

The Digital Exclusion of Women with Disabilities

A Study of Seven Low- and Middle-Income Countries

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Definitions

Access	An individual's potential use of a mobile phone through owning, borrowing or renting.
Accessibility	Design of products, devices, services or environments so they are usable by people with disabilities.
Assistive products	Products that maintain or improve an individual's functioning and independence, thereby promoting their well-being. These include wheelchairs, hearing aids and communications aids, among others.
Disability	An umbrella term covering impairments, activity limitations and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual executing a task or action; and a participation restriction is a problem experienced by an individual engaging in daily activities.[1]
Mobile gender/ disability gap *(ownership/usage)*	Refers to how less likely one group (Group 1) is to own a mobile phone/use mobile internet/make a use case on mobile than another group (Group 2). This gap is calculated for gender and/or disability throughout the report for evaluating differences in ownership and usage of services. It is calculated by: $\frac{\text{\% Group 1 mobile owners or users} - \text{\% Group 2 mobile owners or users}}{\text{\% Group 1 mobile owners or users}}$ The **Gender Gap** refers to the differences between men and women regardless of disability. The **Disability Gap** refers to the differences between persons with and without disabilities regardless of gender. The **Gender and Disability Gap** looks at both gender and disability and refers to the gap between men without disabilities and women with disabilities.
Non-disabled person	A person who does not report any acute difficulty ("a lot of difficulty") or a complete inability ("cannot do at all") to perform the functional domains in the Washington Group Questions.

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 a 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 (an average of 94 per cent across the sample countries).
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.[2] 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.
Person with disabilities	A person who reports any acute difficulty ("a lot of difficulty") or complete inability ("cannot do at all") to perform one or more of the functional domains of the Washington Group Short Set of Disability Questions.
Washington Group Short Set of Disability Questions	A set of questions designed to identify persons with disabilities in a survey or census.[3] Respondents answer questions and report difficulties experienced in six core functional domains: seeing, hearing, walking, cognition, self-care, and communication.



The digital exclusion of women with disabilities

With over 5.2 billion unique mobile subscribers globally,[4] opportunities for our societies to be digitally connected are ever-expanding. Mobile phones are the primary, and often only, means of digital communication and internet access for many people in the world. Mobile has incredible potential to transform lives and empower people by providing a platform for sharing and accessing information, connecting to a diverse range of services and linking people across the world.

Ensuring that everyone is digitally included supports the achievement of the Sustainable Development Goals (SDGs) and ensures existing inequalities are not exacerbated as connectivity becomes increasingly important. However, certain segments of the population tend to face disproportionate barriers to adopting, using[5] and reaping the full benefits of mobile, including persons with disabilities (PWDs) and women. The first step in achieving digital inclusion for all is measuring gaps in mobile access and use, which help to reveal the extent of inequality and generate the knowledge and understanding required to inform and implement strategic change.

Stigma and lack of understanding often result in persons with disabilities being segregated and without access to equal opportunities.[6] For over a billion people in the world living with a disability,[7] mobile has the potential to break down these barriers to participation in society. However, research and data on the digital inclusion of persons with disabilities is

scarce. A recent study by the GSMA in Kenya and Bangladesh[8] found a mobile disability gap of over 10 per cent in each country, with persons with disabilities experiencing specific barriers to owning and using a mobile phone, such as a lack of understanding of mobile as an assistive technology and services that are not accessible. The research findings presented in this report suggest there are wide disability gaps in mobile ownership and use in low- and middle-income countries (LMICs).

This report also examines the intersection of disability and gender. While women in LMICs are becoming increasingly connected[9] and using mobile as a gateway to information, financial inclusion and the internet, a mobile gender gap remains. Women are eight per cent less likely than men to own a mobile phone and 20 per cent less likely to use mobile internet.[10]

The unknown digital inclusion of women with disabilities

Due to gender inequalities, many women face challenges like inadequate access to healthcare, unsafe working conditions and gender-based violence.[11] Women are also more likely to become disabled in their lifetimes than men. Global estimates indicate that one in five women have a disability compared to one in eight men.[12] Often, women and girls with disabilities are not only victims of gender-based violence and discrimination, but also face disability stigma and segregation.[13]

Mobile can help women with disabilities overcome these intersectional challenges. Mobile has demonstrable benefits for women's well-being,[14] including making women feel safer and providing access to information that helps them in their daily lives that they would not have received otherwise.[15] It has other benefits as well, such as opening access to a suite of accessibility features that can help reduce barriers to access and participation.

However, the digital divide experienced by women with disabilities is under-researched and data is virtually non-existent. It is not unusual that development efforts focused on gender equality or disability inclusion overlook how the gender and disability intersect.[16] Given the disproportionate intersectional discrimination that women with disabilities face, there is a risk they will continue to be systematically digitally excluded and reap fewer benefits from mobile than other demographic groups.

In this report, we explore for the first time gaps in digital inclusion at the intersection of gender and disability in LMICs. Using data from the GSMA Intelligence Consumer Survey 2019, we present levels of mobile access and use among women with disabilities, and how this compares with men and women both with and without disabilities in seven markets: Bangladesh, Brazil, India, Kenya, Mexico, Pakistan and Uganda.

The mobile internet user journey is experienced in many ways. For instance, social, economic and cultural factors have an impact on women's mobile access and use. Likewise, persons with disabilities experience mobile use differently than non-disabled persons depending on the type of impairment.[17] This report looks at key stages and milestones in the mobile internet user journey that can pose barriers to regular and diverse mobile use (Figure 1). Acquiring, using and learning about digital services is not necessarily a linear process. As such, this journey is only indicative and used to frame the analysis in this report.


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Figure 1

The mobile internet user journey[18]



The Washington Group Short Set of Questions was used to identify persons with disabilities based on respondents reporting that they have "a lot of difficulty" or "cannot do at all" in at least one of the functional domains.

Note on sample sizes

In reporting observed statistics, our analysis adheres to the industry norm that subgroups should have a minimum sample of n=30. In some cases, disaggregating results by disability and by gender results in sample sizes that were too small to confidently make claims about the broader population. All efforts have been made to ensure that the analysis in this report focuses on subgroups where n>30. The Washington Group Short Set of Questions was asked of respondents across eight countries, including Nigeria. However, sample sizes in Nigeria were not sufficient to be included in this report (n=18 for mobile owners with disabilities).

Due to a lack of data on the subject, the analysis considers some cases where sample sizes fell marginally below the limit of 30. An annotation has been made in the figures and tables where this is the case. Because the sample size for men with disabilities falls below 30 for Kenya, Mexico and Pakistan, the results for this group (and comparisons with other groups) in these countries should be interpreted cautiously. As the report progresses into more in-depth analysis of the barriers to mobile ownership and use, sample sizes decreased and the figures include fewer countries. For some of the analysis, such as barriers and use cases, sample sizes for one or more groups were too small and some countries have been removed.

Clarification of terms

To contextualise the insights in this report, some terms require clarification. The term **"assistive technologies"** reflects the World Health Organization's (WHO) definition, which is products and services that support the participation of persons with disabilities in society. However, this report also includes mobile in this definition, which in itself includes a number of assistive technologies. The term **"accessibility"** refers to the design elements of a product or service that ensure they can be used by all.



Key findings

1. **Women with disabilities have among the lowest rates of mobile and smartphone ownership.** In most countries, ownership gaps are widest between men without disabilities and women with disabilities. Even in countries where the mobile gender gap is small or non-existent, there is still a disability gap in mobile ownership.

2. Persons with disabilities perceive mobile as less beneficial than non-disabled persons, and, **specifically, women with disabilities perceive benefits the least**.

3. **Women with disabilities report various barriers to mobile ownership**. In Bangladesh, India, Pakistan and Uganda, **relevance, literacy and skills, and safety and security** were among the most commonly reported barriers.

4. **In most countries, regardless of gender, persons with disabilities are less aware of mobile internet than those without disabilities.** While awareness of mobile internet is lower for women than men, it is even lower for persons with disabilities, except in India. Women with disabilities have the lowest level of awareness.

5. Persons with disabilities tend to have lower levels of internet use than non-disabled persons. **Women with disabilities are the least likely to use mobile internet**, particularly in India where women are least likely to use mobile internet regardless of disability and the most commonly mentioned barrier to mobile internet is the cost of buying a phone and data.

6. **The role of gender and disability in mobile use varies by country.** In India, men with disabilities report the widest range of weekly use cases, and gender differences are greater than those due to disability. In contrast, in Brazil and Uganda, persons with disabilities report less diverse mobile use cases on a weekly basis than non-disabled persons.

7. Current approaches to digital inclusion risk overlooking the needs of women with disabilities, a particularly vulnerable and excluded group. In efforts to achieve the SDGs, **stakeholders need to consider gender and disability perspectives to address inequalities in connectivity**.

