



The Mobile Disability Gap Report 2020

December 2020



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Definitions

Accessibility Design of products, devices, services or environments for persons with disabilities.

Mobile gender/disability gap (ownership/usage) Percentage by which persons with disabilities are less likely to own a mobile phone, use mobile internet and/or make a use case on mobile than non-disabled persons. It is calculated by:

$$\frac{\begin{array}{c} \text{Icon of a person} \\ \% \text{ Non-disabled} \\ \text{mobile owner/users} \end{array} - \begin{array}{c} \text{Icon of a person with a wheelchair} \\ \% \text{ Mobile owners/users} \\ \text{with disabilities} \end{array}}{\begin{array}{c} \text{Icon of a person} \\ \% \text{ Non-disabled mobile owners/users} \end{array}}$$

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

Mobile owner "Mobile phone owner" and "mobile owner" are used interchangeably in this report to refer to 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.

Non-disabled person A person who does not report any acute difficulty ("a lot of difficulty") or complete inability ("cannot do at all") to perform the functional domains of the Washington Group Short Set of Questions.

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 Questions A set of questions designed to identify persons with disabilities in a survey or census. Respondents answer questions and report difficulties experienced in six core functional domains: seeing, hearing, walking, cognition, self-care, and communication.



Introduction

Digital technologies and internet access have accelerated economic development, and even changed how basic human rights are realised.¹ However, many people remain digitally excluded. For instance, in low- and middle-income countries (LMICs), only 40 per cent of the

population are connected to mobile broadband and more than half of the world's population are unable to access the benefits of mobile internet.² Many of those unconnected are populations that are often discriminated against or marginalised, such as women and persons with disabilities.

Closing the mobile disability gap is more important than ever

More than five billion people globally are mobile subscribers.³ As we move towards a more digital society, it is critical that digital technologies are inclusive of everyone, including persons with disabilities. Information and communication technologies (ICTs), such as mobile phones, can act as enablers of participation and create opportunities for persons with disabilities.⁴ Available and accessible mobile offers a gateway to information, knowledge, and tools for independent living. Indeed, the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) states in Article 9.2 that:

“States Parties shall also take appropriate measures [...] to promote access for persons

with disabilities to new information and communications technologies and systems, including the Internet; [and]) to promote the design, development, production and distribution of accessible information and communications technologies and systems at an early stage, so that these technologies and systems become accessible at minimum cost [...]”⁵

In recent years, ICTs have increasingly been designed to incorporate accessibility and functions for the vast majority of users, while also allowing customised functions for individual specific needs.⁶ However, research conducted by the GSMA suggests that a disability gap exists in mobile access and use.

An understanding of the mobile disability gap is required to realise this opportunity

Driving the greater inclusion of persons with disabilities requires data and evidence to inform actions from multiple stakeholders. In 2019, the GSMA Assistive Tech programme conducted a study in Kenya and Bangladesh to quantify—for the first time—the level of mobile ownership

and usage by persons with disabilities in these countries.⁷ The study highlighted the need to generate evidence to understand the digital divide experienced by persons with disabilities, identify existing barriers to digital inclusion, and define strategies and actions to close the gap.

Box 1. A note on the results from Kenya and Bangladesh

This report includes data and insights into mobile ownership and usage by persons with disabilities and non-disabled persons in Kenya and Bangladesh. This report is based on a nationally representative survey whereas the 2019 [Understanding the Mobile Disability Gap](#) report used purposive sampling method as persons with disabilities are a relatively small

proportion of the population and difficult to identify through random sampling. To ensure consistency and comparability between the gaps, this report followed the definitions and methodology used in [The Mobile Gender Gap Report 2020](#) which is also based on the same survey.

More recently, the GSMA Assistive Tech and the GSMA Connected Women teams jointly published analysis of data from the GSMA Intelligence Consumer Survey 2019 to measure the digital inclusion of women with disabilities for the first time.⁸ The study found that in most markets, women with disabilities have the lowest levels of mobile ownership and mobile internet awareness and usage across the seven markets studied. The report highlighted the need to continue generating data and insights in this area to inform actions for their digital inclusion.

This report also uses data from the GSMA Intelligence Consumer Survey 2019 to explore the digital inclusion of persons with disabilities in eight LMICs: Bangladesh, Brazil, India,

Kenya, Mexico, Nigeria, Pakistan and Uganda. To identify persons with disabilities, the Washington Group Short Set of Questions⁹ were used and respondents reporting to have “a lot of difficulty” or who “cannot do at all” at least one of the functional domains were considered to be a person with a disability (see [Appendix 1: Detailed methodology](#)).

This report looks at key stages and milestones in the journey to mobile internet use 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.

Figure 1

The mobile internet user journey



This report uses the term **“accessibility”** to refer to the design elements of a product or service that ensures they can be used by all. The term

“assistive technologies” reflects the World Health Organization’s (WHO) definition but also includes mobile phones.

Limitations

As described in the detailed methodology in [Appendix 1](#), the GSMA Intelligence Consumer Survey 2019 employs a national representative survey methodology. The approach has not been designed as a disability-focused study; therefore an important limitation of the sampling frame is that no quotas were allocated for the different types of activity limitations reported by people and, during fieldwork, interviewers may not necessarily have been trained to interview persons with disabilities. It is likely that the current approach omits the views of some people, particularly those who may face communication barriers such as Deaf people, people with learning disabilities and those with severe speech impairments.

Box 2. A note on sample sizes

Our analysis adheres to the industry norm that subgroups should have a minimum sample of $n=30$. All efforts have been made to ensure that the analysis in this report focuses on subgroups where $n>30$.

However, in the analysis of barriers to mobile ownership and use, some sample sizes were too small and use cases have been removed. As the report progresses into more in-depth analysis of the questions in the survey, the countries included decreases as the small sample sizes did not allow for analysis of the data.

Key Findings



1. In all markets surveyed, persons with disabilities had significantly **lower levels of mobile ownership** compared to non-disabled persons. The largest gap was identified in Bangladesh, where persons with disabilities are 47 per cent less likely to own a mobile phone than non-disabled persons, compared to Kenya where it was seven per cent.¹⁰
2. The **disability gaps in smartphone ownership** are large in every country surveyed. The largest gaps are found in Nigeria (where persons with disabilities are 80 per cent less likely to own a smartphone) and Bangladesh (where it is 73 per cent). Even Kenya, the country in this study with the smallest disability gap in ownership, has a disability gap in smartphone ownership of 63 per cent.
3. On average, across all markets, **fewer persons with disabilities perceive mobile as beneficial** than non-disabled persons when asked if it helps with feel safer, provides access to important information and assists them in their daily lives. This is consistent with the finding that in most countries surveyed, fewer persons with disabilities use mobile to access information.
4. Persons with disabilities are also **less aware of mobile internet** than non-disabled persons. Awareness levels between persons with disabilities and non-disabled persons vary significantly depending on the country. In India, for instance, persons with persons with disabilities are 4 per cent less likely to be aware of mobile internet than non-disabled persons compared to 51 per cent in Uganda.
5. Fewer persons with disabilities access the internet on a mobile than non-disabled persons. There are large **disability gaps in mobile internet use** in most markets surveyed, with the smallest gap in India (17 per cent) and the largest gap in Bangladesh (87 per cent).
6. **Literacy and digital skills** are the primary barriers to ownership of mobile reported by persons with disabilities. **Affordability** and the perceived **relevance** of mobile were also important barriers to ownership that need addressing. These are also barriers to mobile internet use reported by persons with disabilities in India.
7. Among mobile owners, **persons with disabilities can have similar usage of mobile internet as non-disabled persons** and in some cases use it more. Addressing the disability gap in mobile ownership represents an important commercial opportunity for the mobile industry to drive ARPU growth and extend more of the benefits of mobile ownership to persons with disabilities.



How big is the disability gap in mobile ownership?

Mobile access and use have considerably increased in recent years and will continue to grow. However, the unconnected are often disproportionately poorer, less educated, rural, or are female or persons with disabilities. According to the GSMA Mobile Gender Gap Report 2020, for instance, women are eight per

cent less likely than men to own a phone. This gap varies by region, with women being 13 per cent less likely than men to own a phone in Sub-Saharan Africa and 23 per cent in South Asia.¹¹ Gaps in ownership for persons with disabilities are large and also vary by country.

