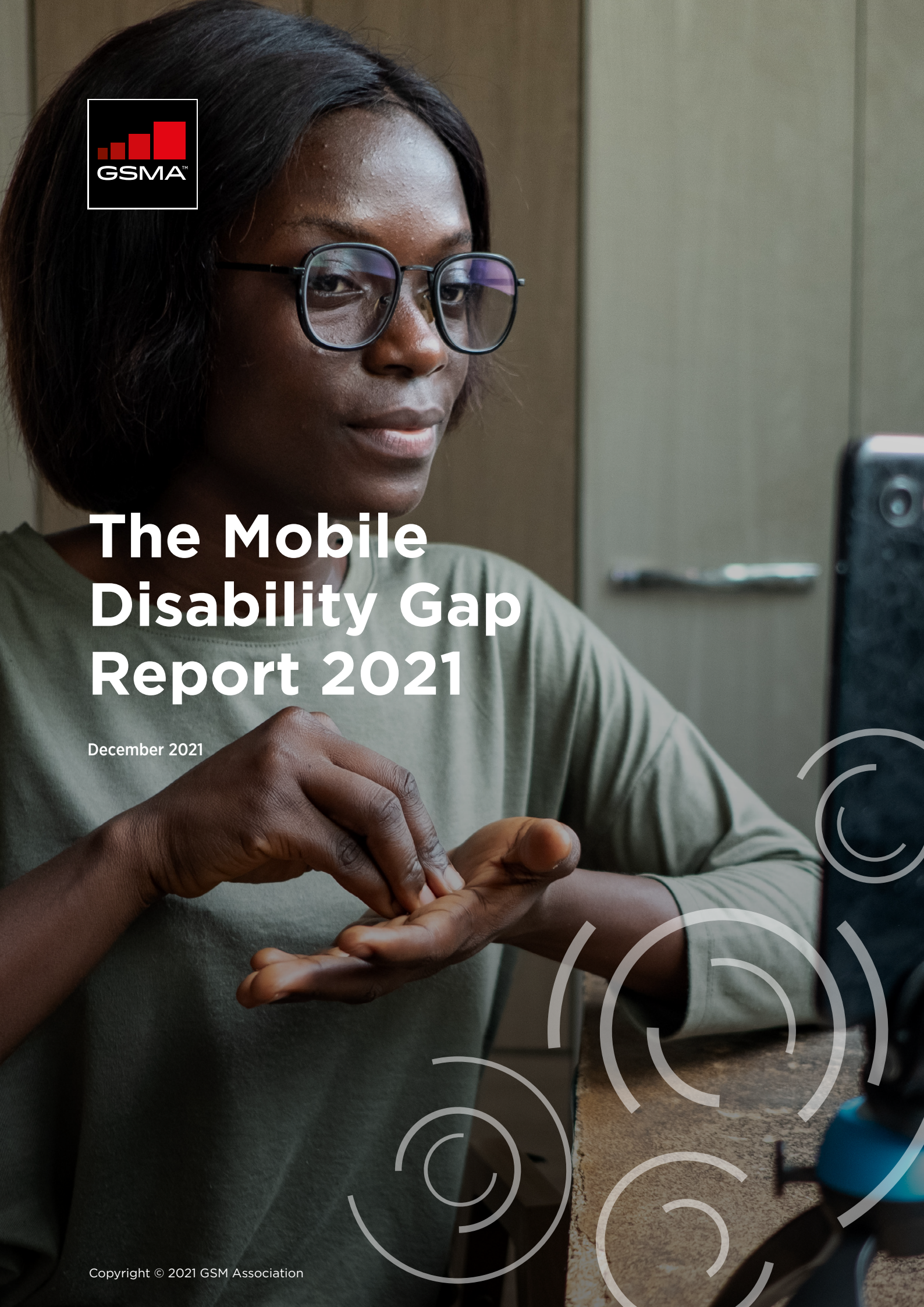

The Mobile Disability Gap Report 2021

December 2021

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GSMA Assistive Tech

The GSMA Assistive Tech programme works to drive greater access and use of mobile technologies for persons with disabilities in emerging markets and maximise opportunities for social and economic inclusion. The programme works with the mobile industry and key disability and development stakeholders to address the digital inclusion gap of persons with disabilities, identify innovation opportunities and highlight the value of mobile-enabled assistive technologies. The programme is supported by the UK Foreign, Commonwealth & Development Office (FCDO).

For more information, please visit **www.gsma.com/AssistiveTech**.

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On this study, Ipsos worked with the GSMA as a fieldwork partner and as such, is not responsible for the analysis or conclusions outlined in this report.

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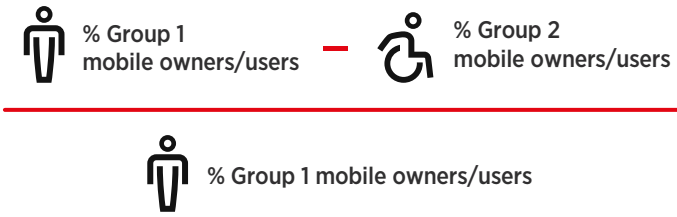
CONTENTS

Definitions

Access	The potential for an individual to use a mobile phone, regardless of ownership, through borrowing or renting.
Accessibility	The design of products, devices, services or environments for persons with disabilities.
Assistive technologies (ATs)	An umbrella term for the systems and services used to deliver assistive products and services, including through digital technologies, which is the focus of this report. In this report, the term "assistive technologies" is based on the World Health Organization's (WHO) definition, but also includes mobile phones.
Disability	The interaction between individuals with a health condition (e.g. cerebral palsy, Down syndrome, depression) and personal and environmental factors (e.g. negative attitudes, inaccessible transportation and public buildings, limited social supports).[1]
Mobile disability gap/ gender and disability gap	Refers to how less likely one group (Group 1) is to own a mobile phone/use mobile internet/perform a use case on mobile than another group (Group 2). This gap is calculated for gender and/or disability throughout this report to evaluate differences in mobile ownership and usage of services. The formula is:  The **disability gap** refers to the differences between persons with and without disabilities regardless of gender. The **gender and disability gap** considers 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 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.[2] Respondents answer questions and report difficulties experienced in six functional domains: seeing, hearing, walking, cognition, self-care and communication.

