A4AI ALLIANCE FOR AFFORDABLE INTERNET

MEANINGFUL CONNECTIVITY

A New Standard to Raise the Bar for Internet Access

www.a4ai.org

Acknowledgements

This brief was written by Dhanaraj Thakur and Teddy Woodhouse, with contributions by Sonia Jorge, Eleanor Sarpong, and Calum Cameron. We are grateful for the numerous and important suggestions received over the last year from the A4AI/WF team, the A4AI membership and Advisory Council, and participants at various public conferences and events where we have presented previous versions of the paper.

Design by Kara Nash. Illustrations by Neema Iyer.

Suggested citation: A4AI (2020) "Meaningful Connectivity: A New Standard to Raise the Bar for Internet Access." Alliance for Affordable Internet.

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The Need for Meaningful Connectivity to the Internet

Introduction

According to the United Nations' (International Telecommunications Union) definition of internet use, approximately 54% of the world is online. This refers to internet use from any location/device within the last 3 months. The result groups everyone together — from those that only use a messaging app on a 2.5G mobile connection once a month to those video-conferencing on a high-speed broadband connection several times a day.

Not everyone connects to the internet in the same way. If policymakers only rely on this broad, binary metric, their efforts to improve access for all will not succeed. Indeed, ignoring the huge differences in how people connect will only exacerbate inequalities online and offline.

Last year, we proposed a new standard — meaningful connectivity — as a way for differentiating levels of internet access. This will help decision makers better enact policies that help people connect to an internet that is useful and empowering. With greater access and more meaningful connectivity, countries can start to scale their digital economies.

What is meaningful connectivity?

The meaningful connectivity standard is a tool to raise the bar for internet access and set more ambitious policy goals for digital development.

It sets minimum thresholds across the four dimensions of internet access that matter most to users. These are:

Regular internet use | *minimum threshold:* daily use
An appropriate device | *minimum threshold: access to* a smartphone
Enough data | *minimum threshold:* an unlimited broadband connection at home or a place of work or study
A fast connection | *minimum threshold: 4G mobile connectivity*

Our proposal was informed by a series of consultations with Alliance for Affordable Internet (A4AI) members, partners, and other stakeholders around the world in 2019 and early 2020. Based on that feedback, we refined and developed four proposed minimum thresholds to represent meaningful connectivity in terms of speed, devices, data, and frequency of use. We then conducted a series of research exercises including nationally representative surveys of approximately 6000 people and in depth (focus group) discussions with over 120 people in three countries to test the feasibility and utility of the thresholds.

This short paper reports those results, illustrates how the meaningful connectivity metric can be applied in practice, and suggests what kinds of targets policymakers can use to achieve meaningful, universal access.

Criteria for a Useful and Feasible Standard

Our approach focuses on the four main technical features of a person's connection to the internet that influence how meaningful it is. We used several criteria to make the standard effective. These included:

- ***Evidence-based*** – The development and proposed metrics used in the definition should be based on robust evidence including, where necessary, new research.
- ***Measurable*** – There must be a feasible way for governments and others to measure the new definition using existing tools.
- ***Relevant*** – The standard must be useful for policymakers to establish a minimum threshold while being forward-looking. Thus, policymakers can act based on local context. The minimum threshold for each of the four dimensions should be flexible enough to change over time as new technologies and ways to use them emerge.

We also assume that **meaningful connectivity implies access to the open internet** and precludes artificial (either economic or political) restrictions, such as platform-exclusive zero-rating or excessive censorship.

In addition, we note the need for a gender-disaggregated metric. That is, metrics that can measure the differences of people's experience based on their gender. While the global digital gender gap is significant at an estimated 21%, we need more gender-disaggregated data across all countries. Therefore, **any new standard for internet use such as meaningful connectivity should similarly be gender-disaggregated**, and the policies informed by this standard should be gender-responsive.