Fewer persons with disabilities own a mobile than non-disabled persons

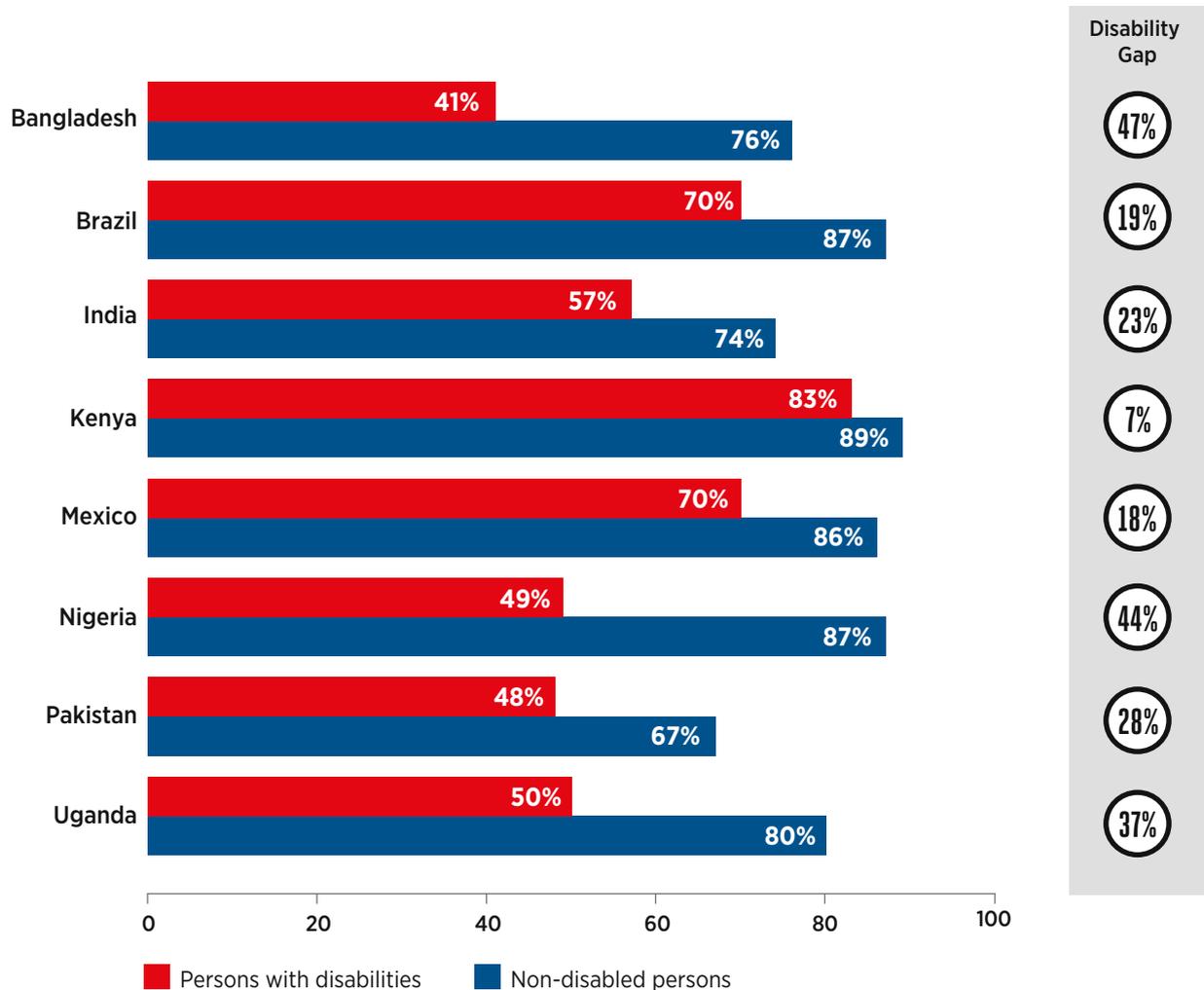
Analysis of the GSMA Intelligence Consumer Survey 2019 indicates that a mobile disability gap in ownership exists in the eight markets surveyed (see Figure 2). While mobile penetration is generally higher in some regions than others, the mobile disability gap in ownership varies by country. For instance, in Africa, Nigeria has the second largest disability gap in ownership of all countries surveyed where

persons with disabilities were 44 per cent less likely to own a mobile phone, yet Kenya has the smallest gap (seven per cent). Latin American countries have the smallest gaps of all countries, as the disability gaps in ownership are 18 per cent for Mexico and 19 per cent for Brazil. To close these gaps, it is critical to understand the barriers to ownership experienced by people with disabilities.

Figure 2

Mobile ownership by persons with disabilities and non-disabled persons

Percentage of the total population



Source: GSMA Intelligence, 2019. 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 for adults aged 18 and over. n=35 to 436 for persons with disabilities and n=866 to 1942 for non-disabled persons.

Persons with disabilities are significantly less likely to own a smartphone despite the benefits they can bring

Smartphones are the main gateway to access the digital economy and life-changing opportunities and services, particularly in LMICs.¹² The rates of adoption of smartphones differ by region. In Europe and North America, over 80 per cent of the population now own a smartphone, while only 60 per cent of people in Asia Pacific and 45 per cent in Sub Saharan Africa own a smartphone.¹³

It is therefore important to understand the levels of mobile ownership by type of phone.

Across all eight countries, persons with disabilities have significantly lower levels of smartphone ownership than non-disabled persons (see Figure 3). The largest gaps are found in Nigeria (where persons with disabilities were 80 per cent

less likely to own a smartphone) and Bangladesh (where this gap is 73 per cent). Even Kenya, the country with the smallest disability gap in mobile phone ownership, has a large disability gap in smartphone ownership (63 per cent).

Notably, countries with relatively high smartphone ownership also see disability gaps. In Brazil, around 70 per cent of the non-disabled population own a smartphone but less than 40 per cent of persons with disabilities own one (meaning that persons with disabilities were 46 per cent less likely to own a smartphone). Similarly, in Mexico, more than 60 per cent of non-

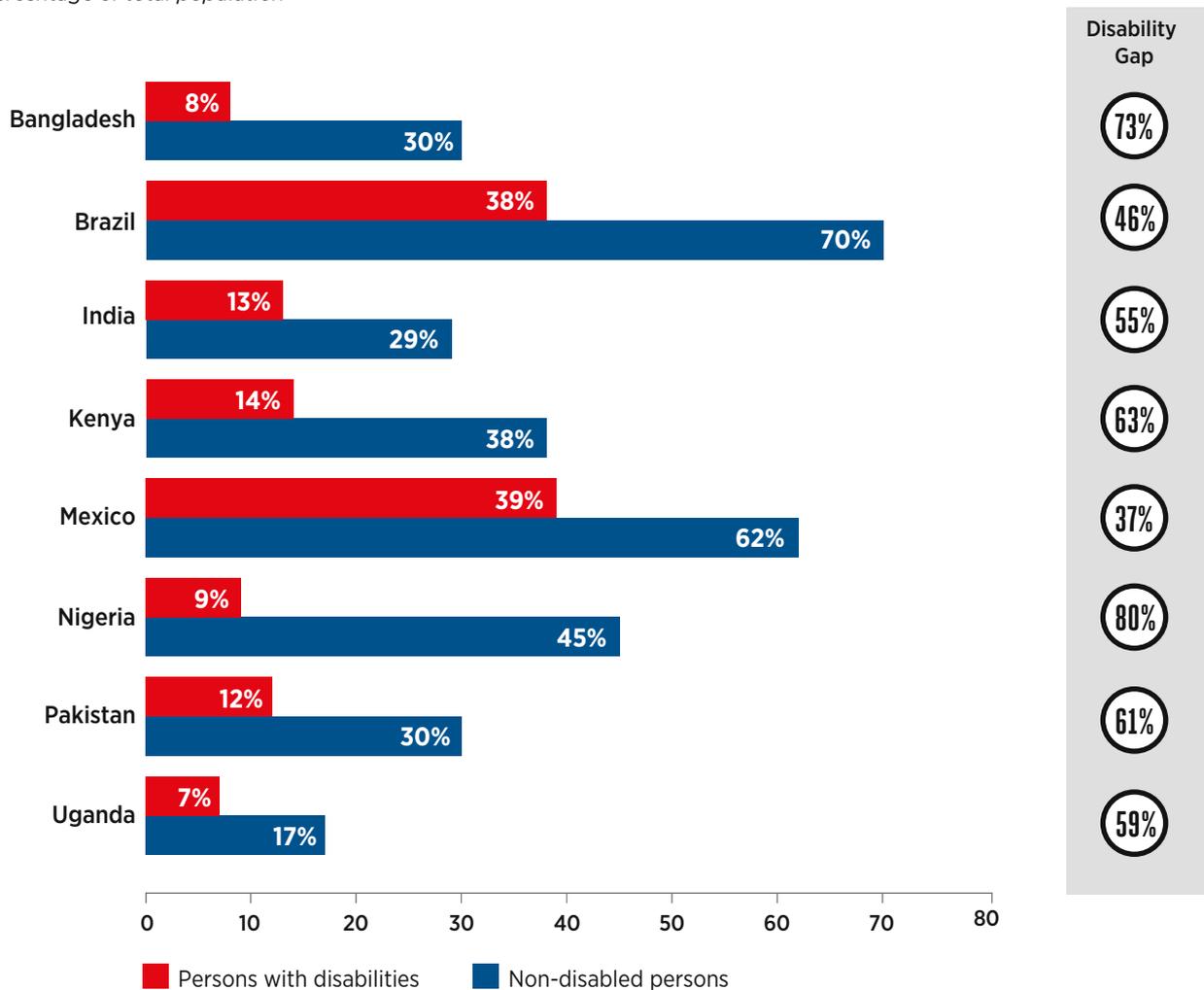
disabled persons own a smartphone compared to 40 per cent of persons with disabilities (with persons with disabilities 37 per cent less likely to own a smartphone).

It is clear from this research that large gaps exist and actions are needed to address these gaps in smartphone ownership, as persons with disabilities can benefit from the assistive technologies embedded in them.¹⁴ Smartphones offer opportunities to access information and content in alternative modes that are suitable for different types of impairments, such as screen readers, magnification, and video captioning.