Introduction

Connectivity is increasingly becoming the bedrock of everyday life, enabling people to access up-to-date information and communicate with others around the globe. By the end of 2020, more than four billion people were using mobile internet, equivalent to 51 per cent of the world's population. For many, mobile is their primary way to access the internet, especially in low- and middle-income countries (LMICs). The COVID-19 pandemic reinforced the importance of connectivity when many countries imposed restrictions on movement that affected trade, education and other aspects of life. Mobiles were often one of the only ways to stay in touch with family and friends, to operate businesses safely and to access vital services, such as healthcare and education.

More than a billion people, or 15 per cent of the global population, are estimated to live with some form of disability.[3] Mobile devices and services offer life-changing benefits to persons with disabilities, such as enabling access to basic services and independent living.[4] Despite this potential, many persons with disabilities remain unconnected and digitally excluded. It is estimated that around 90 per cent do not have adequate access to the assistive technologies (AT) they require.[5] Mobile-based ATs, especially smartphones,[6] could be a valuable and cost-effective tool for persons with disabilities.

This report presents key insights into the mobile disability gap. GSMA research in seven LMICs revealed that persons with disabilities are less likely to own a mobile, especially a smartphone, and are even less likely to use, or be aware of, mobile internet.

Methodology

This report uses data from the GSMA Consumer Survey 2020 to explore the digital inclusion of persons with disabilities in seven LMICs: Algeria, Bangladesh, Guatemala, India, Kenya, Nigeria and Pakistan. The Washington Group Short Set of Questions[7] was used to identify persons with disabilities. Respondents who reported that they had "a lot of difficulty" or "cannot do at all" in at least one of the functional domains were considered a person with disabilities (see Appendix 1 for more details on the methodology).

Limitations

Although nationally representative, the 2020 Consumer Survey did not focus specifically on persons with disabilities. Fieldwork was therefore not tailored to the needs of persons with disabilities (e.g. sign language interpreters or different modes of survey administration), interviewers may not have been trained to interview persons with disabilities and no quotas were allocated for the types of disabilities reported by participants. It is therefore likely that the views of some people were omitted, particularly those who face communication barriers, such as persons who are deaf, persons with severe speech impairments and those with learning disabilities.

Two additional limitations are noted. First, since fewer persons with disabilities own a mobile phone and even fewer use mobile internet, in some countries the sample size fell below the statistical threshold (n>30). Where the sample size did not meet this minimum threshold, the country was removed from the analysis. Second, given that this was only the second consecutive year in which the GSMA Consumer Survey included the Washington Set of Short Questions, there is insufficient data to determine trends, and the relatively small sample sizes have resulted in some significant variations. Therefore, comparison of the data for the last two years is not recommended.

Key findings

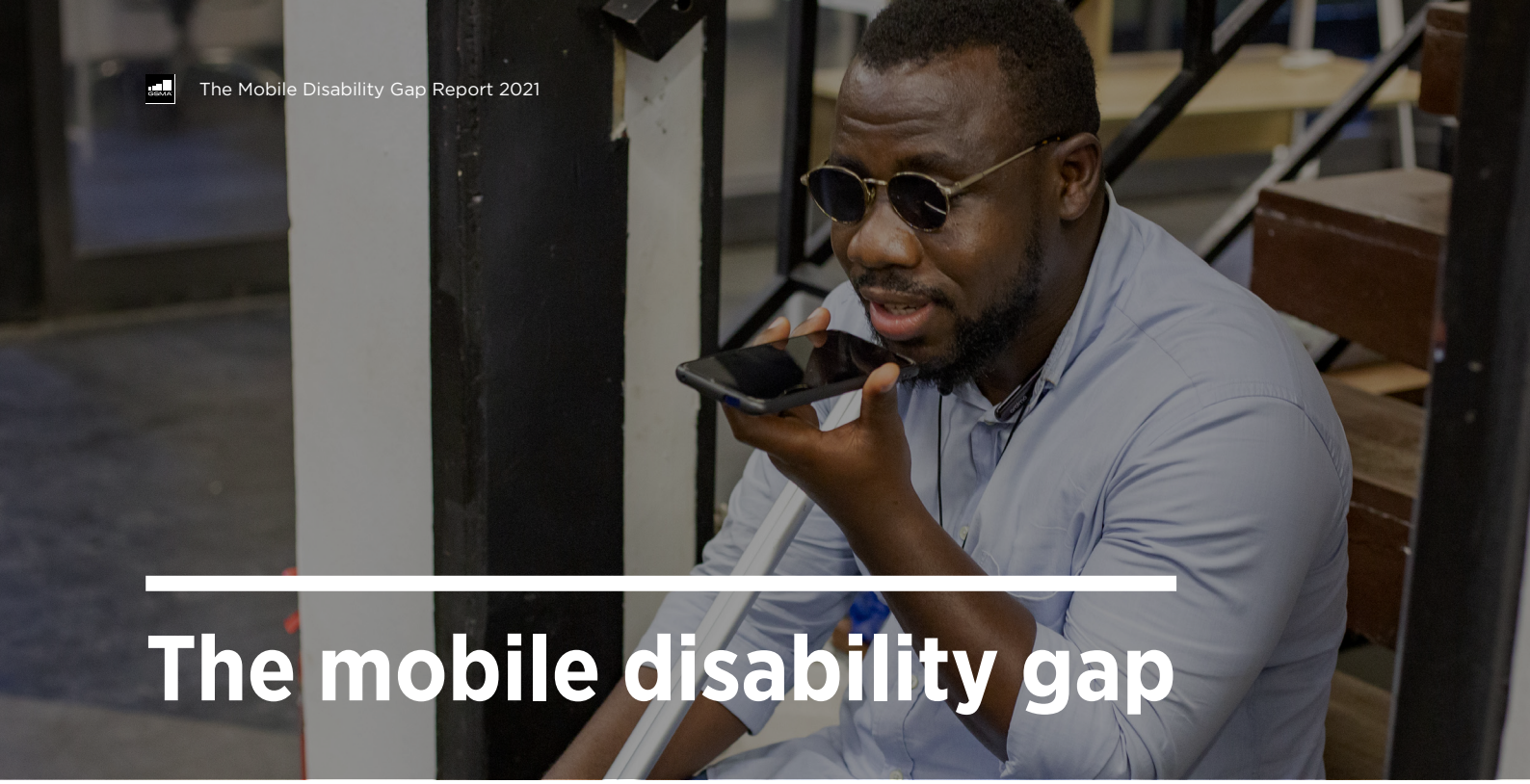
1. Persons with disabilities have **lower levels of mobile ownership** than non-disabled persons in all countries surveyed. Bangladesh has the widest gap, where persons with disabilities are 55 per cent less likely to own a mobile phone than non-disabled persons, and the smallest gap is in Kenya and Pakistan at 11 per cent.