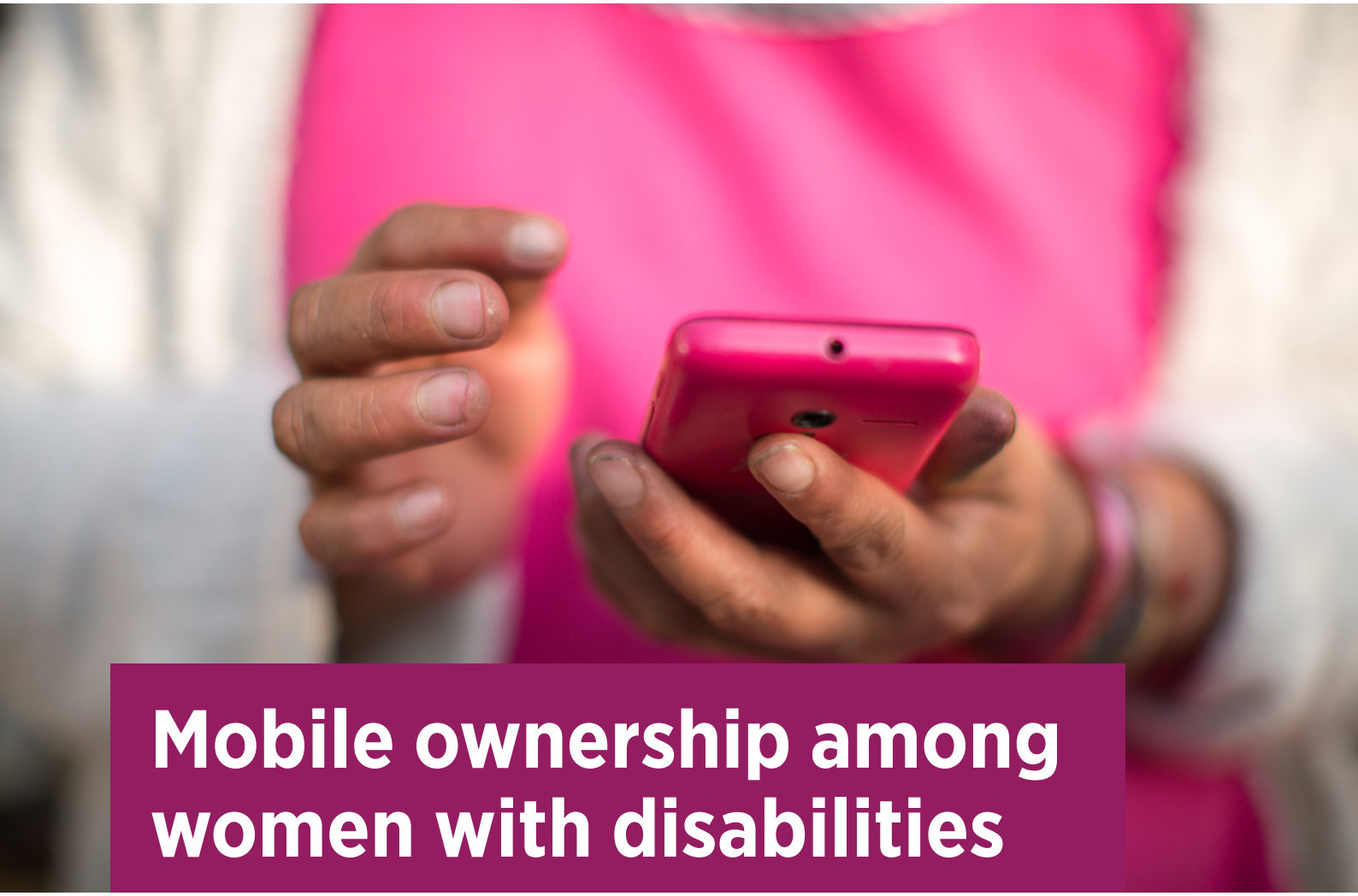
Disabled women are doubly discriminated against

Women and girls with disabilities are among the most disadvantaged and marginalised groups in society.[19] This is due to three main factors.[20] In many societies, **patriarchal attitudes** that consider women as subordinate to men perceive disability as a barrier to fulfilling their expected social roles. As a result, women with disabilities are **perceived as powerless** or **inferior**, and are often isolated or hidden. Also, the needs of women with disabilities are not considered in the provision of **basic services and legal protection**, which denies them access to services and limits participation in public and civic life. For instance, women with disabilities are often excluded from comprehensive reproductive healthcare, which limits their contraceptive choices, subjects them to forcible sterilisation or denial of parenting rights.[21]

International frameworks for the equal treatment of women with disabilities

The **Convention on the Rights of Persons with Disabilities (CRPD)** is one of the core disability frameworks that consider gender equality. The CRPD aims to ensure that State Parties commit to the equal treatment of persons with disabilities.[22] Article 6 of the CRPD recognises the vulnerability of women and girls with disabilities, and sets provisions and measures for State Parties to follow to ensure they are empowered and can participate fully in society.

The **Sustainable Development Goals (SDGs)** have equality and inclusion at their core and, through gender equality and inclusion goals, provide a framework for the empowerment and full participation of women with disabilities.[23]



Mobile ownership among women with disabilities

Women with disabilities have low levels of mobile ownership

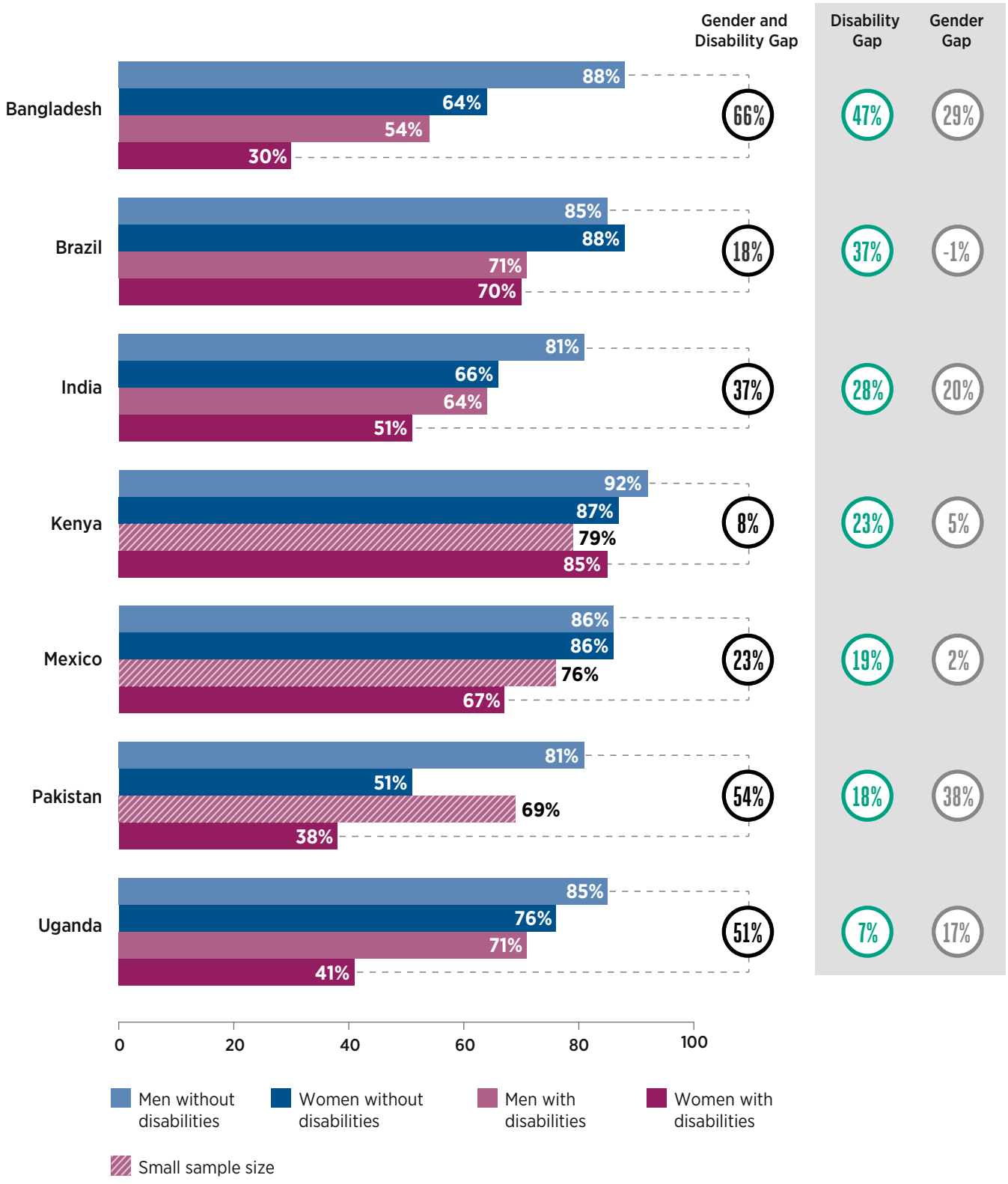
Mobile ownership is often the first stage of the mobile internet user journey and is a prerequisite for mobile internet use. In the countries surveyed for this report, however, mobile ownership among women drops significantly when the prevalence of disability is taken into account.

Women with disabilities have the lowest rate of mobile ownership in all the research countries except for Kenya (Figure 2). Brazil was the only country surveyed where men without disabilities did not have the highest rate of mobile ownership, and where mobile ownership among men without disabilities is on par with women without disabilities.

Figure 2

Mobile ownership by persons with and without disability, by gender and country

Percentage of the total population



Source: GSMA Intelligence Consumer Survey, 2019. Based on survey results for adults aged 18 and over. 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. n = from 39 to 226 for women with disabilities, n = from 425 to 873 for women without disabilities, n = from 20 to 210 for men with disabilities and n = from 423 to 1069 for men without disabilities.

Our analysis indicates that **disability is a significant predictor of mobile ownership and compounds the gender gap**. For instance, in Bangladesh, a country with a wide gender gap in mobile ownership (29 per cent),[24] women with disabilities have the lowest level of mobile phone ownership and are 66 per cent less likely to own a mobile phone than men without disabilities. In Brazil, where the gender gap is minus one per cent, women with disabilities are still 18 per cent less likely to own a mobile than men without disabilities.