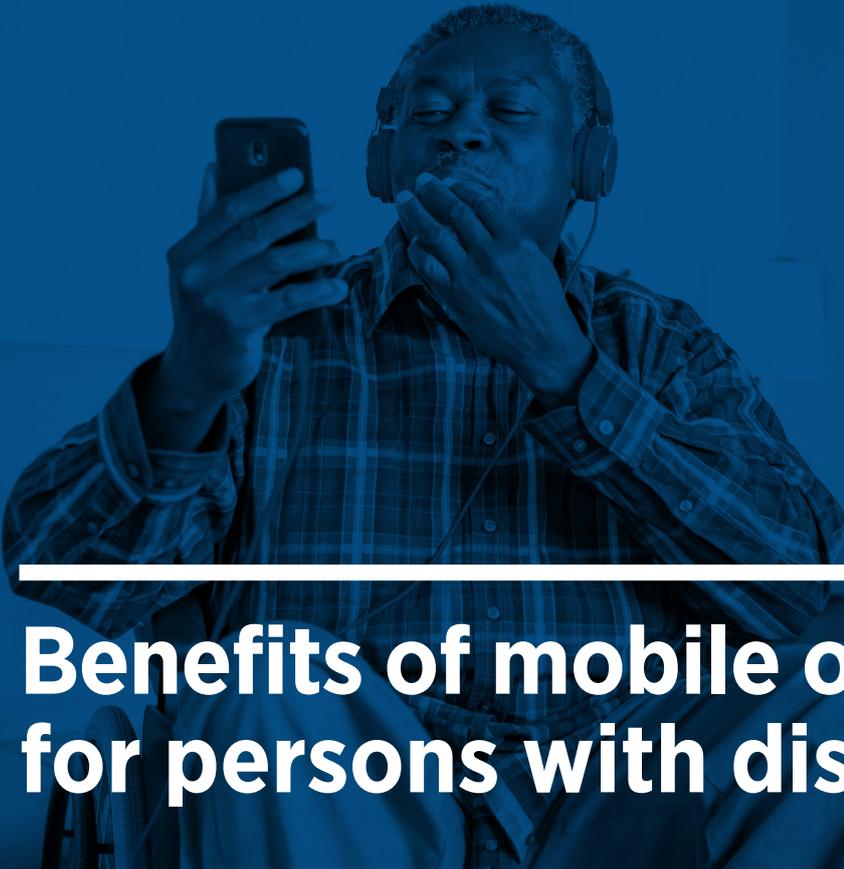
Figure 3

Smartphone ownership by persons with disabilities and non-disabled persons

Percentage of total population



Source: GSMA Intelligence, 2019. 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. Based on survey results for adults aged 18 and over. n=35 to 436 for persons with disabilities and n=866 to 1942 for non-disabled persons.



Benefits of mobile ownership for persons with disabilities

Evidence from previous research conducted by the GSMA Assistive Tech programme indicates that mobile can offer life-changing opportunities for persons with disabilities. A study conducted in Kenya and Bangladesh showed that mobile is perceived by many persons with disabilities as an enabler of access to basic services.¹⁵ For instance, more than 30 per cent of persons with

disabilities in Kenya said mobile helped them access healthcare services, as well as education and employment. However, there are still many barriers to digital inclusion experienced by persons with disabilities; e.g. less than one per cent of website homepages are currently accessible.¹⁶

Overall, persons with disabilities perceive mobile as less beneficial than non-disabled persons

For many persons with disabilities, mobile offers numerous benefits. However, analysis of the GSMA Intelligence Consumer Survey 2019 shows that, in general, persons with disabilities perceive mobile as less beneficial than non-disabled persons. This is the case in all markets surveyed, even in those where large numbers of persons with disabilities and non-disabled persons reported benefits.

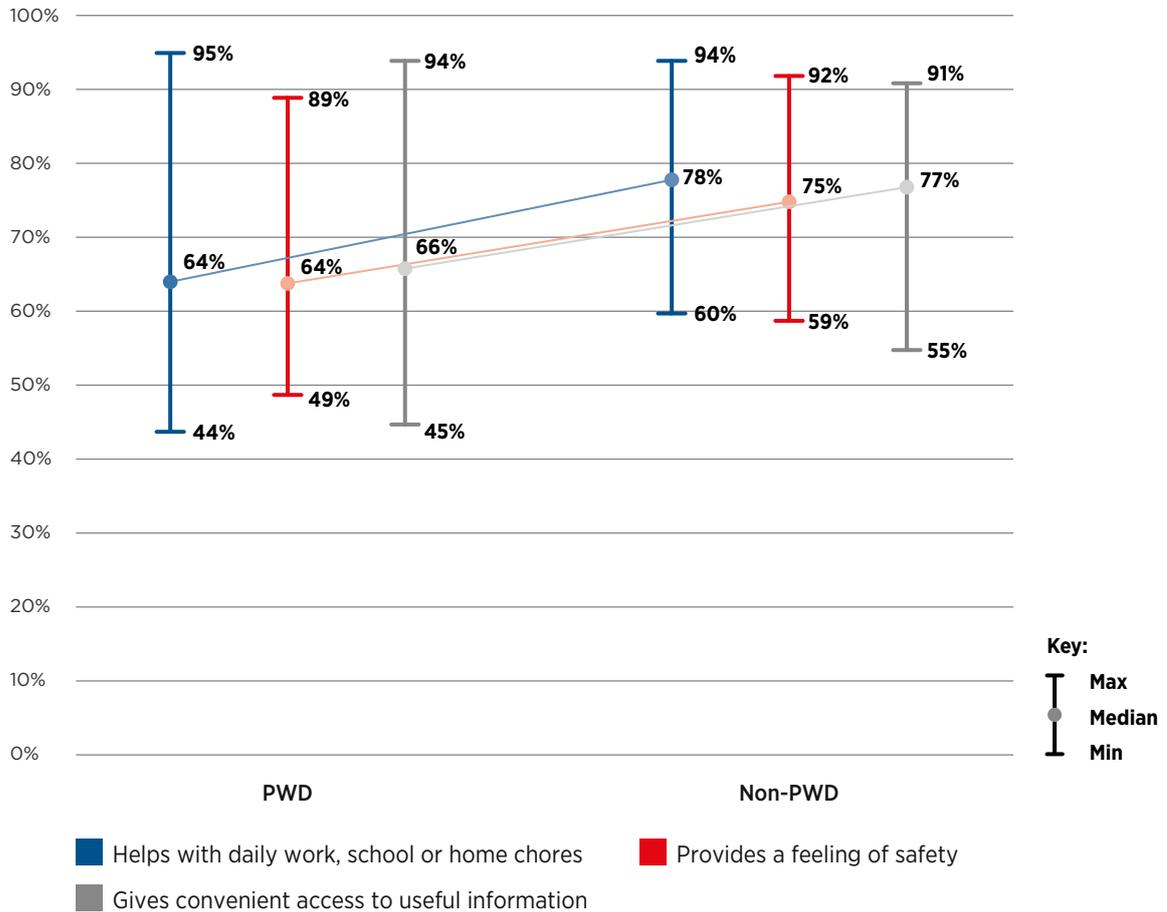
On average, across the seven countries surveyed,¹⁷ 64 per cent of persons with

disabilities reported that mobile helped them perform their daily activities at home, at work or in school (Figure 4). In contrast, almost 80 per cent of non-disabled persons reported this to be the case. Around 65 per cent of persons with disabilities reported that mobile provides a convenient way to access useful information and 67 per cent said that mobile provided them with a sense of safety. In comparison, almost 80 per cent of non-disabled persons perceived these benefits.

Figure 4

The benefits of mobile ownership reported by persons with disabilities and non-disabled persons in seven surveyed countries

Percentage of mobile owners across the seven surveyed countries who agree mobile ownership helps them with the following:



Source: GSMA Intelligence, 2019. Based on survey results for adults aged 18 and over. Respondents have sole or main use of a mobile phone. n = 34 to 246 for persons with disabilities and n = 682 to 1453 for non-disabled persons. Nigeria was excluded due to having a small sample size for persons with disabilities.

The difference between the perceived benefits of mobile among persons with disabilities and non-disabled persons is greatest in India, with a more than 30 percentage points gap across the three surveyed benefits (see Figure 5). Kenya and Uganda have the smallest differences. In Kenya, more persons with disabilities reported that mobile helped them with daily chores (four percentage points higher than non-disabled persons) and provided them with convenient access to information (three percentage points higher). In Uganda, the same proportion of persons with disabilities and non-disabled

persons considered mobile as a way to access useful information.

