptable justification for mobile internet use.



“Now there is a good excuse, as children’s online classes are going on, so women have the excuse to buy a smartphone.” Female, 18–24, rural, Bihar



In more liberal households, there was an indication that some gatekeeper attitudes about women’s smartphone ownership and mobile internet use had

shifted during the pandemic, and that it was now more accepted that owning and using a mobile was necessary and useful for women.



“Some men now recognise that women need smartphones.” Self Employed Women’s Association

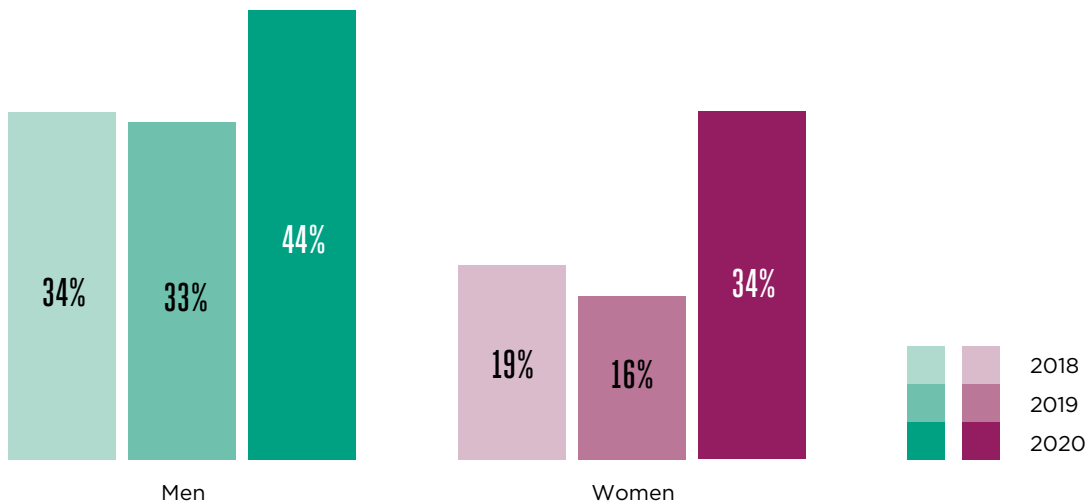


Video calls. The desire to connect with and ‘see’ family members became intense during COVID-19 travel restrictions, pushing women to seek their own internet-enabled handset. There was a substantial rise in video calls as a use case in 2020 for both male and female mobile owners, with stronger growth among women (Figure 18).

Figure 18

Growth in weekly use of video calls in India by gender, 2018–2020

Percentage of mobile owners using video calls on mobile at least once a week



Source: GSMA Consumer Survey 2018, 2019 and 2020

Base: Mobile owners aged 18+

Respondents may have engaged in video calls on a phone other than their own. The video call use case was asked only of those who reported having ever used the internet on a mobile phone.

n= from 655 to 693 for women and n= from 921 to 1,006 for men

Work and income. Several women reported using YouTube to learn new skills, such as sewing and embroidery, to boost household income, especially

in households where jobs had been lost due to lockdown measures.

“

“My smartphone is useful now. I can use [mobile internet] for my embroidery work and my daughter can use it for her studies.” Female, 29–50, Tiruvallur

”

Entertainment. Using mobile internet to watch videos, listen to music or play games was mentioned frequently. This included playing the game Ludo online

with family. Mobile internet provided a way to ease the stresses of the pandemic and the monotony of life in lockdown.

“

“I play songs on YouTube because of the tension of household things.” Female, 18–24, urban, Bihar

”

Further research is needed to better understand the rapid growth of women’s access to mobile internet in India, and how this could be replicated in other

countries. As the pandemic continues to take its toll in India, it remains to be seen whether these promising gains in women’s digital inclusion will be sustained.



Recommendations

In today's world, the mobile gender gap is one of the most crucial global issues to address. Access to a mobile phone and mobile internet provides women with a range of opportunities to improve their lives, including information and services related to income generation, education, health, safety and personal well-being. These opportunities are even more critical as the COVID-19 pandemic evolves and impacts health, livelihoods and economies around the world, disproportionately affecting women. Mobile technology is supporting women during the pandemic by enabling them to access COVID-19 information, stay connected to their families during lockdowns, continue their business activities where possible and access government and other support. Still, the women who are most likely to benefit from mobile connectivity are still the furthest away from accessing it.

The mobile gender gap demands significant attention from all stakeholders to enable women and their families to reap the full benefits of connectivity during the pandemic and ensure that progress in reducing this gap is not reversed, particularly as economies suffer and mobile becomes less affordable. It is only with

the concerted action and collaboration of different stakeholders that we can truly accelerate progress on this issue, including the mobile industry, development community and policymakers.