2. Despite the life-enhancing potential of smartphones as an assistive technology and a gateway to digital inclusion, persons with disabilities are significantly **less likely to own a smartphone** than non-disabled persons. The disability gap in smartphone ownership is wider than the gap in overall mobile ownership in most of the survey countries.

3. There is a significant **disability gap in mobile internet use.** In each of the survey countries, persons with disabilities are significantly less likely to use mobile internet than non-disabled persons.

4. Across all survey countries, **fewer persons with disabilities are aware of the mobile internet** than non-disabled persons. This is a significant barrier that prevents persons with disabilities from using and benefitting from mobile internet.

5. In India and Pakistan, mobile users with disabilities who are aware of mobile internet but do not use it reported that a **lack of literacy and skills** is the main barrier to usage. Other major barriers include lack of perceived relevance, safety and security and affordability.



The mobile disability gap

The disability gap typically widens at each stage of the mobile internet journey

In low- and middle-income countries, mobile is the primary way in which most people access the internet. Acquiring, using and learning about digital services is not necessarily a linear process. However, certain stages and milestones can pose barriers to regular and diverse mobile use for persons with disabilities (Figure 1). This report examines each stage of this journey.

Our analysis shows that the disability gap typically widens at each stage of the user journey. For instance, in Kenya where persons with disabilities are 11 per cent less likely to own a mobile phone than non-disabled persons, they are also 36 per cent less likely to be aware of mobile internet and 85 per cent less likely to use mobile internet. Regression analysis in surveyed countries indicates that even when persons with disabilities share the same socio-economic and demographic characteristics (i.e. education, income, literacy, employment, age, gender, rural-urban location and having dependants) as non-disabled persons, they are still less likely to own a mobile phone, especially a smartphone.[8] This indicates that disability is a significant determining factor and that other issues are also at play, such as discrimination and social norms.

Figure 1

Stages of the mobile internet user journey

Persons with disabilities are less likely to own a mobile phone

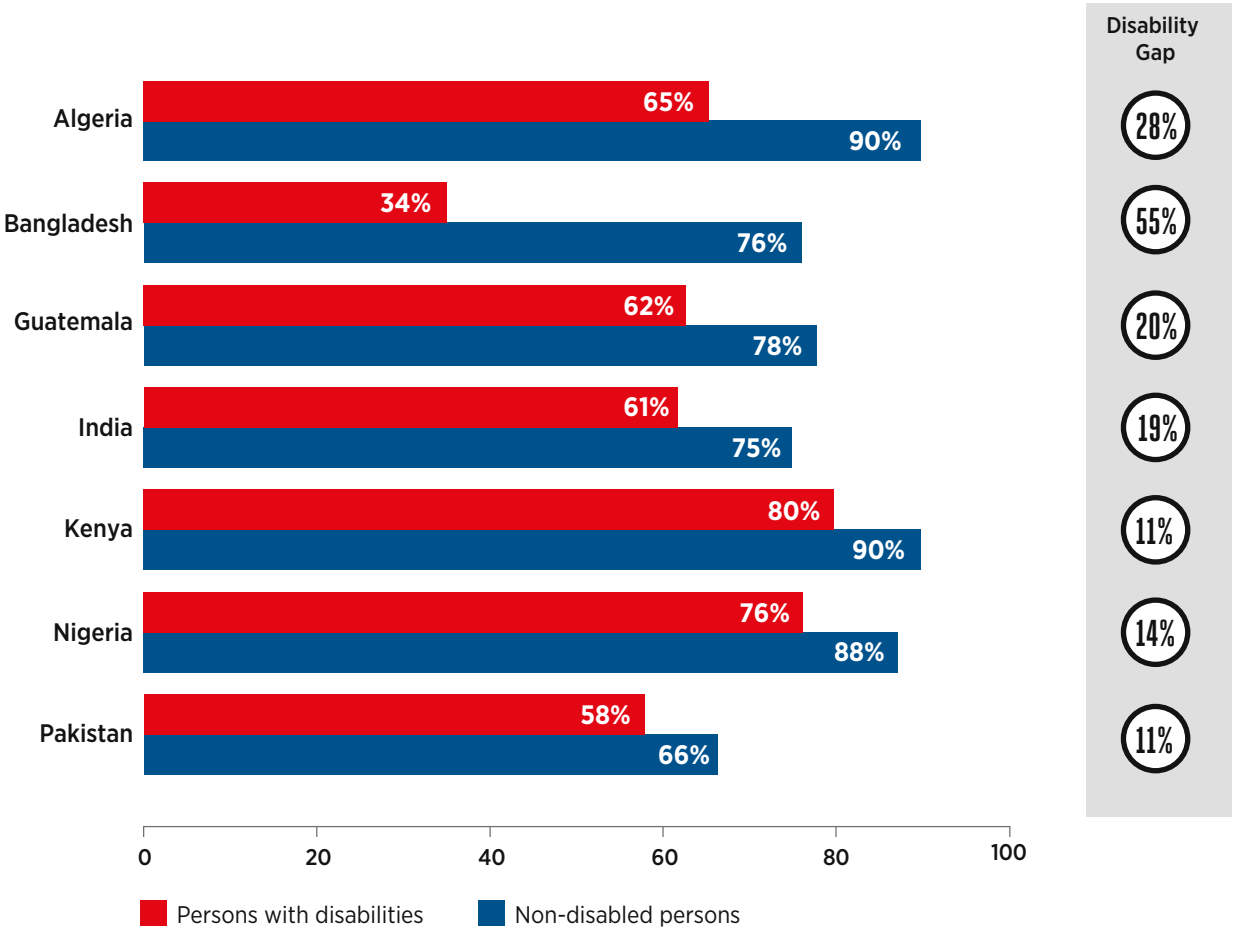
While mobile access and use have increased considerably in recent years, persons with disabilities have disproportionately lower levels of mobile ownership.