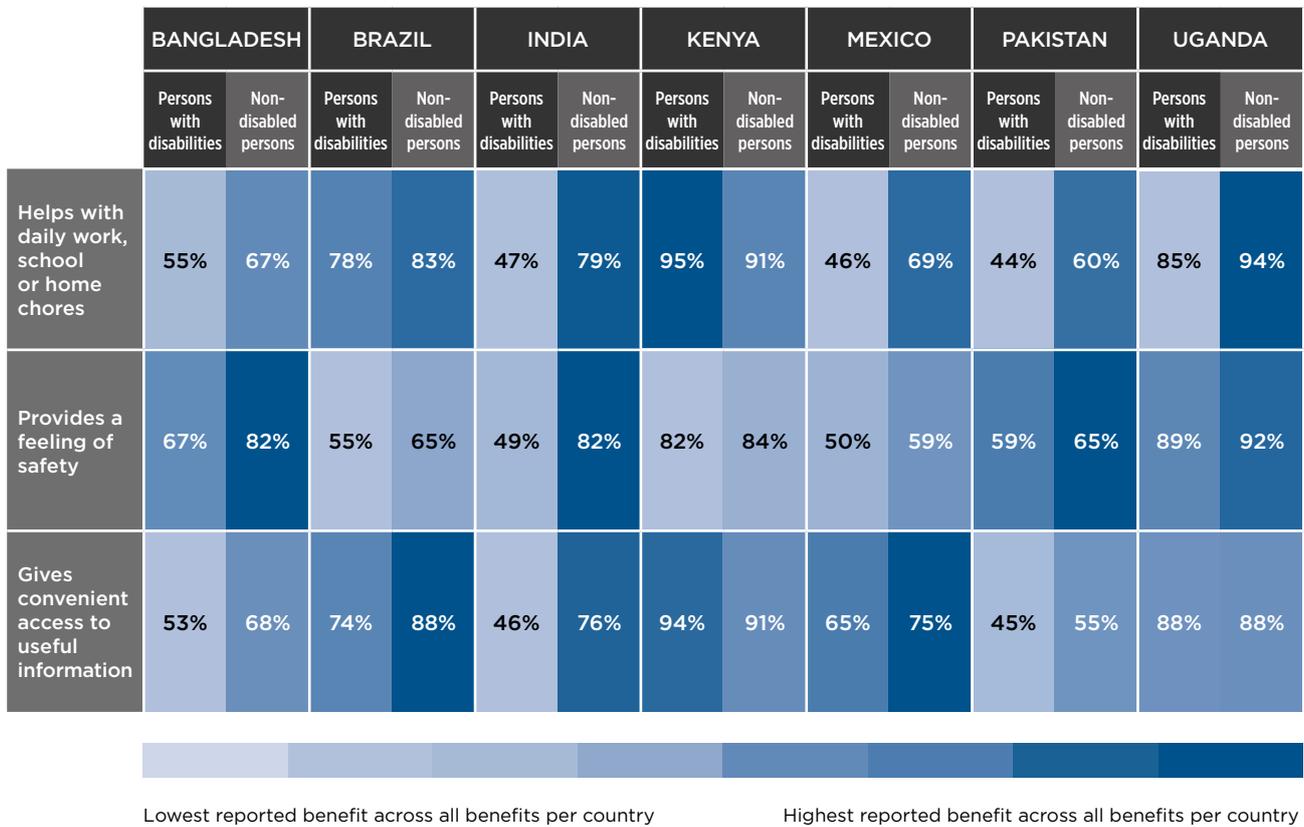
Understanding the perceived benefits of mobile is important for understanding how mobile products and services address the needs of different market segments. To increase the benefits of mobile for persons with disabilities, inclusive products and services should be made available in the market. Customer strategies that address the needs of persons with disabilities can offer commercial opportunities that mobile operators and digital ecosystem are yet to tap.



Figure 5

Comparison of the reported benefits of mobile by persons with disabilities and non-disabled persons

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



Source: GSMA Intelligence, 2019. Based on survey results for adults aged 18 and over. Respondents have sole or main use of a mobile phone. n=34 to 246 for persons with disabilities and n=682 to 1453 for non-disabled persons. Nigeria was excluded due to having a small sample size for persons with disabilities.

The disability gap in mobile internet awareness and use

The widespread increase of availability and access to mobile has been an important driver towards digital inclusion globally. More than five billion people worldwide are mobile subscribers and almost half of the population use mobile internet.¹⁸ By 2025, the number of mobile internet subscribers is expected to rise to 60 per cent of the population, in part because affordable internet-enabled handsets, such as feature phones and smartphones, are

becoming more available and their adoption has increased. Yet, 3.4 billion people live within the footprint of mobile broadband but do not use mobile internet, and seven per cent of the global population are still uncovered by mobile broadband networks and unable to access the opportunities and benefits offered by mobile.¹⁹ Many of those unconnected live in LMICs and are often women, persons with disabilities and those living in extreme poverty or rural areas.

Fewer persons with disabilities are aware of mobile internet than non-disabled persons

Lack of awareness of mobile internet is an important contributor to lower levels of mobile internet use. While awareness of mobile internet has increased substantially, many people remain unaware and this seems to be more common for persons with disabilities. In the markets analysed, the levels of internet awareness are lower among persons with disabilities than non-disabled persons.

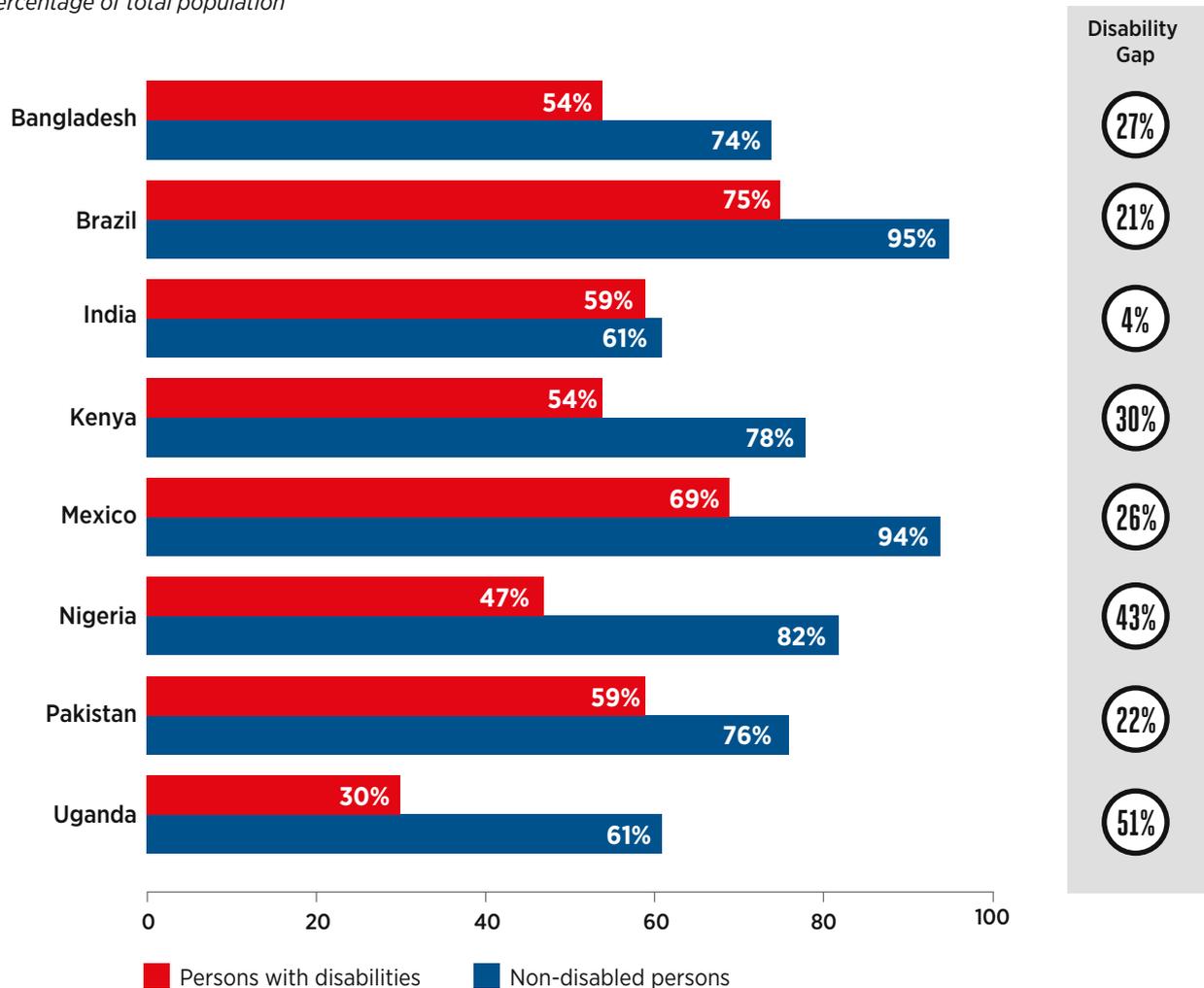
The gaps of awareness between persons with disabilities and non-disabled persons vary by country (Figure 6). In India, the gap in mobile internet awareness is remarkably the smallest of all surveyed countries (persons with disabilities are four per cent less likely to be aware of mobile internet than non-disabled persons). The largest disability gaps in awareness are found in Kenya (30 per cent), Nigeria (43 per cent) and Uganda (51 per cent). Uganda has the largest gap from all surveyed countries.



Figure 6

Awareness of mobile internet by persons with disabilities and non-disabled persons

Percentage of total population



Source: GSMA Intelligence, 2019. 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. Based on survey results for adults aged 18 and over. n=35 to 436 for persons with disabilities and n=866 to 1942 for non-disabled persons.

Fewer persons with disabilities are using the internet than non-disabled persons

It is perhaps not surprising that low levels of internet awareness among persons with disabilities result in low levels of mobile internet use. A significantly smaller number of persons with disabilities across all markets use mobile internet compared to non-disabled persons. This indicates that many persons with disabilities remain unconnected.