Women with disabilities are the least likely to own smartphones

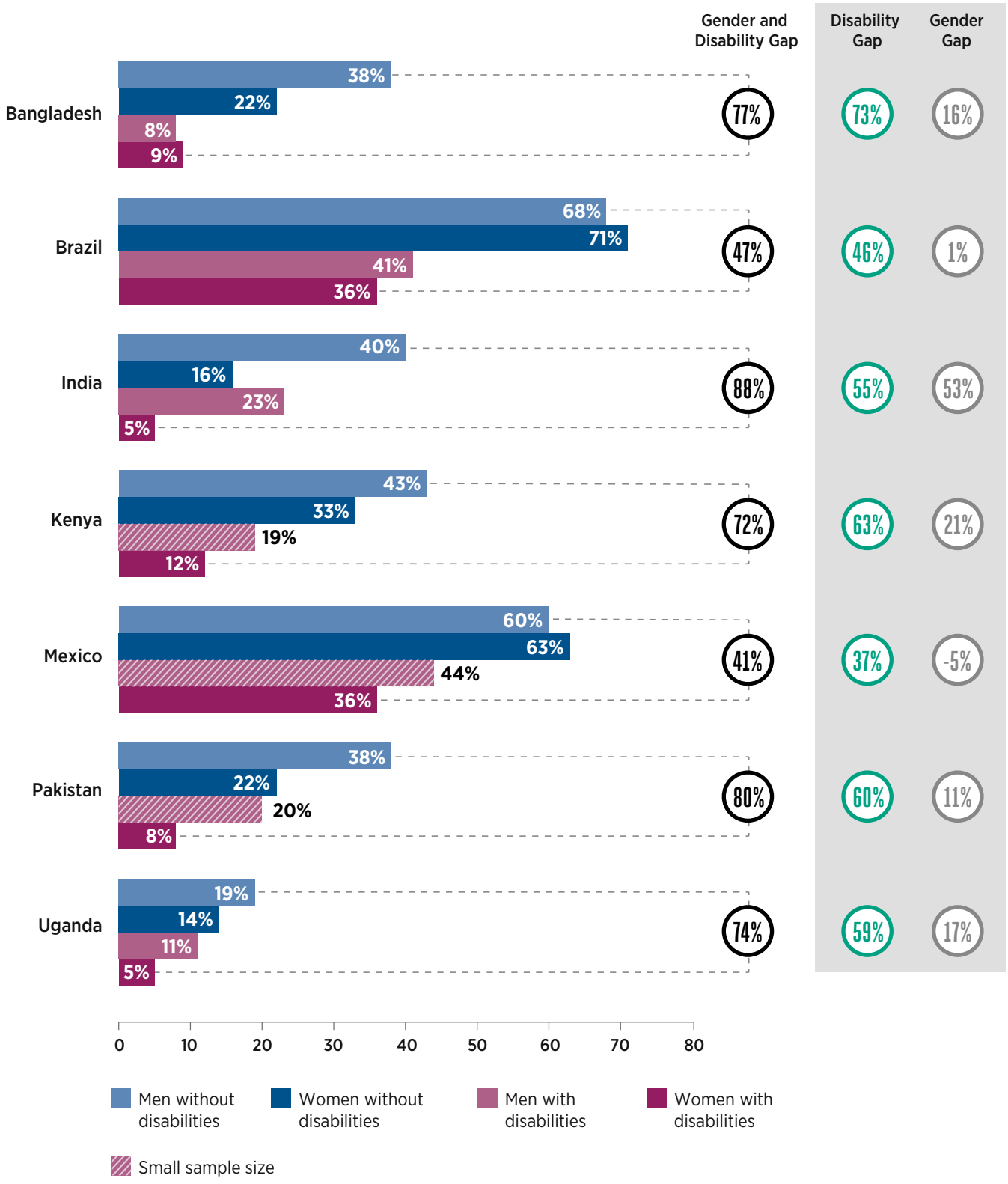
Smartphones play a critical role in digital inclusion. For many, smartphones are their main, or only, gateway to the internet. However, there are **significant disability and gender gaps in smartphone ownership** (Figure 3). In every country surveyed, persons with disabilities have a lower level of smartphone ownership than non-disabled persons. This gap is quite significant in some countries. For instance, the disability gap in smartphone ownership in India, Uganda, Pakistan Kenya and Bangladesh ranges from 55 to 73 per cent. Even in countries with the smallest gender gaps in smartphone ownership, such as Brazil and Mexico, persons with disabilities are significantly less likely than non-disabled persons to own a smartphone: 46 per cent and 37 per cent, respectively.

Compared to the rest of the groups, women with disabilities consistently have the lowest level of smartphone ownership in every country, except in Bangladesh where they are on par with men with disabilities. India, Pakistan and Bangladesh have the widest gap in smartphone ownership between men without disabilities and women with disabilities (88 per cent, 80 per cent and 77 per cent, respectively). While Brazil does not have a significant gender gap in smartphone ownership (one per cent),[25] women with disabilities are 47 per cent less likely than men without disabilities to own a smartphone.

Figure 3

Proportion of smartphone ownership by country, gender and disability prevalence

Percentage of the total population



Source: GSMA Intelligence Consumer Survey, 2019. Based on survey results for adults aged 18 and over. 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. n = from 39 to 226 for women with disabilities, n = from 425 to 873 for women without disabilities, n = from 20 to 210 for men with disabilities and n = from 423 to 1069 for men without disabilities.



Regardless of gender, persons with disabilities perceive mobile as less beneficial than non-disabled persons

Mobile offers convenient access to information, content and other services. The degree to which mobile is perceived as beneficial by mobile owners in Brazil, India, Kenya and Uganda varies by both gender and disability (Figure 4). The countries and groups analysed in Figure 5 are reduced to reflect the smaller sample sizes. Most people perceive mobile as being helpful with daily work, school or home tasks, and a convenient way to access information. In Kenya and Uganda in particular, many people across all groups perceive mobile as beneficial.

However, the benefits of mobile are not perceived equally. With the exception of Kenya, **fewer women with disabilities report the benefits of mobile than any other group**. Across the four countries, persons with disabilities perceive mobile as less beneficial than non-disabled persons. In India, the differences are considerable between these two groups, even for benefits like access to information and support with daily tasks.

Only around 50 per cent of men and women with disabilities in each country reported feeling safer from owning a mobile. In Brazil and India, few persons with disabilities feel that mobile makes them safer.

Although mobile may have a strong role to play as an assistive technology, it is **perceived as least useful by persons with disabilities**. Even when women with disabilities own a mobile, they do not benefit from it as much as other groups. Previous research by the GSMA[26] suggests that perceiving mobile as an assistive technology and understanding how to use accessibility features is vital to the digital inclusion of persons with disabilities. Findings on the perceived benefits of mobile reveal opportunities to make mobile more relevant to those who are benefitting the least.

Figure 4

Comparison of the reported benefits of mobile in Brazil, India, Pakistan and Uganda

Percentage of mobile owners who identified the following as a benefit of mobile ownership

	BRAZIL				INDIA				KENYA				UGANDA			
	M	W	M	W	M	W	M	W	M*	W	M	W	M*	W	M	W
Helps with daily work, school or home chores	81%	76%	85%	81%	46%	47%	83%	74%	86%	100%	94%	88%	91%	82%	95%	91%
Provides a feeling of safety	55%	54%	66%	64%	48%	50%	84%	79%	75%	85%	84%	85%	89%	88%	91%	92%
Gives convenient access to useful information	77%	73%	87%	90%	44%	48%	80%	68%	87%	97%	94%	87%	86%	89%	90%	86%

Men with disabilities
Women with disabilities
Men without disabilities
Women without disabilities

Lowest reported benefit across all benefits per country

Highest reported benefit across all benefits per country

Source: GSMA Intelligence Consumer Survey, 2019. Based on survey results for adults aged 18 and over. Respondents have sole or main use of a mobile phone. n = from 31 to 103 for women with disabilities, n = from 290 to 461 for women without disabilities, n = from 16 to 127 for men with disabilities, and n = from 348 to 837 for men without disabilities.
* Denotes small sample size (n<30) and should be interpreted with caution.

Relevance, literacy and skills, and safety and security are common barriers to mobile ownership for women with disabilities

Understanding barriers to mobile ownership can help develop strategies that can increase mobile ownership and use by women with disabilities. When using the Consumer Survey to analyse the barriers to mobile ownership at the intersection of gender and disability, sample sizes fall below statistically sufficient levels (n<30) for men with disabilities in all countries except for India, and for women with disabilities in Mexico, Brazil and Kenya (therefore excluded for this analysis). The results for Bangladesh, India, Pakistan and Uganda are not indicative of the barriers faced in other countries.

Accessible mobile phones can bridge many barriers to participation for persons with disabilities. However, **lack of relevance was the most commonly reported barrier for women with disabilities** (Figure 5). In Pakistan and Uganda, for instance, 57 per cent and 68 per cent of women with disabilities, respectively, reported that mobile is not relevant to their lives. Addressing the need for relevant products and services, and raising awareness of them, may help to change perceptions of the usefulness of mobile.

Many women with disabilities do not own a mobile phone due to **concerns about safety and security**. Over a third of women with disabilities in India and Pakistan, and over half in Uganda, think that mobile may put their physical safety at risk. Others think that mobile may put their identity at risk, as reported by 70 per cent of women with disabilities in Uganda and 51 per cent in Pakistan.

Awareness and knowledge of how to use mobile is an important step in digital inclusion. For many women with disabilities, literacy and skills are important barriers. This was the case for over half of women with disabilities in Pakistan, and over a third in Bangladesh and India, who reported not knowing how to use a mobile phone as a barrier.

Access and affordability barriers were among the least reported barriers. However, the cost of a handset was a reported barrier for over 20 per cent of women with disabilities in Bangladesh, India and Uganda. Also, 38 per cent of women with disabilities in Pakistan and 23 per cent in India identified the affordability of mobile credit as a barrier, and over a third in each country considered the difficulty or expense of phone charging a barrier.