This disability gap in mobile ownership varies significantly by country. In Bangladesh, persons with disabilities are 55 per cent less likely to own a mobile phone than non-disabled persons, but in Kenya and Pakistan the gap is only 11 per cent. As shown in Figure 2, in Bangladesh 76 per cent of non disabled persons own a mobile phone compared to only 34 per cent of persons with disabilities. However, Figure 2 shows that higher rates of mobile ownership do not necessarily translate into a smaller disability gap, and vice versa.

Figure 2

Disability gap in mobile ownership

Percentage of the total population



Source: GSMA Consumer Survey 2020. Mobile ownership is defined as having sole or main use of a SIM card (or a mobile phone that does not require a SIM) and using it at least once a month. Based on survey results for adults aged 18 and over. n=49–260 for persons with disabilities and n=900–1,866 for non-disabled persons.

Persons with disabilities are less likely to own a smartphone despite the potential benefits

The type of handset one owns has a major impact on their ability to reap the benefits of mobile technology and mobile internet use. For example, our analysis shows that in India, persons with disabilities are 83 per cent more likely to use mobile internet if they own a smartphone than if they own a less sophisticated handset. However, in almost all the countries surveyed, persons with disabilities are more likely to own basic phones, which have either no or fewer built-in accessibility features and may not be internet-enabled. Affordability is a key barrier to smartphone ownership for many in LMICs, especially persons with disabilities who tend to have lower incomes and less financial autonomy than non-disabled persons.[9]

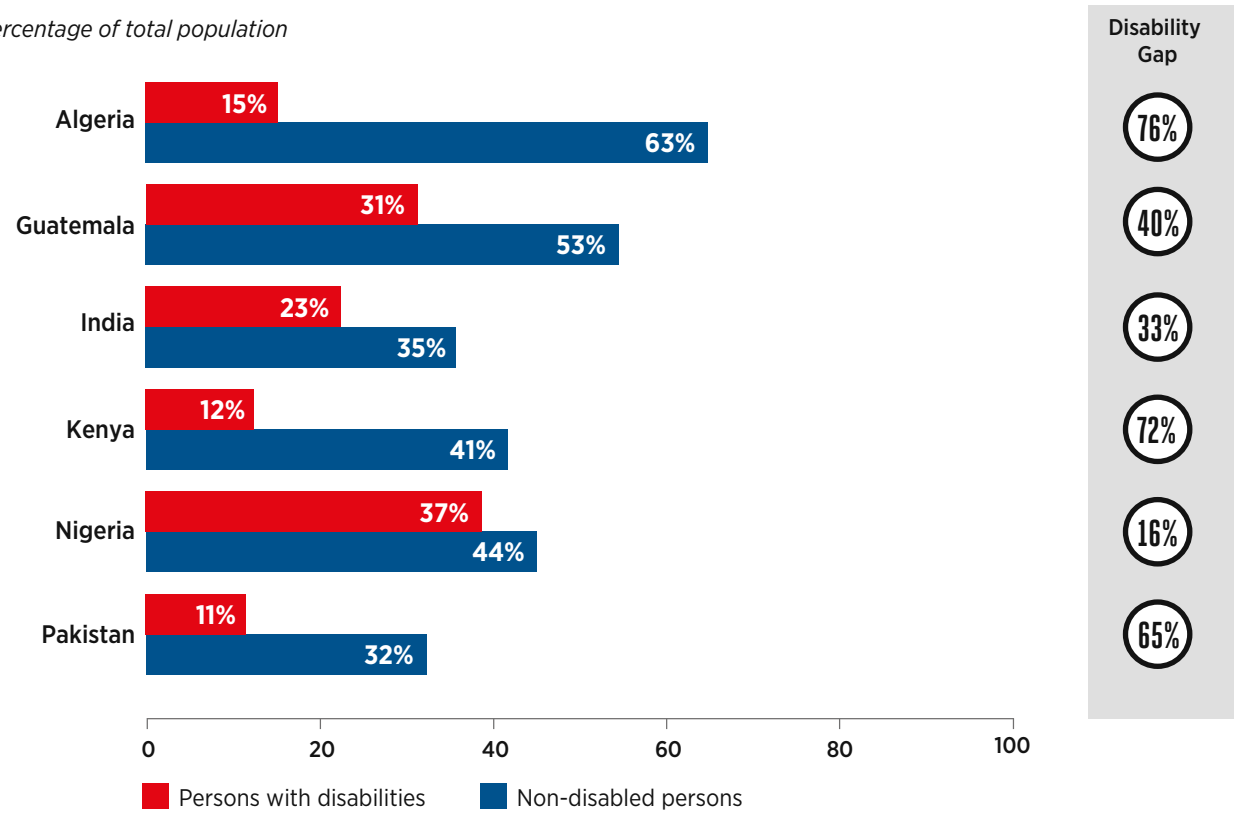
Although less-expensive feature phones are increasingly popular in LMICs and can be a stepping stone to mobile internet access, they do not have the same enabling potential for persons with disabilities as smartphones.[10] Smartphones have the ability to cluster multiple ATs into one device, such as mobile-enabled screen readers, voice control or captioning. Smartphones also enable products and services to be developed using universal design principles.[11,12] Still, in all the survey countries,[13] persons with disabilities are significantly less likely to own a smartphone than non-disabled persons.