A4AI's Supporting Research

To test the feasibility and illustrate the application of the meaningful connectivity standard, we relied on parallel research conducted by A4AI/Web Foundation. This includes nationally representative household surveys in three countries (Colombia, Ghana, and Indonesia) with approximately 6000 respondents in all. The surveys were complemented by four focus group discussions in each country with participants of different backgrounds in terms of age, location, education, gender, and income levels. These data were used to determine the use cases for the internet which in turn helped to shape the final thresholds. The data then also help to illustrate how the standard can be calculated for each country (see the Annex for more details on the surveys and other research used to develop the standard).

A New Standard for Internet Use

Getting the Right Speed	Having an Appropriate Device	Connecting with Enough Data	Using the Internet Regularly

1. Getting the Right Speed

The quality of someone's connection can make or break their experience. For meaningful connectivity, a user's connection must be reliable, of sufficient bandwidth, and with a low enough latency to enable them to experience the wealth of the internet's potential. Video content is part of this experience.

Video content is what people want to access and is also data intensive.. Field research conducted by A4AI/Web Foundation confirms YouTube, Facebook, WhatsApp, and Instagram as the most popular online applications — all of which thrive on visual content. This matches with other research which includes photos and video as prominent features in a user's online experience and studies of the changing dynamics of internet traffic globally. These are data-intensive activities and require a far greater bandwidth than text-based communication alone. Many users experience speeds and connections that make this content an occasional luxury or beyond their means entirely.

When we asked users about what speed they wished to have, it wasn't measured in megabits per second but was based on what they wanted to do online and how fast they wanted to do it. To watch videos without buffering. To talk to friends and family with no more latency than they'd experience being in the same room. To feel like they're sharing a moment in time with other users. These activities are not possible with basic connectivity. To reach meaningful connectivity, the standard must be higher.

The network's technological generation can serve as an easily identifiable standard for a mobile internet connection's quality. While users may not know exact bandwidth or latency of their connection, many devices indicate the connection strength with the technology used: typically as 3G, 4G, or 5G in the top-right corner of the screen. An easily-identifiable standard for this threshold matters for consumers' ability to advocate for better and more affordable services. Users, companies, and governments alike know and recognise the terms 3G, 4G, and 5G: this is the language they use and the language that best enables consumer advocacy. These insights encourage us to adopt a standard that does not talk in bitrates or latencies but something more simple.

The formal 3G standard (IMT-2000, in ITU-R M.1645) holds no exclusionary boundary at the low end of bandwidth requirements. In addition, it was not foreseen to carry speeds much above 10Mbps, even with technological enhancement. This matches the experiences of 3G users in low- and middle-income countries, who rarely, if ever, see average download speeds approaching that 10Mbps. (See the table, right, as a sample of these speeds.) These users also see much higher latency rates, often approaching 100 milliseconds and risking reliable video calling. This is why we call for universal access to 4G, which is most-nearest defined as IMT-Advanced by the ITU (see ITU-R M.2134).[1]

Median Mobile Internet Download Speeds, 2019	
Colombia	**3.43** Mbps
Ghana	**0.92** Mbps
Indonesia	**1.11** Mbps

Source: Measurement Lab, 01.01.2019–30.09.2019

The number of 4G (or higher) internet users serves as one of the measures of meaningful connectivity in a country. A 4G connection provides the technical minimums that should enable a user to stream video, share content, and participate in the world's discussions. and offers a realistic but substantial threshold for many low- and middle-income countries. This threshold importantly looks at the users on this network, not just the network's coverage. 4G still remains beyond the financial means of many users, especially the urban poor who would be counted in a coverage statistic rather than subscription measure.

MINIMUM THRESHOLD

Using the internet with a 4G connection

	COLOMBIA	GHANA	INDONESIA
% of persons who have a 4G connection (2020)	**43.1%**	**6.3%**	**26.6%**

Source: Alliance for Affordable Internet, 2020

2. Having an Appropriate Device

One of the problems with the current definition of internet use is that no distinction is made to the type of device a person uses to get online. Meaningful connectivity facilitates both creation and consumption of content and full participation in the digital world. Currently, the wide range of devices which we use to go online — from a feature phone to a laptop — enable varying levels of creation and consumption.