Notably, while Uganda has the largest disability gap in awareness, the country does not have a large mobile internet usage gap (Figure 7). Bangladesh has the largest gap in usage, as persons with disabilities are almost 90 per cent less likely than non-disabled persons to be mobile internet users. Nigeria and Pakistan follow as second and third largest, with 75 and

71 per cent gaps respectively. India, on the other hand, has the smallest disability gap in mobile internet usage.

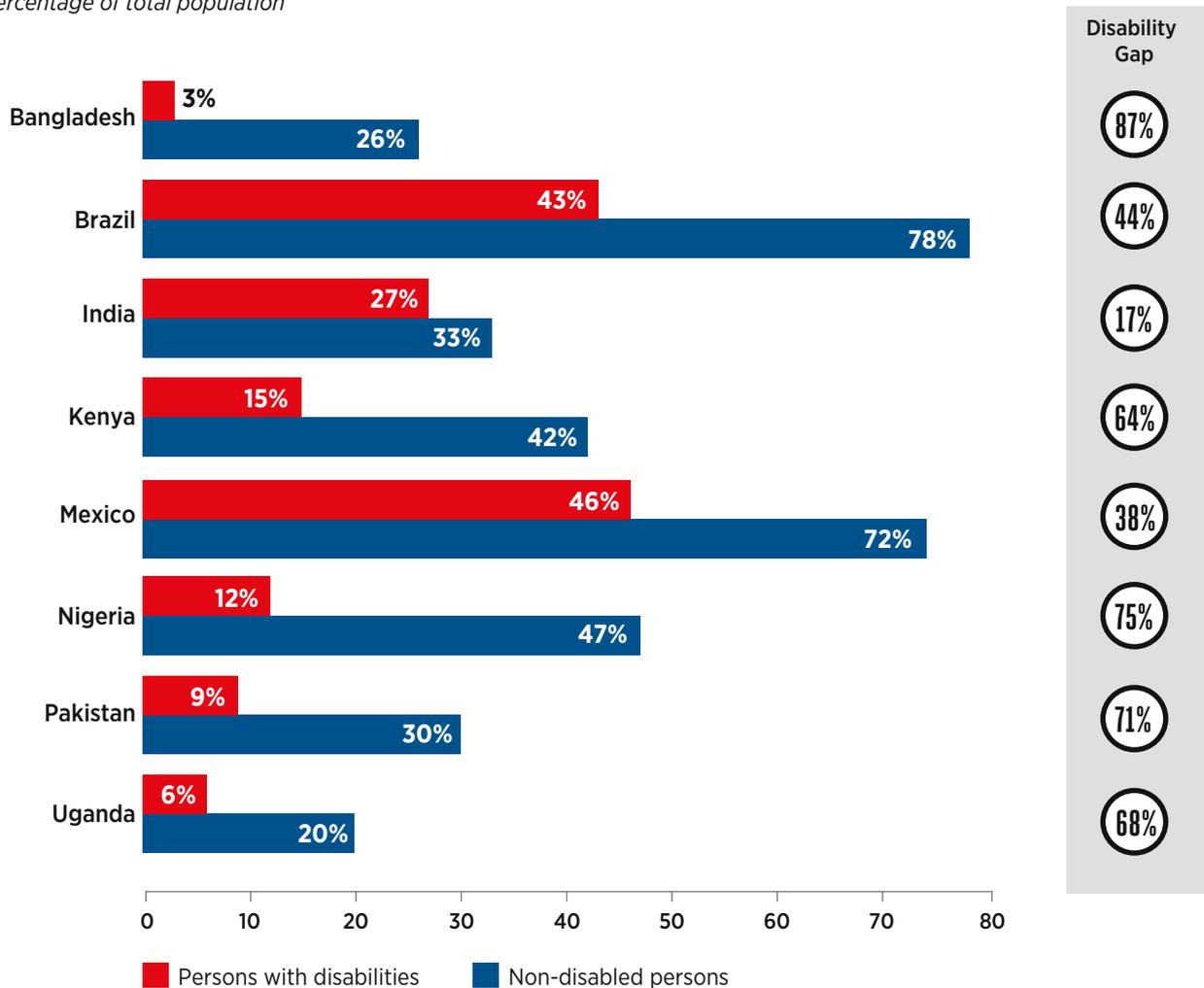
Kenya offers an interesting example. While the country only has a seven per cent disability gap in ownership, persons with disabilities are 30 per cent less likely to be aware of mobile internet and 64 per cent less likely to use mobile internet than non-disabled persons. This suggests that while Kenyans with disabilities may face fewer challenges to basic mobile phone ownership, there remain significant barriers to uptake smartphone and, also, of mobile internet.

This analysis suggests that efforts to digitally include persons with disabilities must go beyond ownership and access to basic mobile phones. Stakeholders need to understand how to reach this market segment to increase their awareness of mobile internet and, at the same time, increase usage of mobile internet by addressing the barriers they face as well as providing relevant products and services that deliver real benefits to them.

Figure 7

Mobile internet use by persons with disabilities and non-disabled persons

Percentage of total population



Source: GSMA Intelligence, 2019. Respondents were asked if they have used the internet on a mobile phone in the last three months. Based on survey results for adults aged 18 and over. n=35 to 436 for persons with disabilities and n=866 to 1942 for non-disabled persons.

Barriers to digital inclusion of persons with disabilities

As shown in the previous analysis, persons with disabilities are generally less likely to be mobile owners and users of mobile internet than non-disabled persons. Understanding the reasons that prevent persons with disabilities from owning and using mobile is important to ensure equitable access for all.

The GSMA Intelligence Consumer Survey 2019 asked respondents to identify different factors that they considered were preventing them from owning and using mobile. The **barriers to mobile ownership** were asked to non-mobile owners while the **barriers to mobile internet** were asked of mobile users and were aware of mobile internet, but have not used it in the last three months. There barriers were categorised as: access, affordability, literacy and skills, relevance, and safety and security.

Literacy and skills are an important barrier to mobile phone ownership for many persons with disabilities

People who reported not owning a phone were asked to identify barriers to ownership as well as the single most important barrier (Figure 8).²⁰ Analysis was undertaken of the results in five countries – Bangladesh, Brazil, India, Pakistan and Uganda.

The nature of communication through mobile means that barriers exist for those who have difficulties reading or writing. **Literacy and skills** ranked as the primary barrier to mobile ownership in three of the five of the markets analysed, except in India and Uganda, where it ranked third and second respectively. In Bangladesh and Pakistan, literacy and skills are equally reported a top barrier by persons with disabilities and non-disabled persons.

Affordability and Relevance were also identified as important barriers to mobile ownership by persons with disabilities. In Uganda, **affordability** was the most important barrier reported by persons with disabilities and non-disabled persons; in India and Pakistan, affordability was the second most important barrier for persons with disabilities. Handset affordability was the top barrier in these countries.

For mobile to be an assistive technology, products and services need to be designed to be relevant for persons with disabilities. **Relevance** was the most important barrier for persons with disabilities in India. However, it ranked as second or third most important in three other countries. These findings suggest that many persons with disabilities still find that mobile phones are not relevant to them.

Figure 8

Comparison of top barriers for mobile ownership by persons with disabilities and non-disabled persons in Bangladesh, Brazil, India, Pakistan and Uganda

Ranking	Bangladesh		Brazil		India		Pakistan		Uganda	
	Non-disabled persons	Persons with disabilities								
1	Literacy and skills	Literacy and skills	Affordability	Literacy and skills	Affordability	Relevance	Literacy and skills	Literacy and skills	Affordability	Affordability
2	Relevance	Relevance	Literacy and skills	Relevance	Literacy and skills	Affordability	Access	Affordability	Access	Literacy and skills
3	Access	Access	Relevance	Affordability	Relevance	Literacy and skills	Affordability	Relevance	Literacy and skills	Access

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=36 to 190 for persons with disabilities and n=116 to 489 for non-disabled people. Kenya, Mexico and Nigeria were excluded due to having a small sample size for persons with disabilities.

The top barriers to mobile internet use by persons with disabilities in India

The analysis in the previous section showed that fewer persons with disabilities than non-disabled persons are aware of mobile internet and that even fewer adopt mobile internet. This results in a substantial disability gap in mobile internet awareness and use across all countries surveyed. As a consequence, the number of respondents for questions on the barriers to mobile internet use fell below the statistical threshold for analysis ($n > 30$) in all countries except India. Hence, only the results from India are presented in this section.

Addressing the disability gap in mobile internet use requires to understand the barriers experienced by persons with disabilities. In India, literacy and skills are the most important barrier for persons with

disabilities who have used a mobile phone and are aware of mobile internet but have not used it in the last three months. The lack of knowledge on how to access the internet through a is the main reported barrier.

Affordability and relevance were respectively second and third most important barriers reported by persons with disabilities who do not use mobile internet. The cost of a handset remains high for many people and affordability is the primary barrier for non-disabled persons. For persons with disabilities, the lack of content in one's local language affects the perception of mobile internet being relevant for them.