The widest gap in smartphone ownership is in Algeria where persons with disabilities are 76 per cent less likely to own a smartphone than non-disabled persons, and the smallest gap is in Nigeria at 16 per cent (Figure 3).

Figure 3

Disability gap in smartphone ownership

Percentage of total population



Source: GSMA Consumer Survey 2020. Based on survey results for adults aged 18 and over. n=49–260 for persons with disabilities and n=900–1,866 for non-disabled persons.

Persons with disabilities use mobile internet significantly less than non-disabled persons

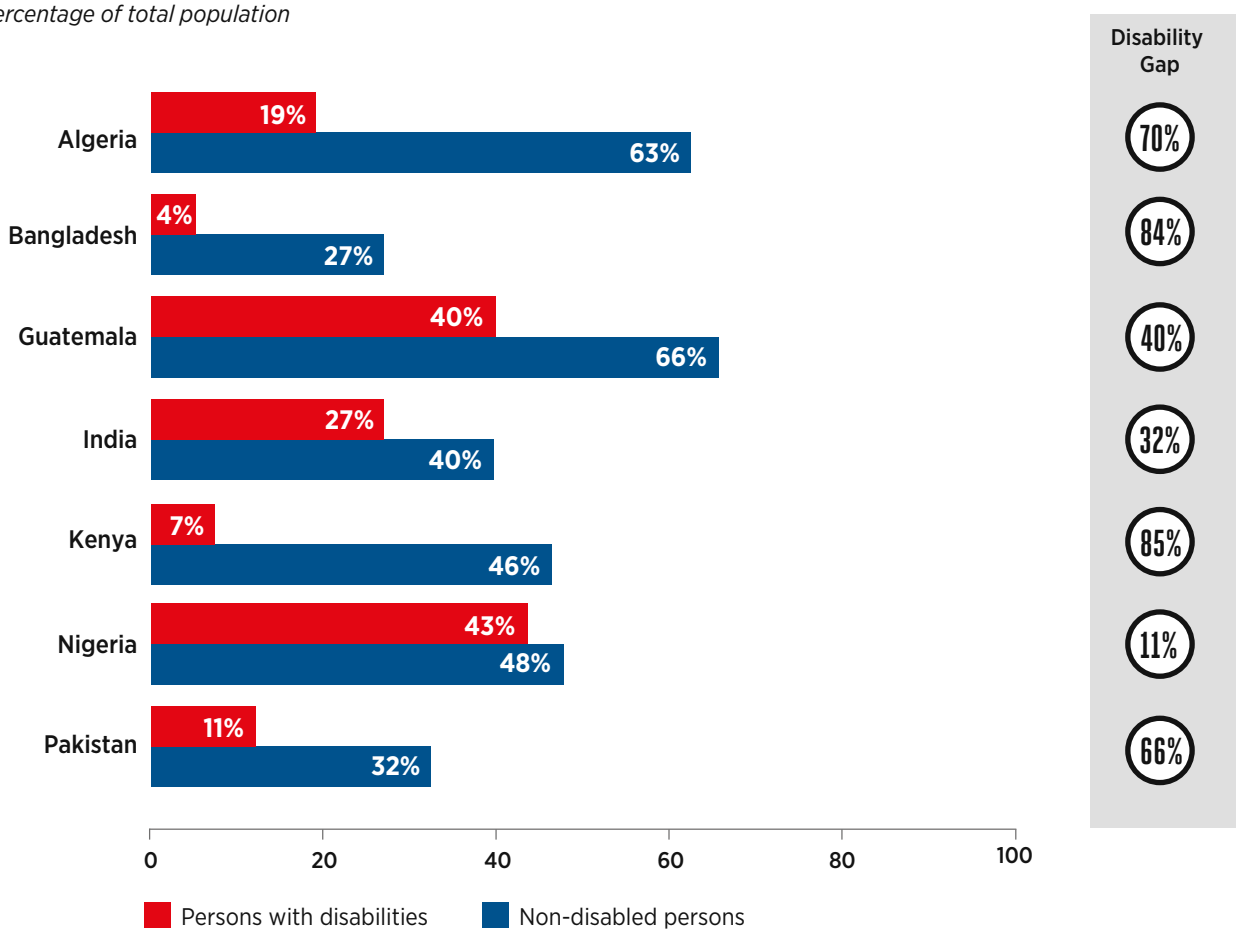
Mobile internet can offer life-changing benefits to persons with disabilities, providing the support they need to perform daily tasks independently. For example, persons who are deaf or have a hearing or speech impairment can use mobile internet to communicate with others using sign language in video calls or to access sign language interpreters on demand through mobile apps to communicate with the hearing community. Persons who are blind or have visual impairments can, for instance, leverage AT applications that use mobile internet and a camera to explore their surroundings and identify objects and faces independently.[14]

Despite this potential, mobile internet use is significantly lower among persons with disabilities than non-disabled persons. The disability gap in mobile internet use varies widely between the survey countries, ranging from 85 per cent in Kenya to 11 per cent in Nigeria[15] (Figure 4). The gap in Kenya is particularly striking given the disability gap in mobile ownership is just 11 per cent.

Figure 4

Disability gap in mobile internet use

Percentage of total population



Source: GSMA Consumer Survey 2020. Mobile internet use is defined as having used the internet on a mobile phone at least once in the last three months. Mobile internet users do not have to personally own a mobile phone, so the above figures also include those who used mobile internet on someone else's phone. Based on survey results for adults aged 18 and over. n=49–260 for persons with disabilities and n=900–1,866 for non-disabled persons.

In India and Guatemala, persons with disabilities reported a lower average number of weekly mobile internet use cases

Due to low levels of mobile internet adoption among persons with disabilities, only India and Guatemala had sufficient sample sizes to analyse mobile internet use cases. In these two countries, persons with disabilities reported using mobile internet less frequently and for a narrower range of use cases than non-disabled persons. However, the frequency of use cases differ across the two markets.