In order to determine what is an appropriate device, we relied on the research data to understand internet use cases among respondents from a range of socio-economic and cultural backgrounds. The

[1] This mirrors the call for universal 4G access as part of the UN Broadband Commission Working Group on Broadband for All: A "Digital Infrastructure Moonshot" for Africa; measured as 90% penetration of population aged 10 or older.

survey and focus group discussions revolved around the main characteristics of a device they felt were important for their own productivity and meaningful connectivity.

The main features of a device they considered to be important included portability, having the ability to use productive apps, and multifunctionality (such as voice calls, photo/video, and apps). Participants highlighted voice recognition as a useful feature — for example, for sending voice notes — which could be relevant for those with differing levels of literacy. In addition, smartphones are often a particularly relevant means of providing access to services to some people with disabilities.

Portability was another important feature for users. With a device that could fit into a pocket, focus group participants talked about mobile phones — and specifically smartphones — as holding a practical advantage over bulkier computers that offered less privacy and greater limitations on frequency and location of use.

Many participants also mentioned having a good camera and audio functions as being important. The results of the national household surveys also pointed to the frequency of taking and posting photos as one of the main uses of their device (72%). This also matches with respondents' preference and frequency for consuming information in video formats over audio- or text-based resources. Having features like a camera, portability, and multifunctionality on one device meant that almost all the focus group participants (across all countries) noted that a smartphone was the most critical device for meaningful connectivity.

By smartphone we are referring to a device that has a minimum screen size of 3", a touch screen, the ability to install apps (i.e., with no restriction on the number of apps by the app store), and a camera. We recognize that mobile devices are continually advancing with new form factors and capabilities — something that smartphone users themselves recognise, meaning that the use cases mentioned above may also expand.

Smartphones are not the only way people connected to the internet, but they are the most frequently used (according to 90% of internet users across the surveyed countries). Some respondents also mentioned laptops, tablets, and other devices when using the internet: however, only a small number of respondents (0.6%) only used those devices to connect to the internet without a mobile phone. Thus, we focus on smartphones as they provide a key set of features that people want, and they are the most popular device choice. **The demand for and functionality of smartphones therefore serves as another threshold when considering meaningful connectivity.**

Smartphones may importantly play a crucial role in reducing the digital gender gap and opening up the internet for the most vulnerable. In the three countries we conducted research to test the standard, women were more than twice as likely to own or have access to a smartphone (67%) than to have used a desktop, laptop, or tablet computer once in the past three months (34%). Indeed, mobile phone ownership has a substantially smaller gender gap in these three countries (3%) than ownership of a desktop or laptop computer (34%) or even use of a desktop, laptop, or tablet device (32%). Supporting individual smartphone ownership, rather than household-level desktop ownership, may hold additional gains in empowering women's autonomy over their internet use and habits.

In addition, smartphones offer potential for users with lower literacy. The meaningfulness of internet access comes in many ways, and literacy should not be a means to exclude online participation. Indeed, much work is being done to make devices more appealing and more rewarding for users who have lower literacy. Many mobile phone users with lower literacy build their skills through their device. The value of this standard should not just be in raising the bar for internet service but also in increasing the number of people who can connect to and use the internet.

MINIMUM THRESHOLD

Connecting with a smartphone

	🇨🇴 COLOMBIA	🇬🇭 GHANA	🇮🇩 INDONESIA
% of persons who own or have access to a smartphone (2020)	**70.9%**	**32.0%**	**76.9%**

Source: Alliance for Affordable Internet, 2020

3. Connecting with Enough Data

What is the value of a gigabyte? A fibre optic cable measures a gigabyte in seconds: a low-income internet user experiences a gigabyte in weeks, possibly months. Although just over half the world's population is online, a wide data disparity exists between those with fixed, unlimited connections and those connected only at the margins.[2] The value of internet access is defined by how much of our lives can be conducted online: in turn, the value of internet access is defined by how much data we can consume and contribute online.