Figure 9

Top barriers to mobile internet use by persons with disabilities and non-disabled persons in India

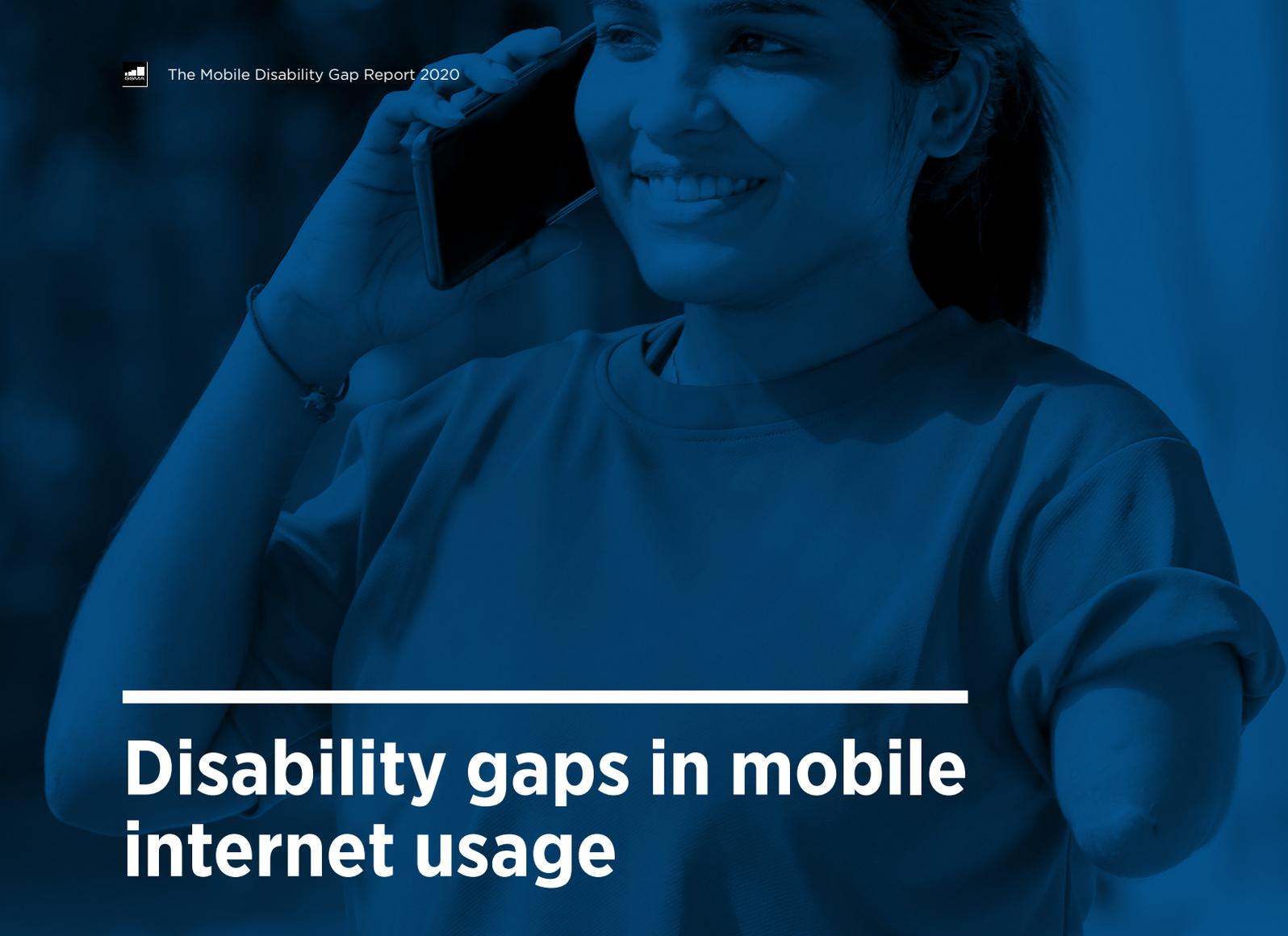
Ranking	India	
	Non-disabled persons	Persons with disabilities
1	Affordability	Literacy and skills
2	Literacy and skills	Affordability
3	Access	Relevance

Source: GSMA Intelligence Consumer Survey, 2019

Base: Adults aged 18 and over 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."

$n=71$ for persons with disabilities and $n=400$ for non-disabled persons. Excluded Bangladesh, Brazil, Kenya, Mexico, Nigeria, Pakistan, and Uganda due to having a small sample size for persons with disabilities.



Disability gaps in mobile internet usage

For persons with disabilities, mobile phones can be assistive technologies to access information and services that are otherwise inaccessible to them.²¹ Smartphones in particular provide access to a wide range of use cases and services, many of which are enabled through mobile internet. Smartphones embed accessibility features such as screen-readers, voice command, and magnification, which facilitate the use of mobile for persons with visual or hearing impairment, for example.²²

As part of the GSMA Intelligence Consumer Survey 2019, data from different use cases was

gathered for both persons with disabilities and non-disabled persons in eight markets. These use cases include communication (e.g. calls, SMS/MMS messaging, video calling); entertainment services (e.g. listening to music, watching videos online, playing games); information (e.g. applying for jobs, accessing government services, user location or transportation apps); and mobile-based financial services (e.g. mobile money or mobile banking, ordering or purchasing goods or services). A full list of use cases can be found in [Appendix 1: Detailed methodology](#). Nigeria was excluded from this analysis due to a small sample size for mobile owners with disabilities.

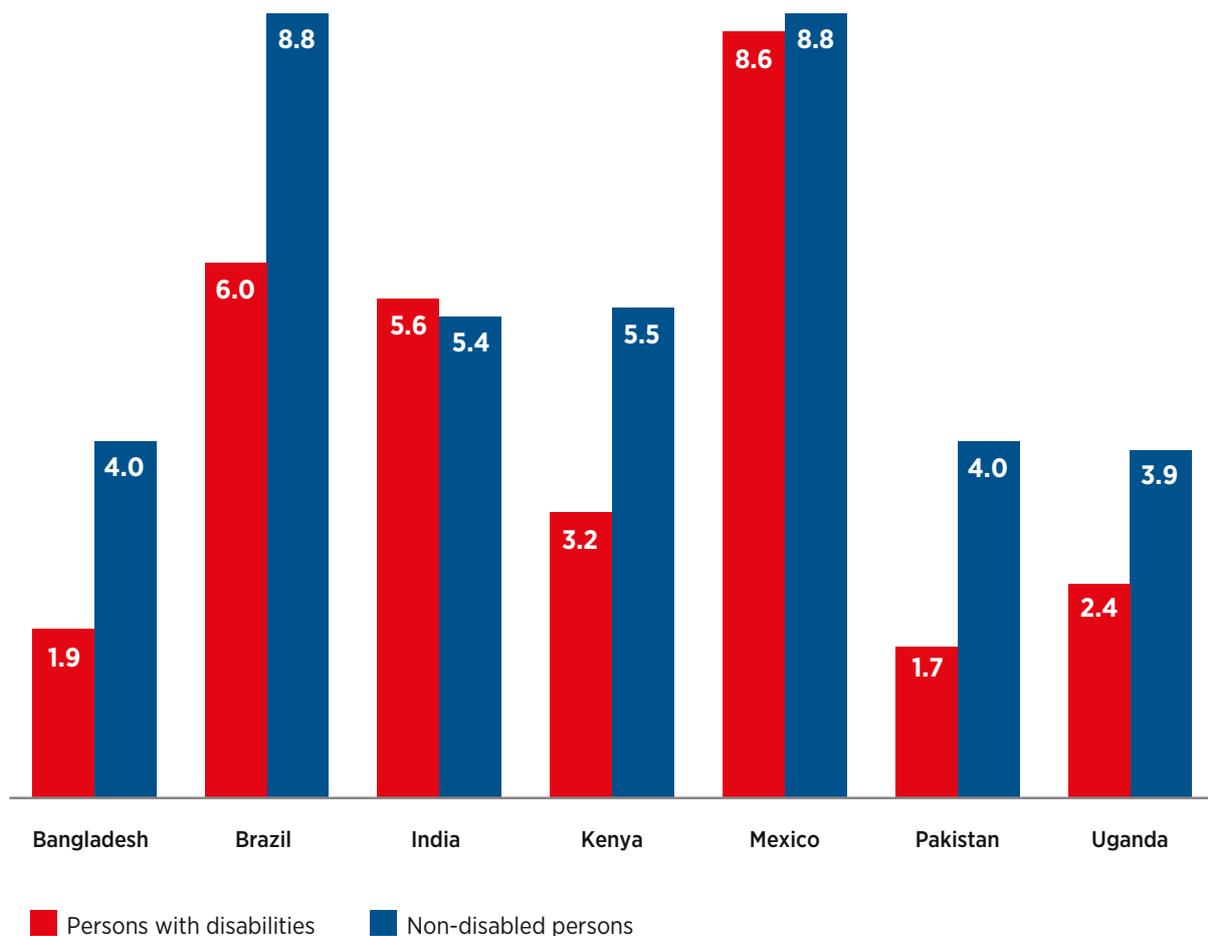
Mobile owners with disabilities can have a similar usage of mobile internet as non-disabled persons

Across the seven surveyed countries included in the analysis, while mobile usage levels differ by country, there is not always a gap between users with disabilities and non-disabled users. For example, in Mexico, where there was the highest level of mobile internet use in the surveyed countries, there is almost no difference in the average number of weekly use cases between persons with disabilities and non-disabled persons

(8.6 and 8.8 use cases a week, respectively). Similarly in India, the difference between owners with disabilities and non-disabled owners is also almost non-existent (5.6 and 5.4 use cases a week). However, in Brazil, the average number of weekly use cases for non-disabled mobile owners is 8.8 compared to an average of only six use cases by mobile owners with disabilities, the largest gap in the countries surveyed.