In Guatemala, social networking and instant messaging are the most common mobile internet use cases for both persons with disabilities and non-disabled persons. However, while 39 per cent of mobile internet users with disabilities reported performing these two use cases at least once a week, a higher percentage of non-disabled persons reported using them on a weekly basis (67 per cent reported using instant messaging and 64 per cent for social networking on a weekly basis).

In India, by contrast, online calls are the most common mobile internet use case among persons with disabilities, with 34 per cent of mobile internet users with disabilities reporting they performed this use case at least once a week. This is followed by watching free videos and using instant messaging, both at 31 per cent. For non-disabled persons in India, watching free videos online and making video calls were the most common use of mobile internet and were reported at comparable levels as persons with disabilities (42 per cent reported watching free videos online at least once a week and 41 per cent reported doing video calls at least once a week).

The intersection of disability and gender

Research by the United Nations and disability rights organisations has shown that women with disabilities are often among the most underserved and marginalised groups in society, subjected to discrimination and denied access to basic services.[16] Previous research by the GSMA Connected Women and Assistive Tech programmes has also shown that, in several countries, women with disabilities have lower levels of mobile ownership and mobile internet use than men with disabilities and non-disabled women.[17] This is also the case in the countries analysed in this report.

Mobile ownership

Women with disabilities in Guatemala, India and Pakistan have the lowest levels of mobile ownership compared to their male and non-disabled counterparts. However, in Guatemala, disability is a strong determinant of mobile ownership while, in India and Pakistan, gender plays a more significant role.

Smartphone ownership

Analysis of the India survey data shows that smartphone ownership is lowest among women with disabilities compared to their male and non-disabled counterparts.[18] In India, gender is a stronger determinant of smartphone ownership than disability; women with disabilities are 10 per cent less likely to own a smartphone than non-disabled women, and 27 per cent less likely to own one than non-disabled men. It is likely that social norms around gender compound this gap.

Mobile internet use

Mobile internet use is also lowest among women with disabilities in Guatemala and India. However, like mobile ownership, the importance of gender and disability varies between countries. In Guatemala, disability is a stronger determinant than gender, meaning that persons with disabilities are less likely to use mobile internet than non-disabled persons regardless of gender. However, in India, gender plays a greater role than disability, which means that women with disabilities in particular are less likely to use mobile internet.

Barriers to mobile internet use for persons with disabilities

Persons with disabilities are less aware of mobile internet than persons without disabilities

Awareness of mobile internet is a critical step in mobile internet use.[19] Despite a considerable increase in awareness of mobile internet globally, many people in LMICs are still not aware of mobile internet and the benefits it offers. Our analysis shows that this lack of awareness is more common among persons with disabilities. In all countries analysed, persons with disabilities are less likely to be aware of mobile internet than non-disabled persons (Figure 5).

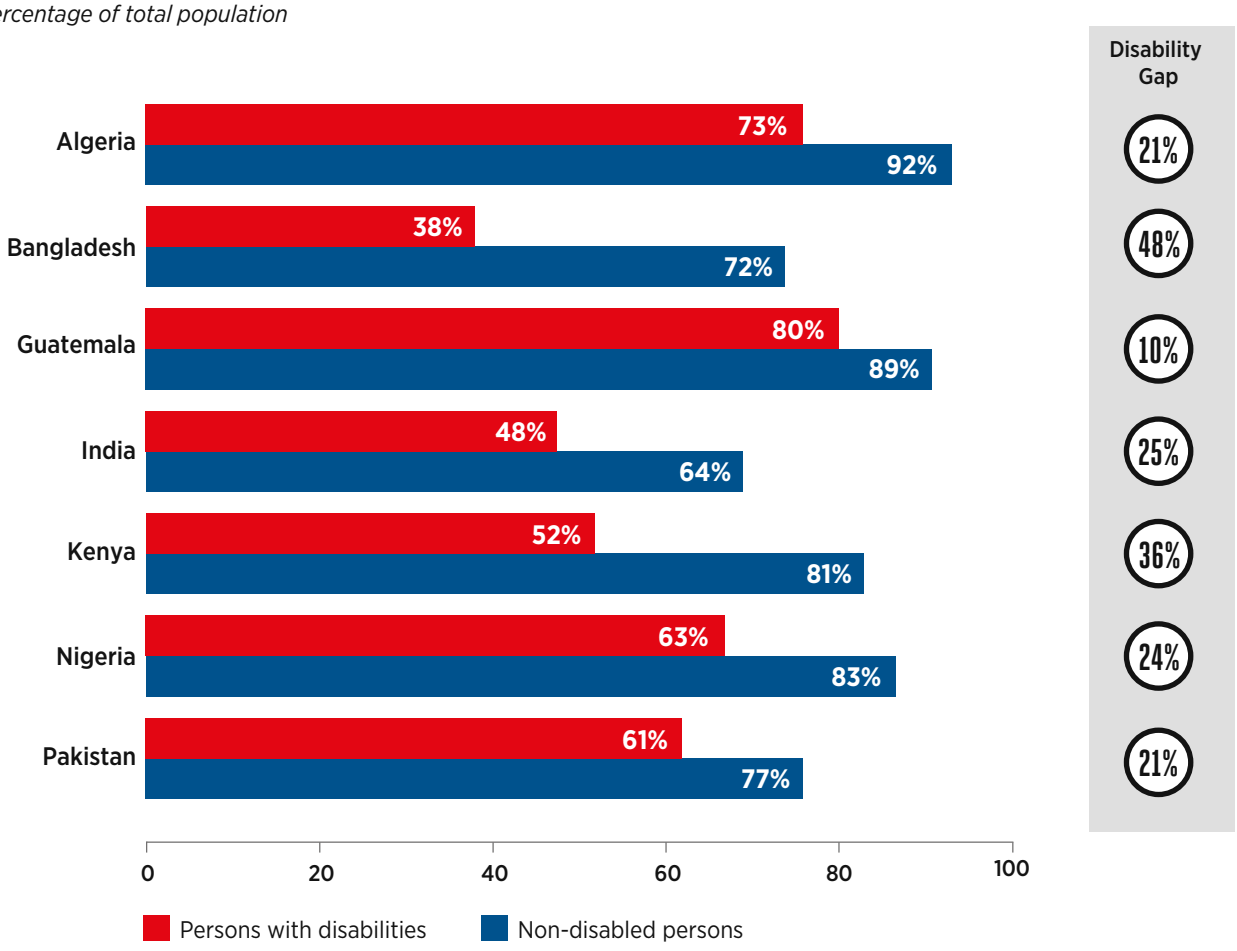
Bangladesh and Kenya have the widest disability gaps in mobile internet awareness. In Bangladesh, persons with disabilities are 48 per cent less likely to be aware of mobile internet than those without disabilities, and in Kenya this figure is 36 per cent (Figure 5). By contrast, the smallest disability gap in mobile internet awareness is in Guatemala, where persons with disabilities are 10 per cent less likely to be aware of mobile internet than non-disabled persons. Interestingly, persons with disabilities in Guatemala and Algeria have the highest levels of mobile internet awareness at 80 per cent and 73 per cent, respectively.