Figure 5

Comparison of reported barriers to mobile ownership by women with disabilities in Bangladesh, India, Pakistan and Uganda

Percentage of non-mobile users who identified the following as a barrier to mobile ownership

		BANGLADESH	INDIA	PAKISTAN*	UGANDA
Access	ID	14%	19%	18%	17%
	Family does not approve	22%	18%	17%	9%
	Access to agent support	9%	15%	20%	20%
	Network coverage	14%	19%	11%	17%
	Battery charging	17%	30%	38%	12%
Affordability	Credit cost	15%	23%	38%	12%
	Handset / SIM cost	23%	24%	15%	27%
Literacy and skills	Reading / writing difficulties	17%	18%	33%	12%
	Do not know how to use a mobile	36%	32%	52%	24%
Relevance	A mobile phone is not relevant for me	38%	38%	57%	68%
Safety and security	Mobile is not relevant for me	33%	38%	56%	48%
	Personal safety	23%	31%	32%	48%
	Information security	17%	37%	51%	70%



Least reported barrier by country

Most reported barrier by country

Source: GSMA Intelligence Consumer Survey, 2019.
Base: Non-mobile owners aged 18+
Mobile ownership is defined as a person 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.
Percentages indicate the proportion of non-mobile owners who responded, "This is something that is stopping me" to the question, "For each of the possible reasons that I read out, please indicate whether this is something that stops you at all from having a mobile phone or SIM card, connected to a mobile operator's network."
n = from 29 to 112.
* Denotes a small sample size (n<30) and should be interpreted with caution.

The Digital Exclusion of Women with Disabilities



Mobile internet use by women with disabilities

The internet is connecting people by making it faster and easier to communicate and share information. Mobile is an important gateway to the internet for most internet users. Our survey results show that 62 per cent of internet users have accessed it solely through a mobile phone. While access to the internet through mobile has grown quickly, 60 per cent of people surveyed in those countries have not accessed mobile internet in the last three months, over half of whom are women. Across LMICs, women are 20 per cent less likely than men to use mobile internet,[27] although the gap varies widely both regionally and at the country level.

As reported by the GSMA's *Mobile Gender Gap Report 2020*, markets with the widest gender gaps in mobile internet use had low levels of awareness.[28] Low awareness of mobile internet among women is one of the most important contributors to the gender gap in mobile internet use in LMICs. Despite this, there has been disproportionately strong growth in mobile internet awareness among women in the last three years, narrowing the gender gap considerably. However, further analysis of the intersection of gender and disability reveals gaps in awareness even where gender gaps are closing.

Despite strong growth in mobile internet awareness for both men and women in recent years, a substantial gap remains between non-disabled and disabled persons

A noteworthy example is Bangladesh where a wide gender gap in mobile internet awareness has almost entirely closed in the last three years. As mobile internet awareness among women doubled, the gender gap narrowed from 32 per cent in 2017 to three per cent in 2019. Despite this progress, a significant disability gap remains. As shown in Figure 6, the differences between persons with disabilities and non-disabled persons seem to be more significant in Bangladesh than gender differences.

In contrast, women in India are 30 per cent less likely than men to be aware of mobile internet. Notably, women without disabilities were least aware of mobile internet, and India was the only country surveyed where women without disabilities were less aware than men and women with disabilities. Of the seven countries surveyed, India has the smallest disability gap in awareness (four per cent). This small gap warrants further research as it could unlock mechanisms to close the disability gap in other countries at this crucial step in the mobile internet user journey.

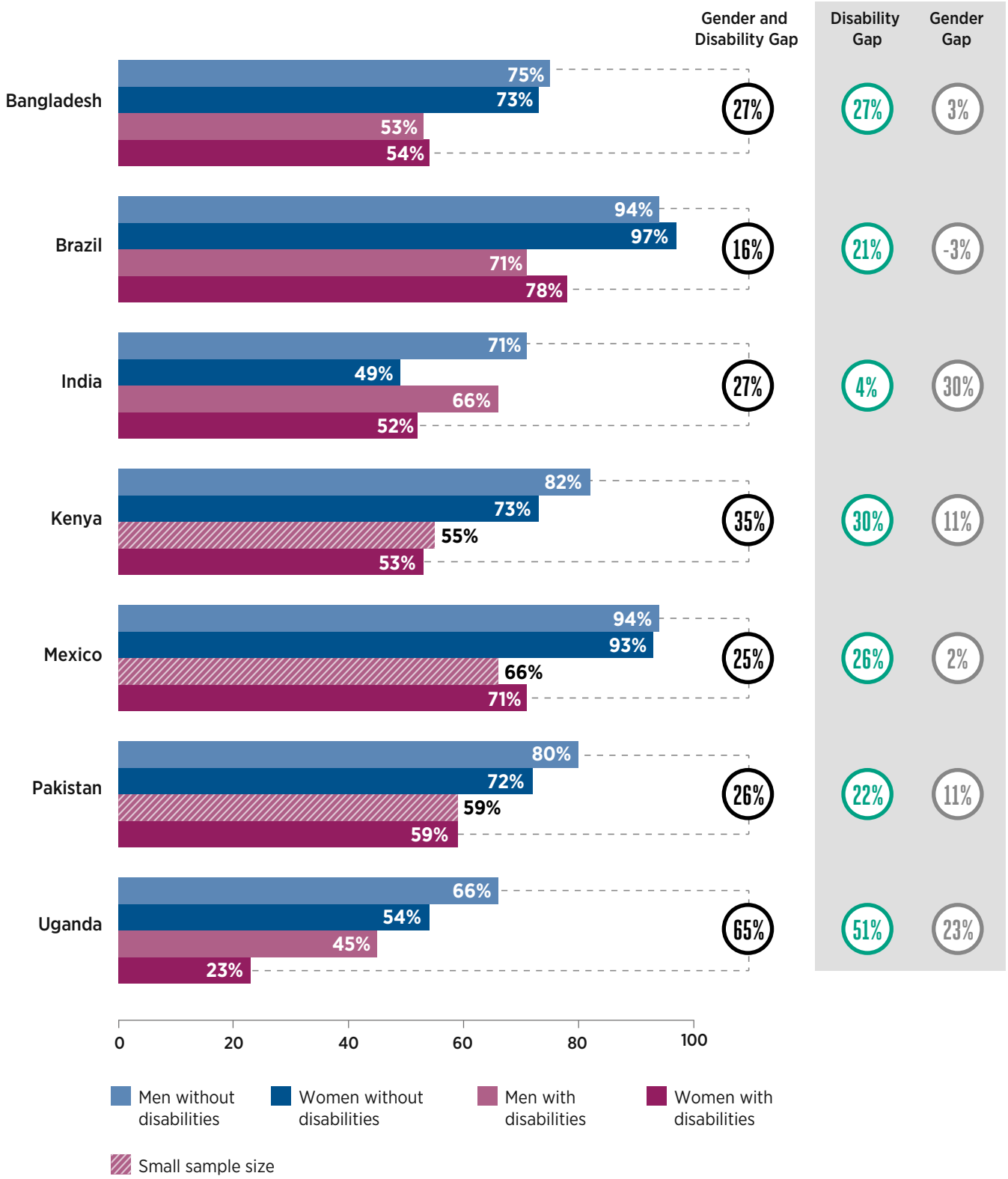
In Brazil, the gender gap in awareness was inverse, indicating that women tend to be more aware of mobile internet than men, and this holds true regardless of disability (Figure 6). However, to achieve equal levels of awareness, Brazil's wide disability gap (21 per cent) must be addressed.

The disability gap in mobile internet awareness varies widely by country (Figure 6). With the exception of India, the disability gap is greater than the gender gap in every country. Uganda has the widest disability gap in mobile internet awareness (51 per cent). In most countries, **non-disabled persons are more aware of mobile internet than persons with disabilities**, and the greatest difference in awareness is between men without a disability and women with a disability. The gender and disability gaps both need to be addressed to achieve equal awareness.

Figure 6

Awareness of mobile internet by gender and disability prevalence

Percentage of total population



Source: GSMA Intelligence Consumer Survey, 2019. Based on survey results for adults aged 18 and over. 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. n = from 39 to 226 for women with disabilities, n = from 425 to 873 for women without disabilities, n = from 20 to 210 for men with disabilities and n = from 423 to 1069 for men without disabilities.

In all seven countries surveyed, women with disabilities are the least likely to use mobile internet

In the countries surveyed for this report, the gender gap is amplified at the intersection with disability. Women with disabilities are the least likely to use mobile internet of all groups, even in countries with inverse gender gaps like Brazil (Figure 7). Interestingly, women and men with disabilities in Brazil have similar levels of internet use, which suggests that disability rather than gender may play a greater role in mobile internet use.