Figure 10

Average number of weekly use cases of mobile internet by country and disability prevalence



Source: GSMA Intelligence, 2019. Based on survey results for adults aged 18 and over. 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=34 to 246 for persons with disabilities and n=682 to 1453 for non-disabled persons. Nigeria was excluded due to having a small sample size for persons with disabilities.

In some countries, more mobile owners with disabilities use mobile for information services at least once a month than non-disabled mobile owners

An important benefit of mobile phones is the convenience of accessing information in different formats. Information services include accessing information to support education, news, mapping or transportation apps, ride-hailing or taxi apps, employment, accessing government services, and to improve or monitor health. The analysis shows some differences in how these are used by persons with disabilities and non-disabled persons.

In general, results from the analysis indicate that a relatively low number of mobile owners in Bangladesh, Kenya, Pakistan and Uganda use one information service use case at least once a month. In these countries, the proportion is considerably smaller for owners with disabilities than non-disabled persons. In addition, in Brazil mobile owners with disabilities are almost a third less likely to use their phones to access information monthly compared to those without disabilities.

However, in Mexico more mobile owners with disabilities use mobile information use cases at least once a week than non-disabled mobile owners. This difference is largely driven by a much larger percentage of mobile owners with disabilities using their phones to access information about their health, accessing government services, access information to support someone's education, and using ride-hailing or taxi apps. This strengthens the findings that mobile is a convenient tool to access information for persons with disabilities.

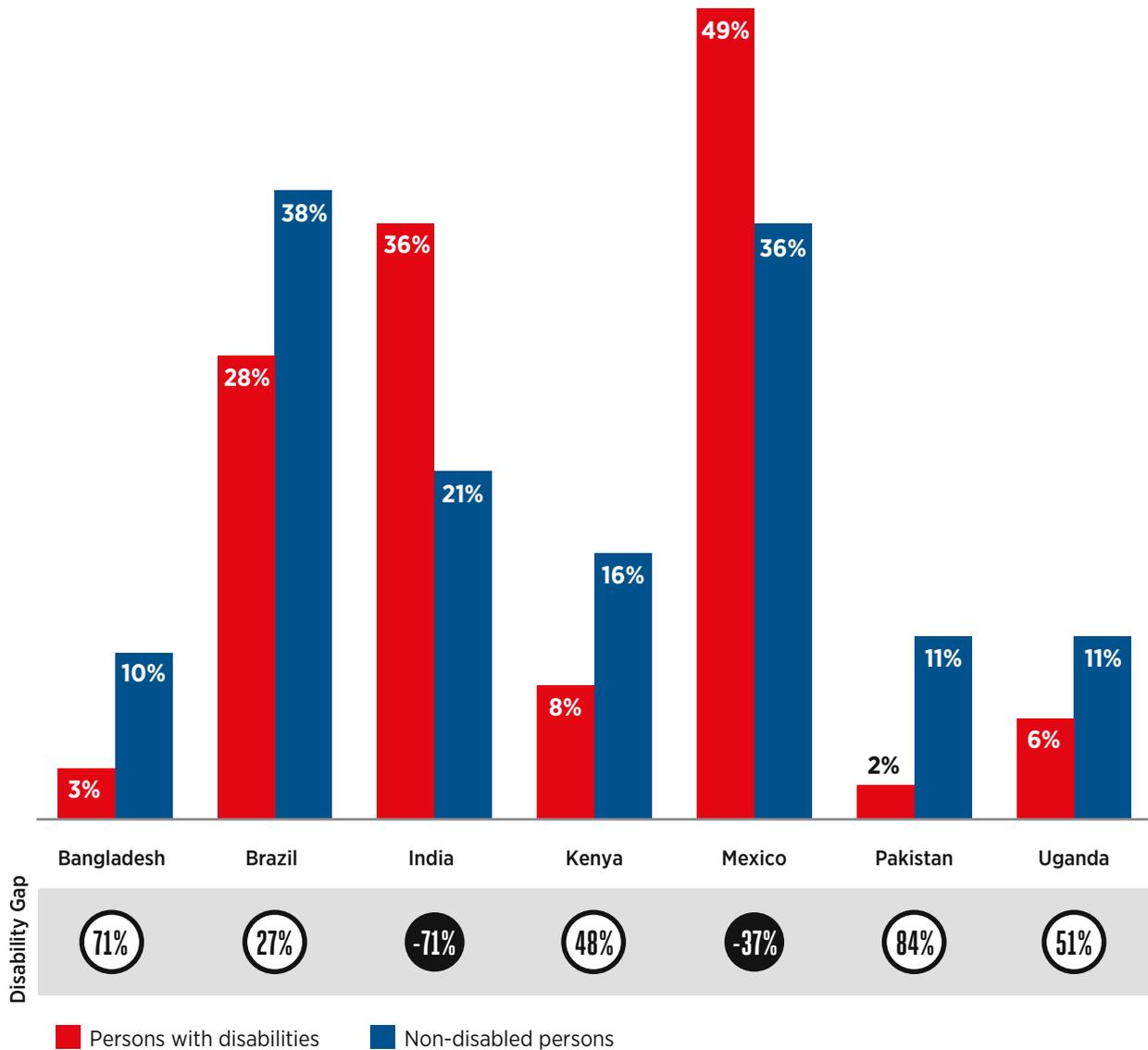
Similarly, in India, 40 per cent of mobile owners with disabilities report using their mobile to access information services at least once a month, compared to 21 per cent of non-disabled mobile owners.

The analysis highlights that mobile can be important for accessing useful information by persons with disabilities and, equally, the relevance of designing digital content in accessible formats.



Figure 11

Average percentage of mobile owners engaging in one information service use case at least once a month, by country and disability prevalence



Source: GSMA Intelligence, 2019. Based on survey results for adults aged 18 and over. 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=34 to 246 for persons with disabilities and n=682 to 1453 for non-disabled persons. Nigeria was excluded due to having a small sample size for persons with disabilities.

Box 3. Mobile as an enabler of financial inclusion for persons with disabilities

Mobile has helped revolutionise the financial sector. Products such as mobile money have allowed mobile operators to play a key role in many LMICs by providing access to financial services for many people who are unbanked. In 2019, over a billion mobile money accounts were registered globally. Yet there is a lack of research on the financial inclusion of persons with disabilities in LMICs and the potential role of mobile as an enabler.

To understand mobile money account ownership among persons with disabilities, data from the GSMA Intelligence Consumer Survey 2019 was analysed in three countries: Bangladesh, Kenya, and Uganda.

In these markets, as shown in Figure 12, the number of persons with disabilities who own a mobile money account is lower than non-disabled persons. From the three countries, Bangladesh has the lowest levels mobile

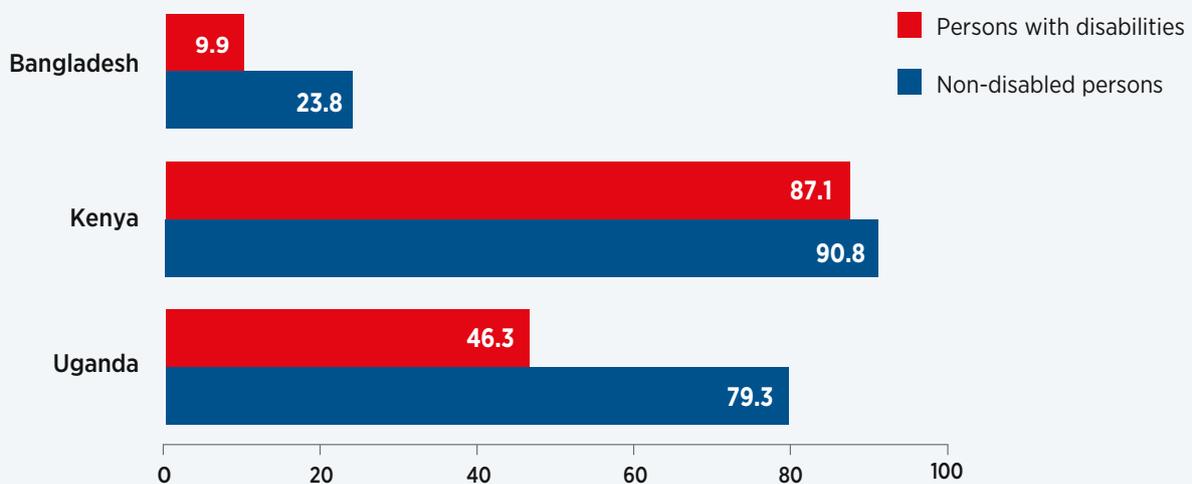
money account ownership but the largest disparity between the proportion of owners with disabilities and non-disabled owners. Only nearly 10 per cent of persons with disabilities own an account compared to 24 per cent of non-disabled persons. While more people own a mobile money account in Uganda compared to Bangladesh, only 46 per cent of persons with disabilities own a mobile money account compared to 79 per cent of non-disabled persons.