This section includes recommendations for all stakeholders, as well as more specific recommendations for four types of organisation: mobile network operators (MNOs), internet companies, policymakers and regulators and the development community (Figure 19). The actions of these stakeholders will be most effective if they are grounded in an understanding of the country-level barriers that women face to owning and using a mobile phone. Action is also needed to address the structural barriers and inequalities underpinning the mobile gender gap, including disparities between men and women in income and education, and restrictive social norms. There are also more detailed recommendations on what MNOs and other stakeholders can do to reach more female customers in LMICs with mobile in the 2020 GSMA Connected Women report, "Reaching 50 Million Women with Mobile: A Practical Guide".³⁸

Recommendations for all stakeholders to close the mobile gender gap

Ensure there is a focus on gender equality and reaching women at an organisational and policy level through senior leaders championing the issue and setting specific gender equity targets.

Understand the mobile gender gap by improving the quality and availability of gender-disaggregated data, and understanding women's needs and the barriers they face to mobile ownership and use.

Explicitly address women's needs, circumstances and challenges in the design and implementation of mobile-related products, services, interventions and policies. This includes addressing the barriers women face related to access, affordability, safety and security, knowledge and skills, and the availability of relevant content, products and services.

Collaborate and partner with different stakeholders to address the mobile gender gap. Targeted intervention is needed from industry, policymakers, the development community and other stakeholders to ensure that women are no longer left behind.

Figure 19

Recommendations for closing the mobile gender gap in low- and middle-income countries, by stakeholder type and barrier addressed

Barrier addressed by the action	Mobile operators	Internet companies	Polymakers and regulators ⁴⁰	Development community
Affordability	Support industry efforts to lower the cost of internet-enabled mobile phones, especially smartphones. E.g. Partner to offer entry-level smartphones, or smart feature phones, to customers at a reduced cost.	Partner with MNOs to address handset affordability. E.g. Offer subsidies for low-cost smartphones to help trigger mobile internet adoption.	In markets where they exist, review the impact of Universal Service Funds (USFs) on the affordability of mobile and mobile internet services for women. When administered ineffectively, USFs can be counterproductive in that, by effectively taxing customers, they actually serve to raise the affordability barrier. ⁴¹ The funds should be targeted, time-bound and managed transparently. They should be allocated in a competitive and technically neutral way, in consultation with the industry, with a view to target projects with the highest possible impact. Where appropriate, this could include projects focusing on the adoption of mobile and mobile internet among women.	Partner with and support the mobile ecosystem on projects that promote handset affordability. E.g. Handset financing schemes provided through local NGO networks and grassroots networks led by women, such as women's savings groups.
Literacy and skills	Design solutions to reduce the burden of the "one-off" cost of smartphones for consumers, making them more affordable. E.g. Provide microloans or instalment repayment plans with third parties.	Consider how to adapt products and services to make them more affordable without compromising on quality. E.g. Make "data-light" versions of apps or lightweight operating systems to help reduce the cost for more price-sensitive users.	Review sector-specific taxes and fees that may exacerbate the cost barrier to mobile ownership and use and reduce investment, and that have a disproportionate impact on women. These include taxes on airtime, devices and social media usage.	Fund and/or facilitate mobile-based digital literacy training for women. E.g. Use trusted local community and peer networks to deliver digital skills training to women, potentially in partnership with an MNO.
Relevance	Develop clear and transparent pricing for credit and data, and introduce more creative pricing to appeal to price-sensitive customers. E.g. Encourage low-cost or free trial of mobile internet services through promotional deals, or extend the length of data packages.	Ensure mobile apps and operating systems are user friendly for those who are less confident and literate. E.g. Have clear user menus with fewer steps, simplified content, simple terminology and a shorter sign-up process. Use icons/symbols/pictures/videos and comic-style stories in addition to (or instead of) text.	Implement and support initiatives to help reduce the price of devices and services for consumers. E.g. Support financial institutions and local savings groups to provide risk capital for handset loans for women at lower interest rates, subsidise handsets for marginalised populations in partnership with the private sector and enable innovative data pricing strategies to help providers reach more women.	Work to address the negative influence of social norms. This includes those that restrict women's access to mobile technology by challenging misconceptions and demonstrating the positive and relevant use cases of mobile.
Safety and security	Improve customers' digital skills, including providing assistance to new users who may need additional support, and paying attention to women's needs, interests and circumstances. E.g. Train and incentivise mobile agents to provide digital skills training and support to customers, such as using the GSMA's Mobile Internet Skills Training Toolkit. ⁴²	Develop and incorporate tools to improve the usability of digital services for those with low literacy levels or who only speak their local language. E.g. Integrate voice search or text-to-speech.	Invest in public education and digital literacy initiatives that increase women's and girls' mobile digital literacy and confidence, including for women and girls of all ages, levels of education, income and familiarity with mobile and the internet. E.g. Mainstream mobile and digital skills in school curricula. Ensure online government services are developed considering the needs and capabilities of individuals with lower levels of literacy and digital skills. E.g. Provide an IVR help line, use simple terminology, local languages, icons/symbols/pictures/videos and comic-style stories in addition to (or instead of) text.	Raise awareness of the threats preventing women from accessing and using the internet and how they can be addressed. E.g. Awareness campaigns, digital literacy programmes and formal education programmes/curriculum.
Access	Ensure marketing and services are accessible for those with lower levels of literacy, digital skills and awareness and understanding of the internet. E.g. Offer content and advertising in local languages, use simple messaging, avoid technical jargon and consider the use of pictures, icons and videos.	Understand and incorporate the content, features, channels and services that women in your market find useful and relevant. E.g. Make relevant local-language video content more available and accessible.	Collaborate with the private sector and the development community to support digital literacy training for women, including those that are community-led and peer-driven. Encourage the development of an ecosystem of apps and services that meet the needs, preferences and capabilities of women and girls. Make public services available online to demonstrate the value and relevance of the internet to women and their families, as well as support more efficient delivery of government services. Increase awareness of the threats preventing women and girls from accessing and using the internet and how they can be addressed or reduced. E.g. Awareness campaigns, digital literacy programmes and formal education programmes/curriculum (targeting both men and women). Review existing legal and policy frameworks to ensure they recognise digital harassment and make it easy and safe to report online abuse. Build institutional capacity and mechanisms to monitor, investigate and prosecute reports of online abuse.	Develop and support initiatives to increase women's access to and use of mobile and mobile internet. Also consider how mainstream projects and interventions can be adapted to advance digital inclusion for women. Raise awareness of the barriers to women's mobile ownership and use, and advocate for stakeholders to take action to address the mobile gender gap.
	Communicate the relevance of mobile ownership and mobile internet use in women's daily lives. E.g. Showcase relatable use cases in marketing targeted at women and/or ensure that women are featured in more broadcast advertising campaigns as active users of the service.	Help women to navigate the internet confidently and safely and to feel secure and in control when using internet apps and services. E.g. Provide training in avoiding and responding to negative behaviours and threats, and develop tools that allow users to easily and transparently control their privacy and security settings and manage data use.		
	Develop applications and services that can help increase safety for women. E.g. Develop "safety" services like apps to help women alert contacts in an emergency or call-blocking services.	Develop apps, services and other measures to help women feel safer online. E.g. Make it easy and safe for customers to report online abuse and collaborate with relevant government agencies to ensure these reports are responded to quickly and effectively.		
	Consider the role of gatekeepers in facilitating women's mobile ownership and use. E.g. Demonstrate through marketing the value of women having access to mobiles and mobile internet.	Make mobile internet more accessible by providing internet services and operating systems in local languages.		
	Ensure agent networks are accessible for women. E.g. Ensure locations and operating hours are accessible for women, and consider recruiting female agents in settings where the roles of men and women are very different and women feel more comfortable interacting with other women.			