Data scarcity — that is, the limitations and unreliabilities around internet access — diminish the meaningfulness of a user's connection. Users connected at the margins may not know the speed of their connection, but they'll know the amount of data that they can afford on a regular basis. Focus groups conducted by the A4AI/Web Foundation across the globe talk about rationing personal data consumption, deferring aspects of online life to Wi-Fi hotspots, and using other creative methods to stretch the possibilities of each megabyte of data they have. Data scarcity dominates the experience of users on the margins: in turn, this limits the potential for internet access to ever become a meaningful resource in their lives.

Fundamentally, public access points and unlimited connections at the everyday locations in our lives — at home, at work, at places of study — become anchors of our connectivity. Across our surveys, each day over half (61%) connect at home, 26% connect at their workplace, and 14% at schools and universities each week day.

[2] By unlimited, we refer to broadband access services with no significant cap on data use, although in practice these are typically subject to certain fair use policies that might limit use to a very high level which most people will not reach (e.g., 100 GB or more). In addition, for our purposes we take a technological neutral approach when it comes to ways in which people connect to such services (e.g., may be fixed or wireless).

This point reaffirms the value of public access options as a strategy for expanding internet access. We realise that the goal for unlimited broadband to each household in the world would be an unmanageable task in the next decade. However, it is not beyond our reach to make sure everyone is able to access an unlimited broadband connection somewhere on a daily basis. Ideally, this connection will come with a sense of security, privacy, and reliability for the user as well.

Public access options should complement a robust agenda for greater connectivity at home. Time and time again, internet users in our focus groups mentioned the essential value of their household connection and seeing mobile internet and public access points as an extension or 'top up' upon what they had at home. Four of every five (84%) internet users in our household surveys connected from home on a near-daily basis. Home connectivity is popular among those who have it and desirable for those still unconnected.

Connecting from home offers a number of benefits for users. Household connectivity offers substantially greater user privacy, enabling users to access sensitive information on personal issues. It also holds the potential to substantially reduce the digital gender gap in regions where expectations around women's participation in public life and presence in public spaces may limit their ability to use public access points. Household connectivity also holds the greatest ability to free a user from the mindset of data rationing.

The Covid-19 pandemic reaffirms the essential character of unlimited broadband connections to a household. Such connections completely alter the utility of internet access and enables multiple users to benefit from internet access at the same time, when more than one device is available. Many users in high-income countries today are able to live life more closely to normal exclusively because they have access to high-capacity, broadband connections at home.

Meaningful connectivity can be measured as the percentage of a country's population with access to an unlimited broadband connection at home or a place of work or study.[3] These locations note the points of common access for internet users across the world, and this definition is technologically-neutral and can include wired and wireless solutions. Fixed access to each household may be far from reality in many countries; however, governments can prioritise broadband access at priority institutions such as schools, libraries, and other public buildings to create anchor points of high-capacity connectivity for its occupants. These anchor points, even if not fully unlimited in terms of data consumption, can provide essential, high capacity access for users and reduce data scarcity. By reducing data scarcity and increasing the number of reliable points of connectivity, countries can begin to see the impacts of internet access becoming part of everyday life for much of its population.

If realised, we anticipate this threshold would not only power growth for individual users but social transformations as internet access becomes a reliable expectation in the worlds of education, health, and business. This is how low- and middle-income countries can accelerate their digital economies.

[3] We define 'a place of study' as inclusive of schools, colleges, universities, and libraries.