Countries with higher levels of awareness among persons with disabilities do not necessarily have higher levels of mobile internet use, however. Even though Guatemala and Algeria have high levels of awareness, there are still wide mobile internet disability gaps – persons with disabilities in Guatemala are 40 per cent less likely to use mobile internet than non-disabled persons, and in Algeria 70 per cent less likely. This implies there are other underlying factors preventing persons with disabilities from using mobile internet.

Figure 5

Disability gap in mobile internet awareness

Percentage of total population



Source: GSMA Consumer Survey 2020. 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=49–260 for persons with disabilities and n=900–1,866 for non-disabled persons.

In India and Pakistan, mobile users with disabilities who are aware of mobile internet report that the primary barriers to using it are literacy and skills

To address the disability gap in mobile internet use, it is important to understand the barriers that persons with disabilities face. Data from India and Pakistan show that a lack of literacy and skills is the greatest barrier for mobile users who are aware of mobile internet but do not use it. While literacy and skills is also a barrier for non-disabled persons in both countries, this barrier has a disproportionately negative impact on persons with disabilities. Research in several LMICs has also shown that children with disabilities face higher barriers to education, with as many as 40 per cent excluded from primary education.[20]

In Pakistan, more than half the respondents with disabilities (54 per cent) identify literacy and skills as the main barrier to mobile internet use compared to 43 per cent of non-disabled respondents. Relevance, safety and security are also important barriers, but only 18 per cent and 12 per cent of respondents with disabilities, respectively, ranked them as most important (Table 1).

Similarly, in India, 42 per cent of persons with disabilities identify literacy and skills as the single most important barrier to mobile internet use, while affordability and relevance, the second and third top barriers, were identified by only 19 per cent and 14 per cent, respectively (Table 1).

Table 1

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

Based on the single most important barrier to using mobile internet identified by mobile users who are aware of mobile internet but do not use it.

Ranking	Pakistan		India	
	Non-disabled persons	Persons with disabilities	Non-disabled persons	Persons with disabilities
1	Literacy and skills (43%)	Literacy and skills (54%)	Literacy and skills (40%)	Literacy and skills (42%)
2	Relevance (17%)	Relevance (18%)	Affordability (25%)	Affordability (19%)
3	Affordability (15%)	Safety and security (12%)	Safety and security (8%)	Relevance (14%)

Source: GSMA Consumer Survey, 2020.
Based on survey results for 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 on any device, despite being aware of mobile internet (excludes mobile users who are not aware of mobile internet). Percentages do not add up to 100 per cent as these are the top 3 barriers only.

Addressing the mobile disability gap

Key stakeholders in the mobile industry have a critical role to play in closing the mobile disability gap and ensuring digital inclusion for all. This includes policymakers, international organisations, non-governmental organisations, organisations for persons with disabilities (OPDs), mobile operators and other ecosystem players, including start-ups and device manufacturers.

Based on this research, we offer the following recommendations:

- **Understand the mobile disability gap and how to reach and serve persons with disabilities better.**

  Accurate and reliable disability-disaggregated data is a crucial tool for stakeholders to understand and address barriers to the digital inclusion of persons with disabilities. However, in most markets, disability-disaggregated data related to the access and use of mobile-enabled products and services is lacking, and has hampered digital inclusion efforts. It is critical that policymakers, the public and private sectors and digital players invest in, and collaborate on, accurate, ethical and effective data collection. This will help to monitor progress and inform the design of inclusive and relevant products, services and innovations for persons with disabilities.

- **Raise awareness of mobile internet and its benefits for persons with disabilities.**

  Awareness of mobile internet is lower among persons with disabilities than non-disabled persons, limiting their potential usage of mobile internet. To raise awareness of the

benefits of mobile internet and smartphones as an assistive technology, stakeholders can develop campaigns targeting persons with disabilities and explore partnerships with OPDs to reach persons with disabilities and showcase how mobile services are relevant to their lives.

- **Develop inclusive products and services that meet the diverse needs of persons with disabilities.**

  Once persons with disabilities are aware of mobile internet and its benefits, it is important that they have access to relevant products and services that meet their needs. It is important that stakeholders ensure that existing products are accessible, and that new content, products and services are created with persons with disabilities in mind (e.g. user-centred design and inclusive or universal design practices) to improve accessibility and usability.

- **Build the digital skills of persons with disabilities.**

  Many persons with disabilities are digitally excluded because they do not know how to use mobile and mobile internet in a way that meets their needs. Stakeholders can support the delivery of mobile digital skills programmes that train persons with disabilities (and their caregivers/relatives) how to use mobile internet to meet their needs. They can also explore partnerships with OPDs or other relevant organisations to teach persons with disabilities how to access and use accessibility features and mobile-enabled products and services. Stakeholders can use resources such as the GSMA's Mobile Internet Skills Training Toolkit (MISTT) to train people how to access and use mobile internet services, including accessibility features.[21] The toolkit is a visual, easy-to-follow guide that helps trainers demonstrate the functionality and value of the internet on internet-enabled mobile phones.