Appendix 1: Barriers to mobile internet use

In each of the eight survey countries, mobile users who were aware of mobile internet but had not used it were asked to identify the barriers preventing them from using the internet on a mobile phone. Strongly related or thematically overlapping barriers were grouped into composites that were used to calculate country-level rankings of barriers.⁴²

Respondents selected barriers from a pre-defined list during a face-to-face quantitative survey. The results

may not fully reflect the importance of subtle, underlying structural impediments, particularly those grounded in social norms that disproportionately affect women and might not be reported directly by respondents, such as the perceived inappropriateness of spending money on mobile services for themselves. Respondents were first asked to identify all relevant barriers, then to identify those that were most important (Figure 21) and, finally, to identify the single most important barrier (Figure 20).



Figure 20

Top barrier to mobile internet use

Percentage of mobile users who are aware of mobile internet but do not use it, and who identified the following as the single most important barrier to using mobile internet

		AFFORDABILITY				LITERACY AND SKILLS								RELEVANCE				SAFETY AND SECURITY						ACCESS														
		HANDSET COST		DATA COST		DO NOT KNOW HOW TO ACCESS INTERNET ON A MOBILE		DO NOT KNOW HOW TO USE A MOBILE		READING/Writing DIFFICULTIES		DO NOT HAVE TIME TO LEARN HOW TO ACCESS INTERNET ON A MOBILE		NOT SUFFICIENT SUPPORT IN LEARNING TO USE MOBILE INTERNET		INTERNET IS NOT RELEVANT FOR ME		INSUFFICIENT CONTENT IN LOCAL LANGUAGE		HARMFUL CONTENT (SELF/FAMILY)		STRANGERS CONTACTING ME		INFORMATION SECURITY		INTERNET DRAINS MY BATTERY		NETWORK COVERAGE		FAMILY DOES NOT APPROVE		ACCESS TO AGENT SUPPORT		SLOW CONNECTION/CANNOT DO WHAT I WANT		NO ACCESS TO INTERNET ENABLED PHONE		
		M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W			
AFRICA	Algeria	9%	14%	2%	1%	3%	2%	5%	4%	13%	32%	14%	7%	4%	0%	12%	9%	2%	0%	6%	6%	0%	1%	5%	4%	1%	1%	7%	3%	3%	14%	0%	0%	9%	1%	0%	1%	
	Kenya	42%	39%	2%	3%	8%	9%	0%	0%	7%	6%	7%	9%	4%	1%	12%	10%	0%	1%	3%	3%	3%	7%	3%	2%	1%	1%	2%	3%	0%	2%	1%	0%	1%	0%	4%	3%	
	Mozambique	24%	32%	6%	3%	12%	12%	1%	0%	9%	14%	7%	8%	3%	6%	2%	0%	4%	4%	2%	3%	2%	5%	5%	1%	3%	0%	11%	5%	0%	1%	3%	1%	2%	3%	0%	3%	
	Nigeria	42%	42%	2%	5%	5%	8%	1%	1%	17%	19%	4%	3%	1%	2%	10%	8%	0%	1%	2%	0%	3%	2%	2%	2%	2%	1%	3%	1%	1%	2%	1%	1%	2%	1%	2%	0%	
ASIA	Bangladesh	9%	11%	1%	1%	12%	13%	1%	3%	18%	14%	7%	6%	3%	1%	20%	20%	8%	4%	4%	2%	1%	2%	1%	1%	5%	0%	4%	16%	0%	1%	4%	1%	0%	1%			
	India	21%	12%	9%	5%	5%	11%	2%	5%	13%	16%	8%	11%	6%	3%	2%	5%	3%	3%	3%	1%	1%	1%	1%	6%	4%	6%	2%	1%	5%	2%	4%	0%	2%	7%	4%	2%	1%
	Pakistan	15%	7%	3%	5%	1%	1%	6%	3%	36%	27%	5%	5%	4%	2%	14%	10%	5%	5%	2%	5%	0%	3%	2%	3%	0%	1%	3%	2%	1%	20%	0%	0%	2%	0%	2%	1%	