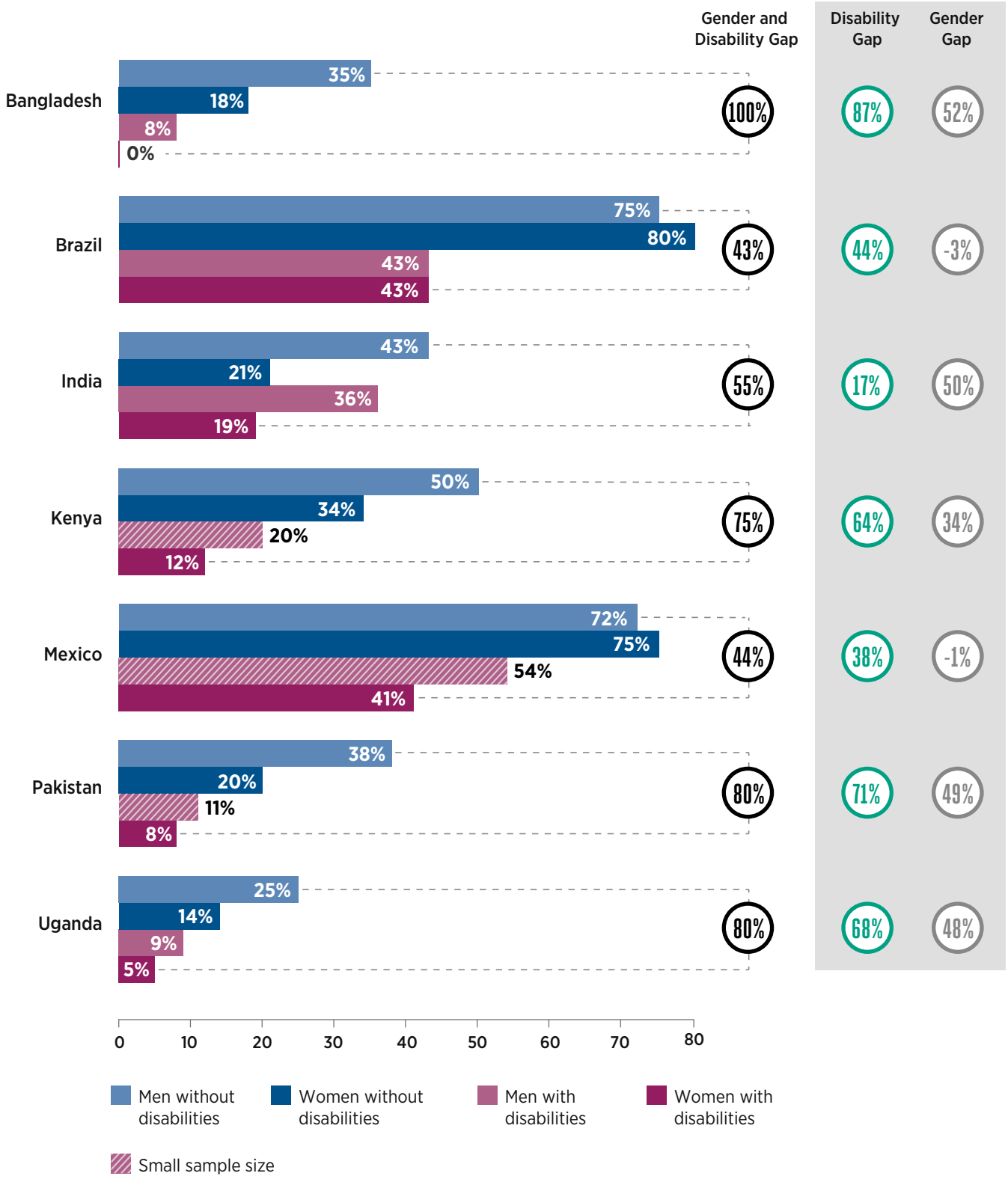
Of the countries surveyed, India, Pakistan and Uganda have the widest gender gaps in mobile internet use (50 per cent, 49 per cent and 48 per cent, respectively) and there are also wide gaps between women with disabilities and men without disabilities (55 per cent, 80 per cent and 80 per cent, respectively). In Bangladesh, not a single woman with a disability reported having used mobile internet in the last three months. Interestingly, in India, women are least likely to use mobile internet regardless of disability.



Figure 7

Mobile internet use by gender and disability prevalence

Percentage of total population



Source: GSMA Intelligence Consumer Survey, 2019. Based on survey results for adults aged 18 and over. Respondents were asked if they have used the internet on a mobile phone in the last 3 months. n = from 39 to 226 for women with disabilities, n = from 425 to 873 for women without disabilities, n = from 20 to 210 for men with disabilities and n = from 423 to 1069 for men without disabilities.

Affordability is a common barrier to mobile internet use for women with disabilities in India

While our analysis so far has shown large gaps in mobile internet uptake by women and men both with and without disabilities, it is important to understand the barriers to mobile internet use that women with disabilities might face. Survey respondents who were aware of mobile internet but do not use it were asked to identify barriers to mobile internet use. As discussed earlier, **there is a substantial disability gap in mobile internet awareness across all countries surveyed**. As a result, the sample size of respondents for these questions fell below the statistical threshold for analysis (n>30) in all countries except India. The results for India have been analysed in this section (Figure 8) to provide a view of how barriers to mobile internet use may be perceived by women with disabilities. However, since barriers are context-specific, barriers in India are not necessarily representative of those in other countries.

In India, the cost of buying a phone and data are the most commonly reported barriers for women with a disability. These are followed by lack of knowledge of how to access internet on a mobile phone and the perception that the internet is not relevant to their lives.



Figure 8

Barriers to mobile internet use as reported by women with disabilities in India

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

		INDIA
		Women with disabilities
Access	Family does not approve	17%
	Access to agent support	15%
	Network coverage	18%
	Internet drains my battery	16%
	Slow connection / cannot do what I want	15%
Affordability	Handset cost	37%
	Data cost	35%
Literacy and skills	Do not know how to access internet on a mobile	34%
	Reading / writing difficulties	29%
	Do not know how to use a mobile	25%
	Do not have time to learn how to access internet on a mobile	26%
	Not sufficient support in learning to use mobile internet	24%
Relevance	Insufficient content in local language	27%
	Internet is not relevant for me	31%
Safety and security	Strangers contacting me	21%
	Harmful content (self / family)	11%
	Information security	15%

Least reported barrier — Most reported barrier

Source: GSMA Intelligence Consumer Survey, 2019
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 something that is stopping me" to the question, "For each of the possible reasons that I read out, please indicate whether this is something that stops you at all from using the internet on a mobile phone."
n = 42



How mobile is used by women with disabilities

While mobile ownership and access to mobile internet are fundamental to digital inclusion in LMICs, equal usage of mobile services is also necessary to ensure users reap the benefits of mobile equally. For women with disabilities, mobile has the potential to provide life-changing benefits. Therefore, it is crucial to understand the extent to which people use services available on a mobile and to identify gaps in the use of different life-enhancing services.

To understand mobile use, mobile owners were asked to indicate the services they use from a list of 28 common use cases. These ranged from basic services, such as calling and SMS, to more advanced internet-based services. In analysing this data at the intersection of gender and disability, sample sizes in most countries were reduced beyond statistically sufficient levels (n>30). For this reason, this section of the report only presents the analysis of three countries: Brazil, India and Uganda.

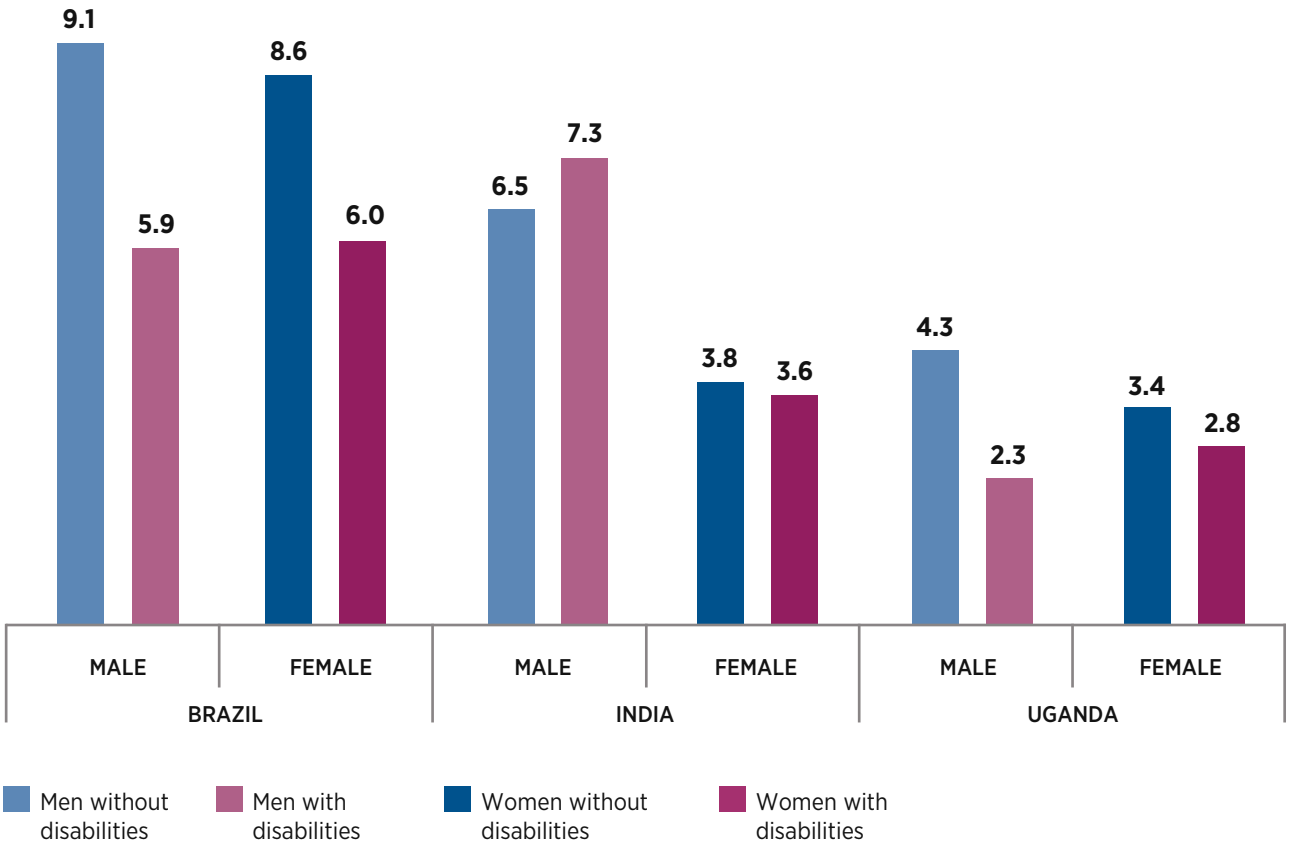
In Brazil and Uganda, persons with disabilities engage in fewer types of use cases on a mobile on a weekly basis than non-disabled persons (Figure 9). For instance, while women with disabilities in Brazil only engage in six different use cases per week on average, women without disabilities use 8.6 different types. A similar difference is seen between men with and without disabilities (5.9 and nine different weekly use cases, respectively).