MINIMUM THRESHOLD

Accessing an unlimited broadband connection at home or a place of work or study

	COLOMBIA	GHANA	INDONESIA
% of persons who use the internet from an unlimited broadband connection at home or a place of work or study[4] (2020)	**43.3%**	**3.5%**	**25.5%**

Source: Alliance for Affordable Internet, 2020

4. Using the Internet Regularly

Another characteristic of importance is the frequency with which people can connect to the internet. Being connected frequently can support greater use and productivity. More active internet users in our household surveys across all three countries saw a greater and more positive influence on their personal income and had a more positive opinion of the internet's capacity to inform people.

The current UN/ITU definition of internet use is broad, covering anyone who has used the internet at least once in the last three months. The question is, how often is often enough? In our focus groups, one point of discussion was around using the internet for creative and productive purposes. Here participants noted the importance of daily use to support these kinds of activities. This frequency was also noted as important for regular access to information; we can see how this can be particularly important in national disasters or public health crises. Finally, people said that to have really meaningful communication with family and friends, using relevant apps on a daily basis was important. Indeed, on average, across our country surveys 54% of internet users are online every day.

Based on these insights, in order to differentiate between levels of internet use, we recommend a minimum threshold of using the internet at least daily.

MINIMUM THRESHOLD

Using the internet daily

	COLOMBIA	GHANA	INDONESIA
% of persons who use the internet daily (2020)	**46.1%**	**8.3%**	**66.8%**

Source: Alliance for Affordable Internet, 2020

[4] For clarity, the Web Foundation survey questions used for testing the standard asked if someone had fixed internet access at work or at an educational institution (school, university, etc.). We have calculated these estimated numbers assuming that fixed connections at work or at an educational institution are unlimited or of sufficient capacity to be considered.

Bringing it all together: Meaningful Connectivity As a New Standard for Internet Use

It is no longer sufficient to simply consider how many people are online. As more of human life is moving online, our policy goals must adapt to consider the quality of connectivity available to all.

Our research has suggested that four dimensions hold the greatest promise in benchmarking when an individual has the means for meaningful connectivity: that is, when they have daily access to the internet through a smartphone, with a 4G mobile connection and a reliable connection at home or their place of work or study that is unlimited in its volume.

That is not to say that a user that lacks any one of these dimensions cannot meaningfully connect to the internet. Instead, as a policy tool, these are the four dimensions that governments and all interested stakeholders should prioritise to advance an ambitious connectivity agenda that leads to further achievement of related development goals, both economic and social.

Applying the Meaningful Connectivity Standard in Three Countries: Colombia, Ghana, and Indonesia

Using the data collected from household surveys conducted in each of these three countries, we applied the meaningful connectivity standard in practical terms and can now understand its comparative value to the current definition of internet use.

To do this we chose a relatively simple approach, which is to take the average of all four thresholds to determine the meaningful connectivity score in a country. These are all weighted equally: we assume each threshold is equally important. This approach also means that the score calculated at the country level is not a direct measure of individual meaningful connectivity. Rather, the score takes an average from the indicators to note there is national progress made when any of the four dimensions improves and that connectivity can still be meaningful at the individual level even if a country is lacking in a particular threshold.

Noticeably, the meaningful connectivity score is lower than the proportion of the population using the internet in each country. This is not an indication of rolling back progress already made: this is setting more ambitious horizons for internet access and for economic and social development agendas.

People should not have to settle for being counted but underserved. By setting a standard that guarantees enough speed, enough data, with an adequate device, and sufficient regularity for the internet to be an important part of someone's life, these thresholds ensure that internet access is not just an end in itself. They also help highlight where an emphasis on older technologies, such as 3G-only smartphones, can impede long-term progress. Internet access is most valuable when it can be used a means to achieve broader, and more important, social and economic goals.

This standard will hopefully reinvigorate the importance of internet access as part of a country's political agenda. Internet access is not just another indicator: it can, with the right conditions, be an engine to reach a range of national priorities and Sustainable Development Goals. Internet access matters when it matters to the people it connects.