LATIN AMERICA	Guatemala	10%	19%	6%	5%	7%	5%	0%	3%	7%	11%	13%	7%	5%	3%	3%	3%	0%	0%	13%	9%	6%	11%	15%	18%	5%	2%	0%	0%	2%	0%	3%	0%	5%	0%	1%	3%	

Source: GSMA Consumer Survey, 2020
 Base: Adults aged 18+ who have used a mobile phone in the last three months but have not used mobile internet in the last three months, despite being aware of mobile internet (excludes mobile users who are not aware of mobile internet).
 Percentages indicate the proportion of respondents who answered, "This is the most important reason stopping me" to the question, "Which one of those factors would you say is the single most important reason stopping you from using the internet on a mobile phone?"
 n = from 65 to 197 for women and n = from 63 to 131 for men



Figure 21

Important barriers to mobile internet use

Percentage of mobile users who are aware of mobile internet but do not use it, and who identified the following as a main barrier to using mobile internet

		AFFORDABILITY				LITERACY AND SKILLS								RELEVANCE				SAFETY AND SECURITY						ACCESS													
		HANDSET COST		DATA COST		DO NOT KNOW HOW TO ACCESS INTERNET ON A MOBILE		DO NOT KNOW HOW TO USE A MOBILE		READING/WRITING DIFFICULTIES		DO NOT HAVE TIME TO LEARN HOW TO ACCESS INTERNET ON A MOBILE		NOT SUFFICIENT SUPPORT IN LEARNING TO USE MOBILE INTERNET		INTERNET IS NOT RELEVANT FOR ME		INSUFFICIENT CONTENT IN LOCAL LANGUAGE		HARMFUL CONTENT (SELF/FAMILY)		STRANGERS CONTACTING ME		INFORMATION SECURITY		INTERNET DRAINS MY BATTERY		NETWORK COVERAGE		FAMILY DOES NOT APPROVE		ACCESS TO AGENT SUPPORT		SLOW CONNECTION/CANNOT DO WHAT I WANT		NO ACCESS TO INTERNET ENABLED PHONE	
		M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W		
AFRICA	Algeria	15%	19%	9%	18%	7%	10%	15%	14%	20%	36%	30%	21%	8%	8%	19%	17%	8%	7%	14%	17%	8%	9%	10%	11%	5%	9%	12%	5%	7%	21%	3%	5%	12%	5%	4%	14%
	Kenya	50%	46%	12%	9%	19%	17%	3%	4%	11%	10%	17%	18%	8%	8%	17%	17%	5%	6%	9%	8%	8%	12%	11%	7%	6%	5%	6%	9%	0%	5%	1%	2%	5%	4%	11%	8%
	Mozambique	37%	38%	22%	18%	29%	27%	9%	8%	18%	22%	19%	19%	15%	14%	8%	9%	6%	10%	12%	9%	7%	9%	16%	6%	10%	7%	22%	9%	1%	5%	14%	10%	15%	5%	13%	14%
	Nigeria	44%	50%	20%	17%	18%	17%	3%	7%	26%	34%	13%	11%	2%	5%	21%	14%	3%	5%	4%	1%	6%	5%	5%	2%	4%	2%	3%	2%	1%	5%	1%	2%	2%	3%	8%	7%
ASIA	Bangladesh	27%	24%	11%	9%	26%	32%	11%	11%	31%	22%	19%	24%	23%	16%	38%	36%	11%	7%	8%	8%	5%	10%	3%	6%	4%	7%	15%	12%	5%	20%	2%	3%	8%	6%	10%	12%
	India	30%	24%	27%	22%	9%	20%	11%	15%	20%	24%	18%	24%	16%	12%	11%	13%	12%	9%	9%	10%	7%	10%	11%	10%	13%	11%	7%	11%	5%	11%	7%	5%	13%	15%	7%	12%
	Pakistan	27%	17%	21%	11%	8%	9%	14%	14%	44%	36%	20%	16%	13%	6%	26%	22%	16%	11%	7%	10%	5%	10%	9%	9%	4%	3%	9%	6%	6%	27%	1%	3%	4%	4%	7%	6%
LATIN AMERICA	Guatemala	27%	43%	26%	30%	16%	12%	8%	12%	10%	26%	22%	17%	8%	10%	10%	11%	6%	3%	32%	37%	22%	36%	35%	38%	17%	16%	6%	7%	6%	6%	7%	6%	13%	3%	13%	19%