In contrast, the penetration of mobile money in Kenya is very high, where over 90 per cent of adults own an account and there is almost no difference in the percentage of persons with disabilities and non-disabled persons (87 and 91 per cent, respectively). **The data from Kenya demonstrates that persons with disabilities and non-disabled persons can have equal access to mobile money services.**

Figure 12

Ownership of mobile money accounts by persons with disabilities and non-disabled persons

Percentage of total population



Source: GSMA Intelligence, 2019. Respondents were asked if they had a mobile money account registered in their name. Based on survey results for adults aged 18 and over. n=35 to 436 for persons with disabilities and n=866 to 1942 for non-disabled persons.

Generating data and insights to drive actions

In previous work conducted by the GSMA Assistive Tech, the mobile disability gaps in ownership and usage were uncovered in Bangladesh and Kenya for the first time. The research demonstrated that, throughout every stage of the mobile user journey, persons with disabilities were less likely to own, use or benefit from mobile than non-disabled persons.

This report presents analysis from the GSMA Intelligence Consumer Survey 2019. While this survey was not designed to focus specifically on the issue of disability, and as such as it has some limitations, the evidence generated through this analysis further strengthens the main finding of previous research: **persons with disabilities are digitally excluded**. To close the disability gaps in mobile ownership and usage, actions are needed by stakeholders in the digital ecosystem to address barriers, including affordability, access, literacy and skills, relevance and safety and security. Analysis of mobile use cases show that, when these barriers are addressed, persons with disabilities can use mobile at an equal or even greater level than non-disabled persons.

Based on the research, key recommended actions include:

- Making products and services more **accessible and affordable** for persons with disabilities. Research shows that the benefits of mobile are perceived by many persons with disabilities; yet, the cost of handsets and data impede uptake of mobile.
- **Raising awareness** of mobile internet and its benefits for persons with disabilities. Fewer persons with disabilities than non-disabled persons are aware of mobile internet which, consequently, results in lower usage of mobile internet by persons with disabilities.
- Building the **digital skills** of persons with disabilities. Many people are still digitally excluded due to lack of knowledge of how to use mobile and mobile internet.
- Quality **disability-disaggregated data** is critical. Disability data is largely lacking in most markets, hampering efforts to drive the digital inclusion of persons with disabilities. It is critical that policymakers, the public and private sector, and digital players invest and collaborate to accurately, ethically and effectively gather data to inform inclusive, relevant products, services and innovations.

These recommendations are not exhaustive nor comprehensive, but offer a proposal for stakeholders to start their journey towards closing the mobile disability gap. The GSMA Assistive Tech programme will continue to generate insights and evidence on the mobile disability gap to inform and support actions from the mobile industry towards a more inclusive digital society.

Appendix 1:

Detailed methodology

This annex provides methodological details for this report. The research leverages the GSMA Intelligence Consumer Survey 2019, a nationally representative survey (face-to-face) in the following LMICs:

- Bangladesh
- Brazil
- India
- Kenya
- Mexico
- Nigeria
- 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*.²³ 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.²⁴ 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 all of the analysis.

Table 1

Total number of respondents by country

	Total respondents in country	Total respondents with disabilities (unweighted)	Disability prevalence in the sample
BANGLADESH	1,060	89	8.4%
BRAZIL	1,000	134	13.4%
INDIA	2,378	436	18.3%
KENYA	1,019	63	6.1%
MEXICO	1,012	64	6.3%
NIGERIA	1,117	35	3.3%
PAKISTAN	1,072	70	6.5%
UGANDA	1,018	126	12.4%

Measuring disability gaps

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

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

The disability gap was calculated using the following formula:

$$\frac{\% \text{ Non-disabled mobile owner/users} - \% \text{ Mobile owners/users with disabilities}}{\% \text{ Non-disabled mobile phone owners/users}}$$

The present report aims to align with the broader work conducted by the GSMA on digital inclusion. For more details on the calculations of the digital inclusion

gap (focused on gender) in the countries surveyed, please see the Methodology section of the *Mobile Gender Gap Report 2020*.²⁵

Measuring mobile use

Analysis of mobile use differed from the Mobile Gender Gap Report 2020. For this study, 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 the present report, these categories included the following use cases:

Communications	Entertainment	Financial	Information
Network calls	Playing free games	Using online banking	Accessing services that improve or monitor health
IP calls	Playing paid for games	Using mobile money to send or receive money	Accessing government services
SMS and MMS	Watching free-to-access online video	Paying for goods using contactless payment	Looking or applying for jobs
Video calling	Paying for online TV subscriptions	Paying utility bills	Accessing information to support education
Instant messaging apps	Paying for on-demand TV and movies		Accessing information on farming or fishery services
Visiting social networking sites	Listening to free online music		Using maps, timetables and traffic information applications
	Listening to music from a paid subscription service		Finding information about goods and services
	Listening to music purchased from an online music retailer		Ordering and purchasing goods
			Reading the news
			Using a ride hailing, taxi, e-bike or scooter app

This report presented the detailed analysis of the Information category only, and the number of persons with disabilities and non-disabled persons engaging in each use case at least once a month was calculated. The numbers were calculated as a percentage of the mobile-owning population and averaged 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 month.

Endnotes

1. Human Rights Watch (2019). [Human Rights in the Digital Age](#).
2. Bahia, K. & Suardi, S. (2019). [The State of Mobile Internet Connectivity 2019](#). GSMA.
3. GSMA Intelligence (2020). [The Mobile Economy](#).
4. United Nations Department of Economic and Social Affairs (2016). [Toolkit on Disability for Africa. Module 12: Information and communication technology \(ICT\) and disability](#).
5. UNDESA (2006). Article 9 – Accessibility. Convention on the Rights of Persons with Disabilities. Available at: <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities/article-9-accessibility.html>.
6. UNESCO (2013). [UNESCO global report: opening new avenues for empowerment: ICTs to access information and knowledge for persons with disabilities](#). United Nations Educational, Scientific and Cultural Organization.
7. The study followed a survey methodology to obtain nationally representative results. A total of 1,005 interviews and 1,055 interviews were conducted in Kenya and Bangladesh, respectively, ensuring a minimum of 800 interviews with persons with disabilities and 200 interviews with non-disabled persons in each country as a control group. Quotas were set for data collection based on: type of disability, gender, environment (urban/rural), age and income level. Datasets were post-weighted to allow conclusions at a national level.
8. Aranda-Jan, C. & Shanahan, M. (2020). [The Digital Exclusion of Women with Disabilities. A Study of Seven Low- and Middle-Income Countries](#). GSMA
9. Washington Group on Disability Statistics (n.d.). WG Short Set on Functioning (WG-SS). Available at: <https://www.washingtongroup-disability.com/question-sets/wg-short-set-on-functioning-wg-ss/>
10. In the previous research conducted by the GSMA in 2019, the gaps in ownership identified in Kenya and Bangladesh were 12 and 13 per cent respectively. The difference is, in part, due to different sampling frames and data collection approaches used in each study. While this report uses data from a survey that employed a nationally representative sample, the survey did not focus on studying disability and, as such, fieldwork preparations were not made (e.g. sign language interpreters or use of different modes for survey administration). The study from 2019, on the other hand, was designed to be disability inclusive but employed purposeful sampling, which resulted in biases in sampling and reliance on secondary data for weighing the data. However, even if these analytical challenges exist, both studies show that a disability gap exists in ownership and usage of mobile.
11. Rowntree, O. & Shanahan, M. (2020). [The Mobile Gender Gap Report 2020](#). GSMA.
12. Karlsson, M., Penteriani, G., Croxon, H., Stanek, A., Miller, R., Pema, D. & Chitiyo, F. (2017). [Accelerating affordable smartphone ownership in emerging markets](#). GSMA.
13. GSMA Intelligence (2020). [The Mobile Economy](#).
14. Narasimhan, N. & Leblois, A. (2012). [Making mobile phones and services accessible for persons with disabilities](#). ITU.
15. Aranda-Jan, C. & Boutard, A. (2019). [Understanding the mobile disability gap - Insights on mobile phone access and usage by persons with disabilities in Kenya and Bangladesh](#). GSMA.
16. Cahalane, C. (2019). [Less than 1% of website home pages are likely to meet accessibility standards](#). AbilityNet.
17. Nigeria was excluded due to a sample size $n < 30$.
18. GSMA (2020). [The Mobile Economy](#).
19. Bahia, K. & Delaporte, A. (2020). [The State of Mobile Internet Connectivity 2020](#). GSMA.
20. Not all the eight countries initially included in the analysis are presented because the sample sizes for Mexico, Kenya and Nigeria fell below the analytical threshold ($n > 30$).
21. Narasimhan, N. & Leblois, A. (2012). [Making mobile phones and services accessible for persons with disabilities](#). ITU.
22. Aranda-Jan, C. & Boutard, A. (2019). [Understanding the mobile disability gap - Insights on mobile phone access and usage by persons with disabilities in Kenya and Bangladesh](#). GSMA.
23. Shanahan, M. (2020). [The Mobile Gender Report 2020: Methodology](#). GSMA.
24. 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: <https://www.washingtongroup-disability.com/question-sets/wg-short-set-on-functioning-wg-ss/>.
25. Shanahan, M. (2020). [The Mobile Gender Report 2020: Methodology](#). GSMA.

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