Men and women also use mobile very differently, with men engaging in more diverse use cases.[29] In Brazil, India and Uganda, this is consistent even when accounting for disability.

In India, gender differences are greater than those due to disability. Notably, men with disabilities use the greatest variety of use cases on a mobile on a weekly basis and women with disabilities use almost as many as women without disabilities. Our analysis found a minimal disability gap in mobile internet awareness in India, and an inverse to flat disability gap in weekly mobile use.

Figure 9

Average number of use cases per week among mobile owners, by gender and disability prevalence



Source: GSMA Intelligence Consumer Survey, 2019. Based on survey results for adults 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.
Mobile internet use cases were asked of mobile owners who had used the internet before.
n = from 33 to 114 for women with disabilities, n = from 319 to 579 for women without disabilities, n = from 36 to 132 for men with disabilities, and n = from 361 to 874 for men without disabilities.

Further analysis of use cases yields deeper insights. These insights can be drawn by grouping the 28 use cases into four distinct categories: Communication, Entertainment, Financial and Information.

Across Brazil, India and Uganda, persons with disabilities are consistently the least likely to use mobile communication services on a weekly basis

Mobile was initially conceived to facilitate communication. Communication services are among some of the most basic use cases on a mobile. They provide value by connecting families, businesses and friends, facilitating the transfer of knowledge and helping people feel less isolated. In this report, communication services include the use of mobile to make calls, send or receive SMS, video calling and the use of social networks.

The highest proportion of mobile owners using communication services was reported in Brazil (Figure 10) where an average of 67 per cent of mobile owners overall engaged in at least one communication use case on a weekly basis. When broken down by demographic, a higher proportion of women use these services than men regardless of disability. However, there were differences between those of the same gender, both with and without disabilities. Only 46 per cent of men with disabilities and 52 per cent of women with disabilities engage in at least one communication use case a week compared to 68 per cent of non-disabled men and and 71 per cent of non-disabled women.

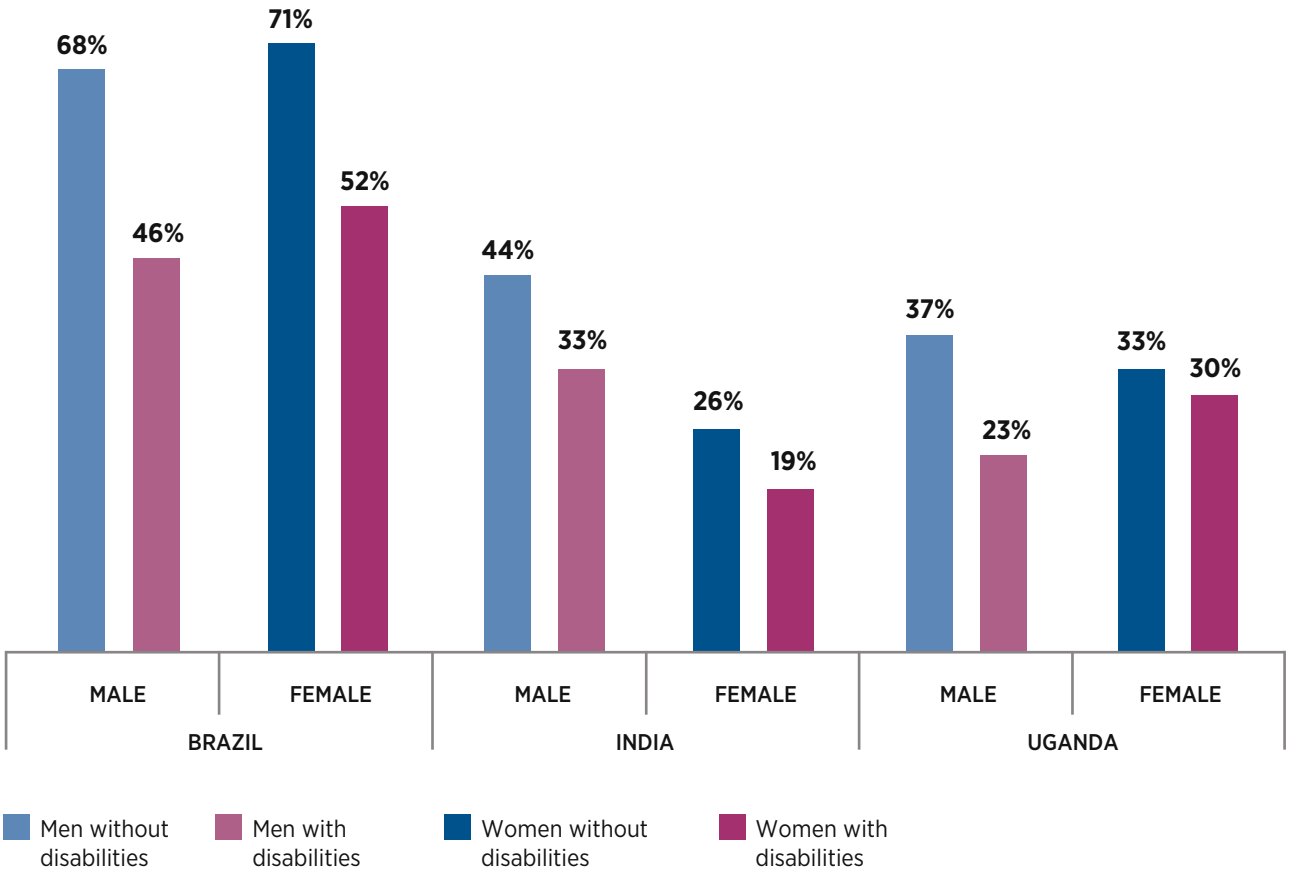
In India, the story is different as far fewer women than men, regardless of disability, engage in at least one communication use case a week.

In Uganda, differences in the proportion of men and women who engage in at least one communication use case a week are smaller than in other countries. In fact, for persons with disabilities, a larger proportion of women than men are making weekly use of communication services.

It is critical that these gaps are closed to ensure everyone is accessing the benefits of the most basic use cases on a mobile phone.

Figure 10

Average percentage of mobile owners engaging in at least one communication service use case a week, by gender and disability prevalence



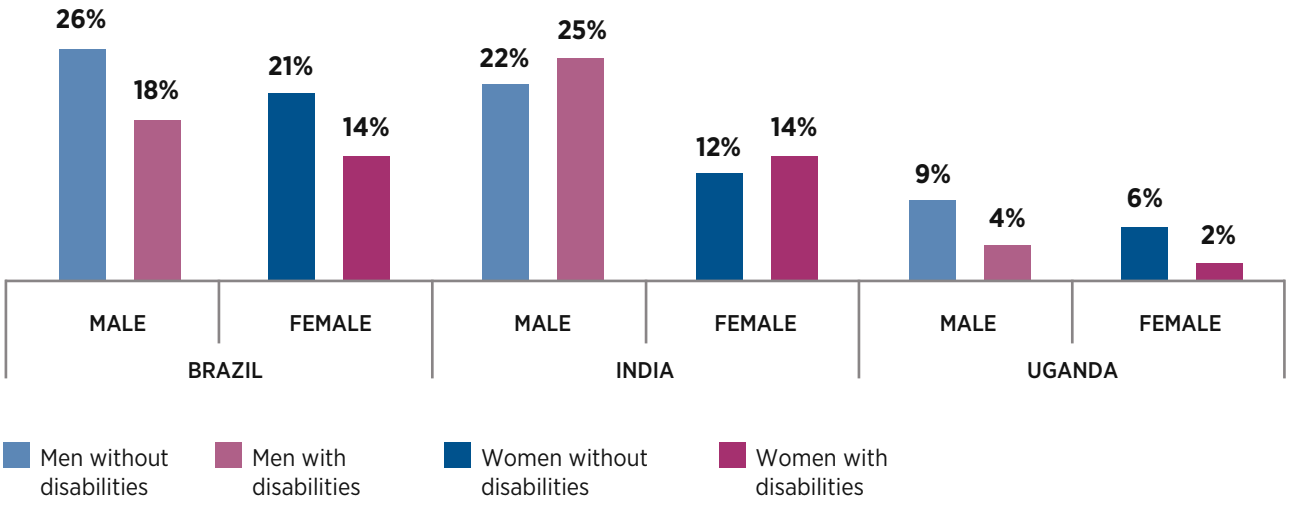
Source: GSMA Intelligence Consumer Survey, 2019. Based on survey results for adults aged 18+.
A mobile owner is defined as a person who has sole or main use of a SIM card (or a mobile phone that does not require a SIM), and uses it at least once a month. Respondents may have engaged in some use cases 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.
Mobile internet use cases were asked of mobile owners who had used the internet before.
n = from 33 to 114 for women with disabilities, n = from 319 to 579 for women without disabilities, n = from 36 to 132 for men with disabilities, and n = from 361 to 874 for men without disabilities.

Across the three countries, on a weekly basis, women use entertainment services on a mobile less than men

For many people, mobile is an outlet to access entertainment, but usage varies across demographics. In India, there is a substantial gender gap in the weekly use of entertainment services on a mobile: 46 per cent for both disabled and non-disabled groups. In contrast, persons with disabilities make greater use of entertainment services on a weekly basis than non-disabled persons (Figure 11). In Brazil and Uganda, there are greater differences between persons of the same gender with or without disability than between those of a different gender. In Uganda, the use of entertainment services on mobile is notably low for all groups analysed.