Source: GSMA Consumer Survey, 2020
 Base: Adults aged 18+ who have used a mobile phone in the last three months but have not used mobile internet in the last three months, despite being aware of mobile internet (excludes mobile users who are not aware of mobile internet).
 Percentages indicate the proportion of respondents who answered, "This is one of the most important reasons stopping me" to the question, "Which, if any, of those factors would you say are the most important reasons stopping you from using the internet on a mobile phone?"
 n = from 67 to 199 for women and n = from 64 to 134 for men



Appendix 2: Mobile use cases

Figure 22

Weekly mobile use among mobile owners

Percentage of mobile owners who have performed each use case at least once a week

			NETWORK CALLS	ONLINE CALLS	VIDEO CALLS	SMS/MMS	INSTANT MESSAGING	SOCIAL NETWORKING	FREE GAMES	FREE VIDEO	FREE MUSIC	PAID ENTERTAINMENT	GET INFORMATION ON PRODUCTS/SERVICES	ORDER GOODS/SERVICES	ONLINE BANKING SERVICE/APP	MANAGE BILLS	ACCESS HEALTH SERVICES/INFORMATION	ACCESS GOVERNMENT SERVICES	LOOK/ APPLY FOR JOBS	ACCESS EDUCATIONAL SUPPORT	ACCESS AGRICULTURAL INFORMATION	READ NEWS	USE MAPS/ TRAFFIC INFORMATION	RIDE HAILING/ TAXIS
AFRICA	Algeria	M	80%	64%	56%	73%	66%	65%	33%	59%	35%	29%	26%	16%	11%	13%	24%	15%	17%	20%	13%	42%	28%	10%
		W	79%	58%	54%	70%	60%	61%	25%	54%	31%	23%	20%	14%	10%	10%	25%	8%	16%	31%	8%	41%	26%	7%
	Kenya	M	93%	29%	24%	88%	50%	50%	36%	41%	27%	14%	22%	5%	8%	18%	12%	6%	10%	20%	14%	39%	12%	4%
		W	90%	17%	11%	85%	32%	32%	30%	21%	16%	10%	10%	2%	3%	12%	9%	4%	3%	15%	7%	14%	4%	3%
	Mozambique	M	87%	34%	31%	90%	34%	32%	33%	19%	19%	17%	12%	7%	12%	22%	12%	11%	14%	15%	13%	25%	14%	6%
		W	82%	24%	23%	81%	26%	24%	18%	15%	17%	11%	9%	7%	10%	15%	11%	10%	10%	16%	10%	19%	11%	5%
	Nigeria	M	86%	41%	35%	93%	55%	54%	42%	26%	22%	12%	18%	8%	18%	9%	10%	8%	9%	18%	9%	43%	12%	7%
		W	87%	31%	26%	90%	39%	40%	32%	21%	14%	8%	15%	5%	12%	8%	6%	5%	6%	15%	5%	28%	9%	3%
ASIA	Bangladesh	M	88%	35%	35%	54%	34%	35%	34%	29%	15%	15%	7%	4%	6%	7%	6%	7%	7%	9%	4%	14%	11%	4%
		W	86%	26%	26%	49%	24%	26%	20%	20%	9%	11%	2%	3%	2%	2%	4%	4%	2%	5%	2%	7%	4%	1%
	India	M	70%	45%	44%	56%	45%	43%	37%	46%	36%	32%	22%	15%	17%	16%	19%	16%	17%	26%	18%	34%	20%	13%
		W	68%	32%	34%	46%	32%	28%	28%	34%	26%	25%	13%	10%	10%	10%	15%	12%	13%	21%	12%	22%	14%	10%
	Pakistan	M	88%	32%	29%	57%	32%	29%	20%	24%	11%	10%	6%	3%	3%	5%	4%	4%	4%	5%	4%	12%	6%	3%
		W	86%	24%	23%	56%	23%	17%	20%	18%	10%	10%	4%	4%	3%	2%	5%	4%	3%	8%	3%	7%	3%	3%
LATIN AMERICA	Guatemala	M	88%	59%	52%	67%	68%	65%	38%	51%	35%	21%	25%	11%	12%	6%	16%	13%	13%	42%	9%	55%	28%	8%
		W	86%	57%	45%	62%	60%	58%	22%	41%	26%	15%	18%	6%	6%	4%	12%	8%	9%	40%	3%	46%	14%	7%