- **Ensure products and services are affordable for persons with disabilities.**

  Smartphones, which typically provide the most accessibility features and drive substantially higher mobile internet use, are often unaffordable for persons with disabilities. Mobile operators can design solutions to make internet-enabled handsets more affordable to persons with disabilities, such as innovative financing models and "data-light" accessible versions of mobile apps and services.

These recommendations offer some suggestions for stakeholders interested in closing the mobile disability gap. A more detailed set of recommendations for the mobile industry can be found in the GSMA's *Principles for Driving the Digital Inclusion of Persons with Disabilities*.[22]

Appendix 1:

Detailed methodology

This section details the methodology used for the *Mobile Disability Gap Report 2021*, which is based on an analysis of the results of the face-to-face consumer survey conducted by the GSMA in seven LMICs in 2020.[23] This research draws on insights from the survey to create a more accurate picture of the use of mobile devices and services for persons with disabilities in the following countries:

- Algeria
- Bangladesh
- Guatemala
- India
- Kenya
- Nigeria
- Pakistan

To understand the prevalence of disability in the population of these countries, the Washington Group Short Set of Questions were added to the survey. The subsequent analysis used the Washington Group questions as a framework to better understand the level of mobile inclusion of persons with disabilities in LMICs. Specifically, this research aimed to understand mobile phone ownership, smartphone ownership, mobile internet usage, usage of services, and the barriers to phone ownership and internet usage.

Defining disability: The Washington Group Short Set of Questions

The Washington Group Short Set includes questions on six core functional domains: seeing, hearing, walking, cognition, self-care and communication. To be considered a person with disabilities for the purpose 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 these core domains.

Table 2

Unweighted disability prevalence by country

	Total respondents in country	Total respondents with disabilities	Disability prevalence in the sample
ALGERIA	1,017	**51**	5%
BANGLADESH	1,035	**52**	5%
GUATEMALA	1,022	**122**	12%
INDIA	2,126	**260**	12%
KENYA	1,071	**67**	6%
NIGERIA	1,047	**49**	5%
PAKISTAN	1,048	**96**	9%

Survey sampling and fieldwork

In all countries, a nationally representative sample of the adult population aged 18 and over was selected. At least 1,000 face-to-face interviews were conducted in each country surveyed, with 2,000 interviews conducted in India. All surveys were interviewer-administered using handheld devices. Interviews were conducted with individuals in the local language and typically on the doorstep of the home due to COVID-19 safety precautions.

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 segment of lower income respondents were included.

Measuring the disability gap

A primary objective of the study was to understand the extent of the gaps in mobile ownership and mobile use in each country. To accurately calculate the gap between persons with disabilities and non-disabled persons, the following formula was applied:

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

This shows the gap in mobile ownership or usage relative to ownership or usage in the broader non-disabled population. In reporting observed statistics, the analysis adheres to the industry norm that subgroups should have a minimum sample of n=30. In some cases, disaggregating results by persons with and without disabilities results in sample sizes that are too small to make confident claims about the broader population. In those cases, countries have been excluded from the analysis and discussion in this report.

As this report aims to align with the broader work conducted by the GSMA on digital inclusion, more details on the calculations of the digital inclusion gap (focused on gender) in the countries surveyed are described in the Methodology section of the GSMA Mobile Gender Gap Report 2021.[24] However, due to a lack of third-party data on persons with disabilities, we were unable to obtain regional- or global-level modelled results.

For the methodology on use cases and barriers, please refer to the *GSMA Mobile Gender Gap Report 2021: Methodology*.[25]

Endnotes

1. World Health Organization. (2020). Disability.
2. The Washington Group on Disability Statistics is a United Nations Statistical Commission City Group that develops methods to improve statistics on persons with disabilities globally. It is comprised of representatives of national statistics offices with input from other UN agencies, international agencies, organisations of persons with disabilities (OPDs) 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/.
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6. Martiniello, N. et al. (2019). Exploring the use of smartphones and tablets among people with visual impairments.
7. See: https://www.washingtongroup-disability.com/question-sets/wg-short-set-on-functioning-wg-ss/
8. GSMA Intelligence, 2021.
9. Fundación ONCE and the ILO Global Business and Disability Network. (2021). An inclusive digital economy for people with disabilities; GSMA. (2019). Understanding the mobile disability gap.
10. ATScale. (2020). Product narrative: Digital assistive technology.
11. Universal design refers to products and environments that are designed to be accessible and used to the greatest extent possible by all people, regardless of their age, disability or other factors.
12. Martiniello, N. et al. (2019). Exploring the use of smartphones and tablets among people with visual impairments.
13. Since fewer persons with disabilities own a mobile phone than non-disabled persons, the number of respondents for smartphone ownership is lower, and in Bangladesh the unweighted sample size fell below the statistical threshold (n>30). Thus, only the results from the markets above this minimum threshold are presented and discussed.
14. GSMA. (2019). Understanding the mobile disability gap; GSMA. (2020). Opportunities for digital assistive technology innovations in Africa and Asia.
15. While the sample size in Nigeria is above the statistical threshold, it is noteworthy that it is low overall: n=49.
16. UN Women. (2018). The Empowerment of Women and Girls with Disabilities: Towards Effective and Full Participation and Gender Equality; Andrae, K. (n.d.). Disability and gender-based violence: ADD International's approach. ADD International.
17. GSMA. (2020). The Digital Exclusion of Women with Disabilities: A Study of Seven Low- and Middle-Income Countries.
18. Once again, as we progress into more in-depth analysis, sample sizes have decreased and fewer markets are presented in the discussion based on their statistical threshold. Only India had a statistically sufficient sample size to allow for disaggregation of smartphone ownership data by disability and gender.
19. Mobile internet awareness is defined as either having used the internet on a mobile phone before or being aware of both the internet and that it can be used on a mobile phone.
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