Figure 11

Average percentage of mobile owners engaging in at least one weekly entertainment service use case, by gender and disability prevalence



Source: GSMA Intelligence Consumer Survey, 2019. Based on survey results for adults 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.
Mobile internet use cases were asked of mobile owners who had used the internet before.
n = from 33 to 114 for women with disabilities, n = from 319 to 579 for women without disabilities, n = from 36 to 132 for men with disabilities, and n = from 361 to 874 for men without disabilities.



Access to financial services at the intersection of gender and disability is context-specific

Mobile has been an important enabler of financial inclusion for many who have not accessed traditional financial services before, such as banking. Persons with disabilities are a particularly underserved group. For instance, while 15 per cent of the global population lives with a disability, fewer than one percent of microfinance clients globally are persons with disabilities.[30] In this report, mobile financial services include mobile money, mobile banking, contactless payments, ordering online goods/services, getting information about goods and services and managing/paying bills.

Mobile money plays a particularly important role in enabling financial inclusion in LMICs and can enhance access to financial services for the unbanked. In 2019, we celebrated one billion registered mobile money accounts worldwide,[31] but mobile money and other financial service use cases are not being accessed and used equally by all. In the three countries analysed, weekly use of financial services through mobile was low for all groups.

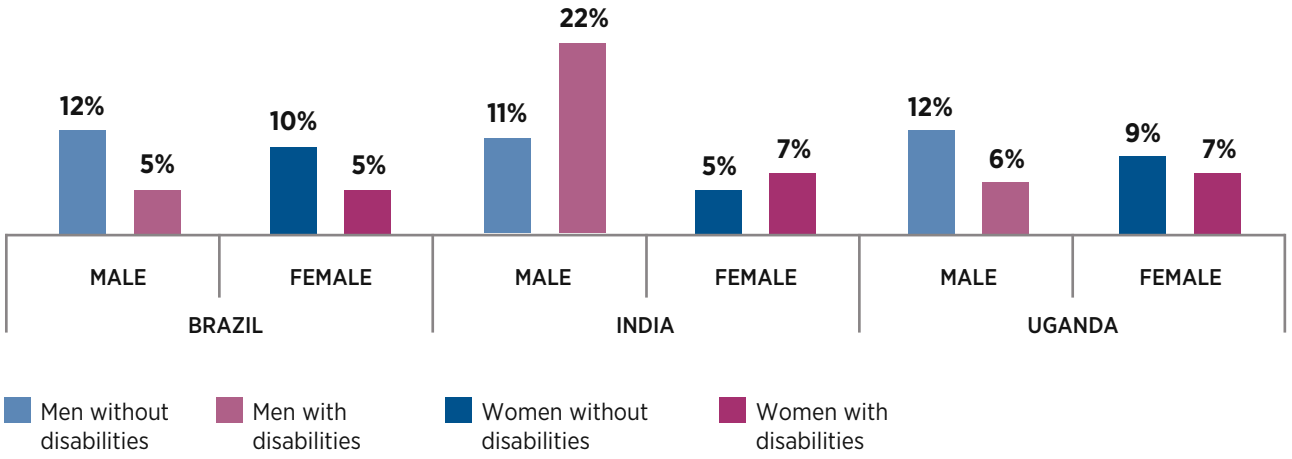
In Brazil, a similar proportion of men and women use at least one financial service weekly (Figure 12). Gaps exist between persons with and without disabilities. Only around half the proportion of men and women with disabilities use at least one financial service weekly compared to men and women without disabilities.

In India, men with disabilities make the most use of financial use cases on a weekly basis by a notable margin, indicating that mobile financial service offerings are serving an unmet need among this population. An average of 22 per cent of Indian men with disabilities are engaging in at least one financial use case on mobile on a weekly basis, compared to 11 per cent of men without disabilities, seven per cent of women with disabilities and five per cent of women without disabilities.

In Uganda, the disability gap in the use of financial services is more pronounced than the gender gap.

Figure 12

Average percentage of mobile owners engaging in at least one weekly mobile-based financial transaction use case, by gender and disability prevalence



Source: GSMA Intelligence Consumer Survey, 2019. Based on survey results for adults 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.
Mobile internet use cases were asked of mobile owners who had used the internet before.
n = from 33 to 114 for women with disabilities, n = from 319 to 579 for women without disabilities, n = from 36 to 132 for men with disabilities, and n = from 361 to 874 for men without disabilities.

Differences in the use of information services across demographics is country specific

Mobile also provides a platform to access a variety of information services, such as healthcare, government services, education and location services. For persons with disabilities, mobile offers enhanced access to these services compared to standard means of access. For example, government services may be inaccessible for people with mobility impairments, but through e-government services, healthcare and education can become more accessible and provide life-changing benefits.

The information accessed through these services is often only needed periodically, and therefore weekly usage rates are low. However, since they often deliver crucial benefits even when accessed only occasionally, we have analysed them on a monthly basis. In the three countries analysed, the role of gender and disability appears to be different in each context.

In Brazil, there is a minimal gender gap in the monthly use of information services, and this holds true both for those with a disability

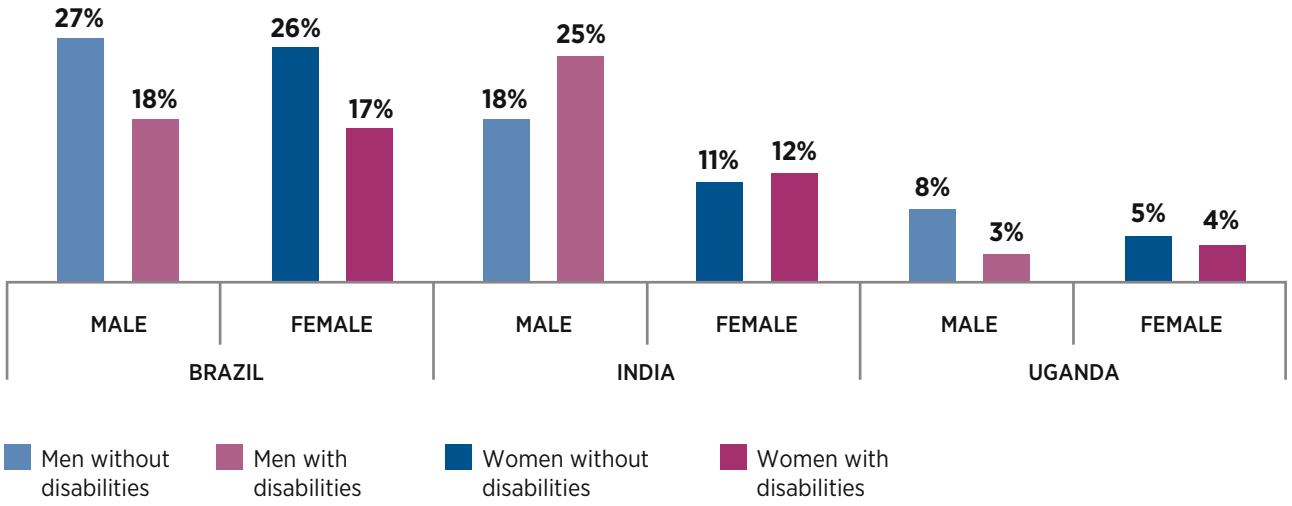
and without (Figure 13). However, there is a clear disability gap for men and women with disabilities. In Brazil, men with disabilities are 25 per cent less likely than men without disabilities to engage in at least one information use case a month, and women with disabilities are 27 per cent less likely to do so than women without disabilities.

In India, men with disabilities are the most likely group we analysed to use information services on a monthly basis. There is an inverse disability gap when comparing men with and without disabilities that appears to also hold true for women. However, the gender gap in India is more pronounced for persons with disabilities. Forty-two per cent of men with disabilities in India are engaging in at least one information use case on mobile a month compared with 25 per cent of women. This represents a gender gap of 40 per cent for persons with disabilities — the same as the gender gap for persons without disabilities.

In Uganda, there is very low monthly use of information services across all groups analysed. However, there appears to be both a gender gap and a disability gap. This could indicate an untapped commercial opportunity in the provision of information services on mobile in Uganda.

Figure 13

Average percentage of mobile owners engaging in at least one weekly information service use case, by gender and disability prevalence



Source: GSMA Intelligence Consumer Survey, 2019. Based on survey results for adults 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.
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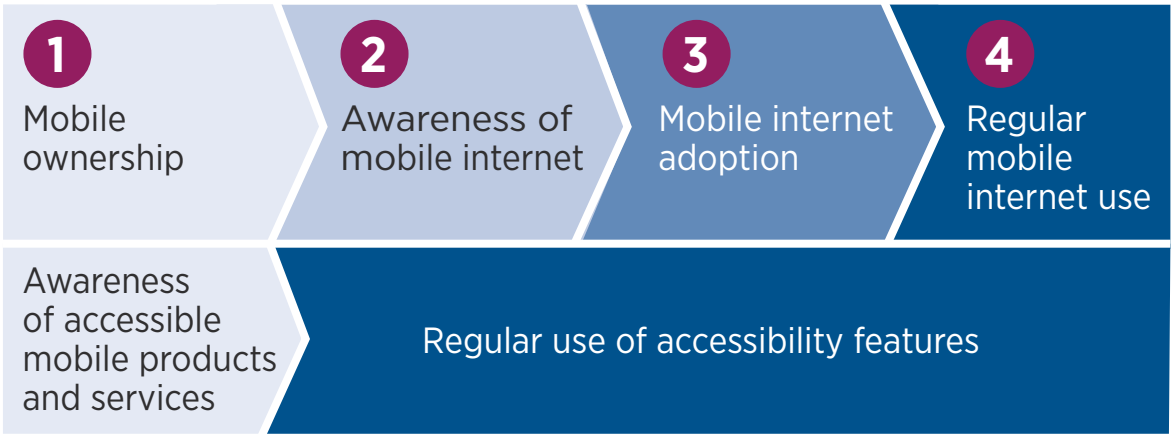
Mobile as an assistive technology

Mobile phones offer diverse and accessible ways to communicate. Operating systems that embed accessibility ease the use of mobile for many people, for example, screen adjustments (e.g. for colour, contrast, magnification), voice recognition, text-to-speech and audio adjustments (e.g. enhancement, connectivity to hearing aids).