Source: GSMA Consumer Survey 2020
 Base: Mobile owners aged 18+
 Percentages indicate the proportion of respondents who answered that they perform each use case at least once a day or at least once a week.
 Mobile internet use cases were only asked of mobile owners that have used the internet before. However, the percentages still represent the proportion of mobile owners overall who use that mobile internet use case.
 n= from 98 to 655 for women and n= from 155 to 921 for men





Appendix 3: Methodology

This report is based on an analysis of the results of face-to-face surveys conducted by the GSMA in eight LMICs in 2020. This is supplemented by 2017, 2018

and 2019 GSMA survey results from 20 additional countries,⁴³ as well as third-party survey results that cover another 10 countries.⁴⁴

Survey methodology

In all countries surveyed in 2020, a nationally representative sample of approximately 1,000 male and female adults aged 18 and over were surveyed, with the exception of India where the sample was approximately 2,000. The sampling frame was predominantly based on data from national statistics offices, including census data where possible, and a range of other sources. To ensure geographically representative distribution of interview subjects, particularly in urban and rural areas, around 100

sampling points were used per country. However, very remote areas or areas with security concerns were excluded. Interviews were conducted with individuals in the local language and typically on the doorstep of the home due to COVID-19 safety precautions. All surveys were interviewer-administered using handheld devices. Both female and male interviewers conducted the surveys. Data was weighted to known population profiles to correct any imbalances in the distributions achieved during fieldwork.

Extrapolating the mobile gender gap to non-surveyed countries

To estimate the gender gaps in mobile ownership, smartphone ownership and mobile internet use across all LMICs, an extrapolation model was developed. The 28 countries included in the GSMA Intelligence Consumer Surveys represent 78 per cent of the total adult population of all LMICs.⁴⁵ Data from the 2017, 2018, 2019 and 2020 Consumer Survey countries served as the primary inputs for the model.⁴⁶ Third-party and publicly available survey data was used when it was considered robust, which provided gender gap measures for mobile ownership and internet use for an additional 10 countries and smartphone ownership for an additional two countries.⁴⁷ All country-level figures cited in this study were derived directly from GSMA Intelligence face-to-face survey results.

Regression analysis identified the independent variables that were key to predicting each mobile gender gap. An equation was generated for each gender gap to estimate the gender gap in LMICs not included in the survey. Each equation was tested using several different measures of model fit and accuracy (including adjusted

R-squared, RMSE, MAE, AIC/BIC, as well as out-of-sample testing). The selected models demonstrated the highest level of fit when comparing predicted results with the actual results derived from the survey.

The top section of Table 2 outlines the final predictors and corresponding coefficients used in the final equations. The bottom section outlines the performance of each model against statistical diagnostics. The preferred models for mobile ownership, mobile internet use and smartphone ownership are consistent with The GSMA Mobile Gender Gap Report 2020. However, raw survey inputs have been updated to account for new data released in 2020⁴⁸ and, as a result, some modelled data points have been revised. For example, the modelled mobile internet gender gap in Middle East and North Africa for 2019 was estimated to be 21 per cent in The Mobile Gender Gap Report 2020. However, with updated survey trends, the modelled estimate for 2019 has been revised to 19 per cent.