Meaningful Connectivity and Internet Use

	COLOMBIA	GHANA	INDONESIA
% of population who use the internet (ITU definition, 2020)	**84.1%**	**30.3%**	**77.6%**
Average meaningful connectivity score (2020)	**50.9%**	**12.5%**	**48.9%**

Source: A4AI 2020

Meaningful Connectivity: Next Steps

The value of this tool is in measuring and tracking progress over time. We acknowledge each country is at its own stage and direction of development. This standard therefore should help guide the gradual implementation of policy actions and the regular review of broadband policy targets. As such, we encourage governments to embed these standards into their statistical practices and revisit them on an annual basis.

While policies should be specific to each country, we anticipate that, in general, the process for policymakers to define milestones towards achieving meaningful connectivity would incorporate a number of initial steps (see below).

Suggested Initial Steps for Policymakers

1. Build a broad consensus with national stakeholders from across public and private sectors, as well as from civil society, to discuss the adoption and applicability of this standard.
2. Review the national policy and regulatory environment to assess the current state of connectivity policy and targets, especially those related to meaningful connectivity.
3. Build and strengthen the capabilities of statistical institutions to measure the standard and to incorporate suggested indicators into their data collection processes. Data collected must be gender-disaggregated.

Further guidance from A4AI on both the policy and methodological implementation of meaningful connectivity will follow in the coming months. This guidance may also cover related

issues — such as digital skills, cybersecurity, and relevant content — that are important demand-side interventions to help create the motivation for users to use the internet on a daily basis.

This standard is the culmination of a number of months' work; however, we hope it is only the opening for years of effective broadband policy-making.

Annex: Methods Summary and Data Sources

Process and Consultative Approach

Given the scale and ambition of this new standard we wanted to get feedback and suggestions from a range of viewpoints. We hosted several presentations on the proposed thresholds starting in mid-2019 at academic, industry, and civil society events and collected feedback from A4AI members, the A4AI Advisory Council, other stakeholders, and the public.

Versions of this brief and the proposed thresholds have also been shared with the A4AI membership and its Advisory Council to give additional insights and refinements to the standard. This incorporates the perspectives of A4AI's multi-stakeholder membership: balancing public, private, and social sectors' analysis of the realities of connectivity today and where we could be in the future. These discussions have made the standard stronger, and we thank all members and partners who have given feedback on drafts.

National Surveys and Other Methods

The data for the thresholds used in this paper are drawn from a series of nationally representative household surveys as well as supporting qualitative research. The surveys were conducted between September 2019 and February 2020 in 3 countries: Colombia, Ghana, and Indonesia with the following sample sizes. In each case a stratified random sampling approach was used with a maximum sampling error of 3 percentage points. The sample results are as follows:

Country	**Male**	**Female**	**Total**
COLOMBIA	723	827	1550
GHANA	1114	1186	2300
INDONESIA	1022	1018	2040
Total	2859	3031	5890

These surveys were carried out by the A4AI/Web Foundation (as part of its Women's Rights Online program) in partnership with the Instituto de Estudios Peruanos (IEP), the University of Ghana, and the University of Indonesia.

In addition, we also completed four focus group discussions in each country in which participants discussed various issues related to meaningful connectivity. Participants included persons of different backgrounds in terms of age, location, education, gender, and income levels. All focus groups were conducted between November 2019 and January 2020.

Sample Survey Questions

The following survey questions were included as a part of a separate module dealing with meaningful connectivity in each national survey. As the surveys themselves were part of the WRO program, most of the questions focused on women's rights issues online. Here are the questions related to meaningful connectivity, each of which is linked to one of the thresholds:

Percent of persons who have a 4G connection

Q. What type of connection do you have on your mobile device?
[READ OUT -SINGLE CODE ONLY]

4G	1
3G	2
EDGE	3
GPRS	4
Other - Specify _____	5
Do not have a mobile phone	6
Don't know (DO NOT READ OUT)	9

Percent of persons who own or have access to a smartphone:

Q. Do you personally own or have access to a smartphone (3G/4G, internet/web-enabled mobile phone e.g. Blackberry, Android, iPhone)? SHOW CARD & READ OUT. SINGLE CODE ONLY.