Accessibility features are vital to the digital inclusion of women with disabilities. The GSMA report on the mobile disability gap in Kenya and Bangladesh highlighted the importance of accessibility features for increasing mobile access and use for persons with disabilities.[32] This suggests that the mobile internet user journey for women with disabilities needs to consider the digital skills required to use the accessibility features of mobile. A revised version of the mobile internet user journey has been created to reflect this (Figure 14).

Figure 14

The mobile internet user journey of women with disabilities





Driving digital inclusion for women with disabilities

Women with disabilities are doubly discriminated against. Although mobile has the potential to provide life-changing benefits to women with disabilities, the findings of this report suggest that women with disabilities are also being digitally excluded. Women with disabilities not only have the lowest rates of mobile ownership, but are also less likely to be aware of and use mobile internet. While gender and disability seem to correlate with mobile use to different degrees, in most cases, women with disabilities use mobile the least. Further research into mechanisms that can create an accessible and enabling environment is warranted. Addressing the barriers preventing women with disabilities from accessing and using mobile — access, affordability, literacy and skills, relevance and safety and security — requires action from multiple stakeholders. This includes:

- **Developing and raising awareness of relevant products and services to address the needs of women with disabilities.** Many women with disabilities who do not own a phone do not see mobile as relevant, and few who own a mobile see it as beneficial. Designing for relevance requires including persons with disabilities and disabilities organisations in the process and aligning with the disability inclusion philosophy of doing "nothing about us without us".[33]

- **Addressing safety and security concerns.** Concerns about the safe and secure use of mobile are barriers preventing mobile ownership and use. Mobile needs to be sensitive to the intersectionality of gender and disability and address the often complex life experiences of women with disabilities. Safe and secure use will build trust in mobile.

- **Supporting women with disabilities to develop their digital skills.** Raising awareness of accessibility features and the skills required to use them is vital for users with disabilities to perceive mobile as an assistive technology. Women with disabilities need to be supported to acquire these skills and become aware of the opportunities and benefits that mobile can provide.

- **Improving the availability of disability and gender-disaggregated data on mobile access and use.** Although this data is currently lacking, it is crucial for understanding the digital gender and disability gap, informing policy and business decisions to address this gap, setting targets and tracking progress. Policymakers and the private sector should review the gender and disability data they already have and invest in improving the availability and accuracy of this data.

Initiatives should address these barriers and the aspirations of women with disabilities holistically and in their local context. Failing to tackle the digital exclusion of women with disabilities risks leaving many people in our ever-more digital societies behind. Mobile supports many of the SDGs and concerted action is needed to address the needs of those who are digitally excluded, such as women with disabilities, and ensure that mobile provides equal opportunities to all. Reaching those who are underserved also offers a vast, untapped commercial opportunity for the mobile industry.



Appendix 1: Detailed methodology

Quantitative research

For the general methodological approach to different sections of the report, consult the GSMA's *Mobile Gender Gap Report: Methodology*.[34] The analysis undertaken for this report largely follows the same approach. Where applicable, nuances between the two analyses are outlined in this appendix.

This annex provides methodological details for this report. The research leverages the *GSMA Intelligence Consumer Survey 2019* to gain a more accurate picture of the use of mobile devices and services by men and women, both with or without disabilities. The analysis in this report is based on a nationally representative survey (face-to-face surveys) in the following low- and middle-income countries:

- Bangladesh
- Brazil
- India
- Kenya
- Mexico
- Pakistan
- Uganda

In all countries, a nationally representative sample of the adult population aged 18 and over was selected. At least 1,000 interviews were conducted in each country surveyed, with 2,000 conducted in India.

Sampling and fieldwork

This study follows the same survey methodology, sampling and weighting approaches as the GSMA *Mobile Gender Gap Report 2020*.[35] To achieve a nationally representative sample, quotas were applied in line with census data on the following metrics: age category by gender; urban and rural distribution by gender; and region/state. Quotas were applied for socio-economic class (SEC) to ensure a representative portion of lower income respondents were included, except in Uganda where SEC weighting was not applied.

Defining disability: The Washington Group Short Set of Questions

To understand the prevalence of disability in the population of the seven LMICs included in the analysis, the Washington Group Short Set of Questions were added to the survey in these markets. This included questions on six core functional domains: seeing, hearing, walking, cognition, self-care and communication.[36] To be considered a person with a disability for the purposes of our analysis, a respondent had to indicate that they have "a lot of difficulty" or "cannot do at all" in at least one of the above core domains. Table 1 summarises the number of respondents that reported to have at least one disability. The sample sizes in Nigeria were not sufficient for inclusion in the analysis.

	Total respondents in country (unweighted)	At least one disability (Number of respondents)		
		Total	Male	Female
BANGLADESH	1,060	**89**	37	52
BRAZIL	1,000	**134**	51	83
INDIA	2,378	**436**	210	226
KENYA	1,019	**63**	*20**	43
MEXICO	1,012	**64**	*25**	39
NIGERIA	1,117	**35**	15	20
PAKISTAN	1,072	**70**	*24**	46
UGANDA	1,018	**126**	55	71

* Due to a lack of data on the subject, the analysis considers some cases where sample sizes fell marginally below the limit of 30.

Measuring disability and gender gaps

A primary objective of the study was to understand the characteristics of mobile ownership and use by women with disabilities, using the following key metrics in each country:

- Mobile phone ownership;
- Smartphone ownership;
- Mobile internet awareness; and
- Mobile internet use.

The analysis highlights differences in the above metrics between different groups as follows:

- Disability gap: A calculation of the size of the gap between non-disabled persons (Group 1) and persons with disabilities (Group 2).
- Gender gap: A calculation of the size of the gap between men (Group 1) and women (Group 2).
- Gender and disability gap: A calculation of the size of the gap between men without disabilities (Group 1) and women with disabilities (Group 2).

These gaps are calculated using the following formula:

$$\frac{\text{\% Group 1 mobile ownership/use} - \text{\% Group 2 mobile ownership/use}}{\text{\% Group 1 mobile owners/users}}$$

The calculation shows the gap in mobile ownership or use by Group 2 relative to mobile ownership or use in the broader population for Group 1. For some portions of the analysis, the figures were drawn from the Mobile Gender Gap Report 2020. For more details on the calculations of the gender gap in the countries surveyed, please see the Methodology section of the report.[37]

Measuring mobile use

Analysis of mobile use differed from the Mobile Gender Gap Report 2020. For this report, in-depth analysis was conducted on different types of use cases. The 28 use cases were grouped into four distinct categories: Communication, Entertainment, Financial and Information. For each category, the number of men and women with and without disabilities engaging in each use case at least once a week was calculated. These numbers were calculated as a percentage of the mobile-owning population and then an average was taken across all use cases in that category. Therefore, the percentages expressed in the mobile use section of this report are indicative of the average percentage of each group analysed engaging in at least one of the use cases in that category at least once a week. The Information category was an exception whereby monthly use was incorporated in the analysis to reflect the less frequent use of these important services.

A note on the results from Kenya and Bangladesh

This report includes data and insights on mobile ownership and use by men and women with or without disabilities in Kenya and Bangladesh, and differences emerged between those reported in the GSMA's 2019 *Understanding the Mobile Disability Gap* report. These differences are due to a different sampling methodology and differences in some of the definitions used. To ensure consistency and comparability between the gaps, this report followed the definitions and methodology used in the Mobile Gender Gap Report 2020. However, since persons with disabilities are a small proportion of the population and difficult to identify through random sampling, the methodology employed in the *Understanding the Mobile Disability Gap* report uses purposive sampling to understand the specific characteristics of mobile ownership and use by persons with disabilities, including segmentation by type of disability.

Endnotes

1. World Health Organization (2011). *World Report on Disability*.
2. 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."
3. The Washington Group is a United Nations Statistics Commission City Group that aims to develop methods to improve statistics on persons with disabilities globally. It is formed by representatives of national statistical offices with input from other UN agencies, International Agencies, Disabled Persons' Organisations, and researchers. The Short Set of Questions can be accessed at: http://www.washingtongroup-disability.com/washington-group-question-sets/short-set-of-disability-questions/.
4. GSMA (2019). *The Mobile Economy 2020*.
5. *Ibid.*
6. UN Department of Economic and Social Affairs (2018). *Disability and Development Report*.
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14. GSMA (2019). *The Impact of Mobile and Internet Technology on Women's Wellbeing Around the World*.
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23. *Ibid*.
24. GSMA (2020). *The Mobile Gender Gap Report 2020*.
25. *Ibid.*
26. GSMA (2019). *Understanding the Mobile Disability Gap*.
27. GSMA (2020). *The Mobile Gender Gap Report 2020*.
28. Defined as those who have either used the internet on a mobile phone before or are aware of the internet and that it can be used on a mobile phone.
29. GSMA (2020). *The Mobile Gender Gap Report 2020*.
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34. GSMA (2020). *The Mobile Gender Gap Report 2020: Methodology*.
35. *Ibid*.
36. The Washington Group is a United Nations Statistics Commission City Group that aims to develop methods to improve statistics on persons with disabilities globally. It is formed by representatives of national statistical offices with input from other UN agencies, international agencies, disabled persons organisations and researchers. The Short Set of Questions can be accessed at: http://www.washingtongroup-disability.com/washington-group-question-sets/short-set-of-disability-questions/.
37. GSMA (2020). *The Mobile Gender Report 2020: Methodology*.

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