Table 2

Final predictor variables used in extrapolation models

Predictor variables for mobile gender gap model	Predictor variables for mobile internet gender gap model	Predictor variables for smartphone gender gap model
Composite “income education” indicator capturing GNI per capita and mean years of schooling for women (Source: UNDP)	GDP per capita (Source: IMF)	GDP per capita (Source: IMF)
Mobile phone ownership among adult women (Source: Gallup World Poll)	Facebook Gender Gap (Source: Facebook Audience Insights)	Facebook Gender Gap (Source: Facebook Audience Insights)
South Asia “dummy” variable ⁴⁹	South Asia “dummy” variable	South Asia “dummy” variable
	Mean years of schooling for women (Source: UNDP)	Mean years of schooling for women (Source: UNDP)

Qualitative interviews

To support the findings of the quantitative GSMA Consumer Survey 2020 implemented in partnership with Ipsos, qualitative field research and analysis were carried out in India and Kenya in March 2021 by Basis. The research aimed to provide further context around the impact of COVID-19 on mobile internet use and smartphone ownership among women in both

countries. The fieldwork consisted of a total of 12 rural and seven urban end user interviews, 16 of which were with smartphone owners and three with feature phone owners who used mobile internet in each market (Table 3). Five expert interviews were also conducted in Kenya and seven in India (Table 4). All interviews were conducted remotely via video call.

Table 3

Demographics of end users

	India*	Kenya
Number of urban female respondents	7	5
Number of rural female respondents	12	7
Number of urban male respondents	0	2
Number of rural male respondents	0	5
Total number of respondents	19	19

* In India, the focus was on obtaining additional feedback from women on specific research questions arising from the Consumer Survey, whereas in Kenya the Consumer Survey highlighted specific research questions for both men and for women for which there would be particular value in obtaining additional feedback.

Table 4

Expert interviews

India	Kenya
BBC Media Action India	Asphalt & Ink
Centre for Entrepreneurship	Branding Beyond Borders
Digital Empowerment Foundation (DEF)	Busara
Microsave	Quality Control Afrika (QCA)
Purple Audacity	World Vision International
Self Employed Women’s Association (SEWA)	
World Vision India	





Endnotes

1. GSMA Intelligence, Q1 2021
2. International Telecommunication Union (ITU) [estimates for 2019](#).
3. GSMA Intelligence, 2020
4. GSMA. (2020). [The Digital Exclusion of Women with Disabilities](#).
5. Butler, C. and Shanahan, M. (27 August 2020). “[Does just being a woman reduce the likelihood of using mobile?](#)”, GSMA Mobile for Development Blog.
6. Lindsey, D. (20 April 2020). “[Why COVID-19 has increased the urgency to reach women with mobile technology](#)”, GSMA Mobile for Development Blog.
7. UN Women. (2020). [From insights to action: Gender equality in the wake of COVID-19](#).
8. GSMA Connected Women. (2020). [The Mobile Gender Gap Report 2020](#).
9. Fieldwork had been planned in an additional two countries, Myanmar and Mexico, but COVID-19 restrictions meant that it was not possible to conduct the research.
10. COVID-19 restrictions during this time varied across markets. Restrictions included but were not limited to: school and workplace closures; restrictions on gatherings; stay at home requirements; internal and external travel restrictions; and curfews.
11. Urban and rural men and women in Rift Valley and Nyanza (n=19) and five expert interviews.
12. Urban and rural women in Madhya Pradesh and Bihar (n=19) and seven expert interviews.
13. These figures are for Q4 2020 (GSMA Intelligence). By comparison, the figures for Q4 2019 were 83% and 54% respectively.
14. Note that this figure was 165 million women in The GSMA Mobile Gender Gap Report 2020.
15. Respondents were asked the question: “Have you ever used the internet on a mobile phone? Please think about all the different ways of using the internet on a mobile phone. Just to confirm, people are using the internet on their mobile phones when they do any of the following: visit internet websites (e.g. Google or Amazon), visit social networking websites (e.g. Facebook, Twitter, YouTube, Weibo), send emails or instant messages (e.g. WhatsApp, Snapchat, WeChat, LINE) or download apps.” Mobile internet users are those who answered, “Yes, I have used the internet on a mobile phone in the last three months.”
16. GSMA Intelligence, 2020
17. GSMA Intelligence, 2020
18. The World Bank. (2020). [COVID-19 and the Great Reverse Migration in South Asia](#).
19. GSMA. (2020). [The Digital Exclusion of Women with Disabilities](#).
20. Defined as either those who have used the internet on a mobile phone before or those who are both aware of the internet and that it can be used on a mobile phone.
21. GSMA Intelligence, 2020
22. Algeria, Mozambique, Nigeria, India and Guatemala
23. GSMA Connected Women. (2020). [The Mobile Gender Gap Report 2020](#).