Yes	1
No	2
Don't know (DO NOT READ OUT)	9

Percent of persons who use the internet from an unlimited broadband connection at home or a place of work or study

As noted above we used a combination of survey questions for this threshold, however we recommend that these be combined in future measures of the standard.

Q. How do you normally access the internet? [*Note: encircle the code in the column on the type of access*].
[READ OUT. MULTI-CODE OK.]

		Yes (1)	No (2)
A	Mobile phone (e.g., data plan)		
B	Public wifi		
C	USB dongle or modem		
D	Fixed internet connection at work, school, or elsewhere		
E	Fixed internet connection at home		
F	Others, please specify		

Q. In a typical month of internet use, what is the total amount of **mobile internet data** you purchase? [*Note - respondents may only know about daily/weekly purchases so please calculate monthly figure*] [READ OUT — SINGLE CODE ONLY]

A	Less than 100 MB / month	1
B	Between 100MB and 500 MB / month	2
C	Between 500MB and 1GB /month	3
D	Between 1GB and 2 GB /month	4
E	Between 2GB and 5GB /month	5
F	Between 5GB and 10GB /month	6
G	Above 10GB /month	7
H	Unlimited - internet access anytime with no cap	8
I	Do not purchase data - I get internet access up to a certain amount (specify amount _____)	9
K	Do not purchase data - internet access is unlimited (specify source _____)	10
L	Don't know	99

Q. In a typical month of internet use, what is the total amount of internet data you purchase for your **home internet service**? [READ OUT — SINGLE CODE ONLY]

A	Less than 100 MB / month	1
B	Between 100MB and 500 MB / month	2
C	Between 500MB and 1GB /month	3
D	Between 1GB and 2 GB /month	4
E	Between 2GB and 5GB /month	5
F	Between 5GB and 10GB /month	6
G	Above 10GB /month	7
H	Unlimited - internet access anytime with no cap at home	8
I	Do not purchase data - I get access up to a certain amount (specify amount _____)	9
J	Do not purchase data - internet access unlimited (specify source _____)	10
K	Do not have a home internet service	11
L	Don't know	99

As mentioned above, here we include persons who report having either a fixed connection at work or their place of study, or an unlimited mobile internet data plan, or an unlimited home internet service.

Percent of persons who use the internet daily

Q. In the past 3 months, where and how often, if ever, have you used the internet from the following location(s)i? [READ OUT. MULTI-CODE OK.]

		At least once per day	Almost every day (5-6 days a week)	A few days a week (2-4 days a week)	A few days a month (up to 10 days a month)	Almost never (1-2 times in the past 3 months)	Never	Do not know (DO NOT READ OUT)
A	Home							
B	Work							
C	Place of education (e.g., school, university)							
D	Another person's home							
E	Publicly accessible internet facility which is usually free (e.g., library, post office, government offices, community centers, etc.)							
F	Publicly accessible internet facility which is usually paid (e.g., cybercafe, hotel, airport, other paid WiFi hotspots, etc.)							
G	Other (please specify _____)							

We include those report using the internet from any of the above locations "At least once per day"

Finally, while we don't provide specific guidance on survey design here, there are other resources for this.

Calculating the Standard

We compared the results from each threshold (e.g., number of people reporting they own or have access to a smartphone) against the sample size to determine the percentage of the population (within the margin or error) that meets the threshold.

Next we calculated the simple mean of all four thresholds for each country. Thus, no weights were used and each threshold is treated as equally relevant when understanding meaningful connectivity. This average then provides us with the overall meaningful connectivity score for each country. The score can be used to understand the difference between meaningful connectivity and internet use within a country.

More importantly, policymakers and others can explore individual thresholds within a country to identify key areas for intervention and support.