24. Important contributions to assessing digital skills in LMICs have been made from organisations including the International Telecommunication Union (ITU), ICT Research Africa, Global Mobile Digital Skills Alliance, Digital Skills Observatory and the Global Digital Literacy Framework (UNESCO, 2018).
25. A mobile user is defined as a person who has ever used a mobile phone. A mobile user does not have to personally own a mobile phone, and therefore can be a non-mobile phone owner who uses someone else's mobile phone.
26. Mobile-related tasks in the survey were: setting a password or PIN for a mobile phone; inserting a SIM card into a mobile phone; looking for information by typing a word or phrase into a search bar or app on a mobile phone; setting up a mobile phone as a "hotspot" to share its internet connection; deleting files/apps to ensure there is sufficient memory/space on a mobile phone; changing app security/privacy permissions on a mobile phone from the default settings; changing settings on a mobile phone to set a limit on data usage; creating a photo/video on a mobile phone to share with several people at the same time; and editing media, such as photos/videos/documents or other files on a mobile phone. These tasks were selected to provide a range of activities of varying levels of difficulty and aimed to be agnostic in terms of personal interests and demographics.
27. Guatemala was excluded.
28. A handset owner differs from a mobile user. A mobile user is a broader category, defined as a person who has ever used a mobile (their own or someone else's), whereas a handset owner has sole or main use of a mobile handset.
29. Only includes typing information into a search bar and not other methods, such as speech-to-text.
30. The World Bank. (2017). [The Global Findex Database 2017](#).
31. The World Bank. (2017). [The Global Findex Database 2017](#).
32. Delaporte, A. and Naghavi, N. (21 October 2019). "[The promise of mobile money for further advancing women's financial inclusion](#)", *GSMA Mobile for Development Blog*.
33. Excludes Algeria since the survey was not conducted there.
34. These questions were only asked of mobile money account owners who had heard of COVID-19.
35. All except Pakistan. Guatemala was excluded due to sample sizes below 30.
36. Excludes mobile users who are not already aware of mobile internet.
37. Alliance for Affordable Internet (A4AI). (2020). [From luxury to lifeline: Reducing the cost of mobile devices to reach universal internet access](#).
38. GSMA Connected Women. (2020). "[Top 10 recommendations for reaching women with mobile across low- and middle-income countries](#)", *Reaching 50 Million Women with Mobile: A Practical Guide*.
39. GSMA Connected Society. (2020). [Mobile Internet Skills Training Toolkit \(MISTT\)](#).
40. More detailed recommendations on how policymakers can increase mobile adoption among the undeserved can be found in the GSMA report, [Accelerating mobile internet adoption: Policy considerations to bridge the digital divide in low- and middle-income countries](#).
41. For more details, see the [Business Environment](#) section of the *GSMA Mobile Policy Handbook*.
42. These composite barriers are aggregates (not averages) of responses for between two and five sub-barriers. Access-related barriers are not grouped as a composite as they cover a disparate range of topics. 'All countries' barriers (top of Table 1) were calculated by averaging country-level data for the eight countries surveyed.
43. Seven countries were surveyed by the GSMA in 2017, 2018, 2019 and 2020: Algeria, Kenya, Nigeria, Bangladesh, India, Pakistan and Guatemala. One country was surveyed by the GSMA in 2018, 2019 and 2020: Mozambique. Five countries were surveyed by the GSMA in 2017, 2018 and 2019: Brazil, Indonesia, Mexico, Myanmar and South Africa. Four countries were surveyed by the GSMA in 2017 and 2018: Argentina, Dominican Republic, Côte d'Ivoire and Tanzania. Eight countries were surveyed by the GSMA only in 2017: Chile, Colombia, Egypt, Ghana, Nicaragua, Philippines, Thailand and Vietnam. However, since Chile is now defined as a high-income country, it is not included in this analysis. Two countries were surveyed by the GSMA in 2019: Senegal and Uganda. Fieldwork was carried out in September, October, November, December and January of 2017, 2018, 2019 and 2020.
44. These external sources include the Pew Research Center, After Access, the ITU, the Russia Longitudinal Monitoring Survey (HSE) and China Internet Network Information Center.
45. United Nations Department of Economic and Social Affairs, Population Division. (2021). [World Population Prospects 2019](#).
46. Where 2017, 2018 or 2019 data was the primary input for a country, year-on-year change between 2017, 2018, 2019 and 2020 was modelled based on changes in the values of the predictor variables between the three years.
47. Data was sourced from [After Access](#) (Cambodia, Paraguay, Peru, Rwanda), [Pew Global Attitudes and Trends](#) (Jordan, Lebanon and Philippines), [ITU](#) (Iran), [RLMS-HES](#) (Russia) and [CNNIC](#) (China). To calculate gender gap estimates in these countries, we applied the growth rate implied from our extrapolation model to the years where actual data was available.
48. Raw inputs for each year are updated with the most up-to-date data releases. Sometimes the year the data was recorded lags behind the release date, for example, the 2020 Gallup World Poll and the 2020 UNDP updates include data for 2019. This means that, in particular, the data available to update the 2020 gender gaps in mobile ownership in non-surveyed countries may not capture the potential effects of the COVID-19 pandemic. However, based on the surveyed countries, only one country (Mozambique) had a significant increase in the mobile ownership gender gap in 2020, which suggests that, in many countries, the COVID-19 pandemic may not have increased the mobile gender gap.
49. This dummy variable takes a value of 1 if a country is in South Asia. It is included to capture the disproportionately large gender gap in South Asian countries.



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