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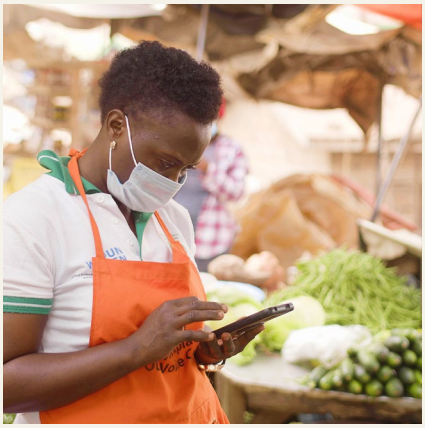
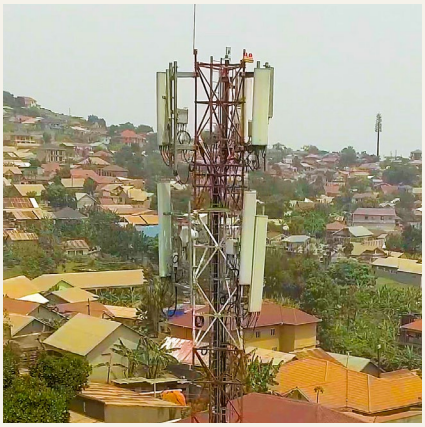




The Inclusive Internet Index 2021

Executive summary

Written by

The Economist INTELLIGENCE UNIT

Commentary by Facebook

As the covid-19 pandemic began, the future arrived seemingly overnight for people around the world. For those equipped with digital skills and access to high-speed, affordable Internet, life proceeded in a recognisable, if altered, fashion. Respondents to the Value of the Internet survey said that essential elements of their life such as socialisation, work and education had shifted significantly to online channels. As they relied upon the Internet more, their expectations for quality content and services grew concurrently. Nearly 70% of people around the world believed that their increased Internet usage in all aspects of life signified a "new normal" that will continue indefinitely in the future.

However, as the writer William Gibson once noted, "the future is already here—it's just not very evenly distributed." This year's Inclusive Internet Index (3i), like others before it, illustrated a stubborn digital divide preventing billions of people, most prominently in low-income and lower-middle-income countries, from enjoying the full benefits that the Internet has to offer.

Paradoxically, in this new era, the regions of the world without widespread access to quality Internet have become the most dependent upon it. For example, in Sub-Saharan Africa, where broadband quality and availability is generally quite poor, people were more likely than those in Europe to say that someone in their household relied on online education due to school closures. And people in low-income and lower-middle-income countries were more likely than those in wealthier countries to predict that they will continue to use online channels for education even after the pandemic has subsided. Indeed, as the importance of having access to the Internet has grown, the consequences of being offline have grown even larger.

The results of the 3i and Value of the Internet survey have reinforced the importance of Facebook's efforts to bring connectivity to underserved communities around the world. We invest in things like subsea cables, edge network infrastructure, open transport networks, and new access technologies, solutions and business models that support connectivity and generate billions of dollars[1,2] in economic development and new jobs in regions where connectivity is needed the most.

Over the past several years, the digital divide separating the well-connected and the under-connected has shrunk, albeit at an unacceptably slow rate. But interestingly, it has also changed in character. What was once a coverage gap marked by insufficient network coverage has evolved in many places into a "usage gap" marked by people unable, unwilling or

[1] David Abecassis et al., "The impact of Facebook's connectivity initiatives: sub-Saharan Africa and ASEAN", Analysys Mason, July 2nd 2020.

[2] "Assessing the Contribution of Connectivity Investments to the Development of Latin American Societies", NERA Economic Consulting, May 22nd 2020.

uninterested in using the Internet. The 3i reveals significant decline in readiness, a function of digital skills and people's perceptions about trust and safety online, and in relevance, a function of the value people derive from the content available to them online. The decline in these metrics during the pandemic illustrate new obstacles that policymakers, industry leaders and civil-society organisations must work together to overcome.

The results from this year leave us with many questions that we look forward to addressing next year. We are interested to see how people's Internet usage patterns look a year from now, especially for work and education, and how they compare to our pandemic-driven experience and expectations today. We want to know if the changes we saw this year with Internet behavior and perceptions will endure or if they will revert to the pre-pandemic world. We are interested to see if economic fallout from the pandemic affects Internet affordability or network deployment, and how new business models might evolve as a result. We want to know if policy interventions from governments have made an enduring impact on Internet inclusiveness and what lessons can be gleaned from them. And we are hopeful that the data reveals a future that is more evenly distributed and benefits of the Internet more evenly shared than they are today.

To see the launch and expert panel discussion of this year's report, go to: https://vimeo.com/535952812

Examples of the Internet's importance for digital inclusion can be seen here: https://www.youtube.com/playlist?list=PLWcA1X_ofRr8EOmdGsfNCGCOrKnuc64yC

For additional commentary from Facebook, go to: https://about.fb.com/news/2021/04/how-the-covid-19-pandemic-reinforces-the-need-for-internet-inclusion/

Introduction

Without affordable, high-bandwidth connectivity, people cannot undertake routine activities like education and work. The digital divide is amplifying economic inequality more than ever.

An historic pandemic makes connectivity more vital than ever.

In the early days of 2020, few could foresee that a once-in-a-century pandemic would make the Internet more vital than ever in enduring the hardships to come. As lockdowns swept the globe, entire sectors shifted to remote work nearly overnight. Children tuned into online classes to keep their minds engaged. Governments built virtual contact-tracing systems and disbursed stimulus payments through digital mechanisms. Unprecedented numbers of people relied on the Internet to access information, social support, and educational and work opportunities.

The Internet's ability to foster societal resilience in the face of the pandemic is, in one sense, a cause for celebration. Approximately half the world's population is now connected—a significant achievement. But given how essential the Internet has become for life under lockdown, the task of connecting those who remain out of reach—approximately 3bn people—is now more urgent than ever. Without affordable, high-bandwidth connectivity, people cannot undertake routine activities like education and work. The digital divide is amplifying economic inequality more than ever.

Against this backdrop, the Inclusive Internet Index, produced by The Economist Intelligence Unit and commissioned by Facebook, assesses countries on the ability of their citizens to use the Internet for personally and socially enriching purposes. With the covid-19 pandemic marking a turning point in Internet use, the index highlights how online behaviours have changed, pinpoints broader trends in inclusion, identifies strong and fast-improving performers, and flags areas of stagnation or decline. This year's index ranks 120 countries across four domains: availability, affordability, relevance and readiness (see Figure 1 for more detail on what each domain measures). It is accompanied by a survey of over 5,800 Internet users to understand the ways in which they draw value from the Internet and their expectations for the future of connectivity. The full index data, survey results and research methodology are available for download at theinclusiveinternet.eiu.com.

Figure 1: Inclusive Internet Index domains

Availability	Affordability	Readiness	Relevance
Usage	Price	Literacy	Local content
Quality	Competitive environment	Trust & safety	Relevant content
Infrastructure		Policy	
Electricity			

Key findings

The state of Internet inclusivity in 2020

Most countries saw gains in Internet inclusion, driven largely by improvements in availability.

The majority of countries in this year's index—77 out of 120—saw improvements in Internet inclusion over the last iteration, including nine of the 15 low-income countries (LICs) included.[3] The countries whose scores improved the most included both developed and developing countries, with improvements spread throughout the four index domains. Top gainer Latvia rose 13 spots to 32nd place, driven by steady growth across the board. Slovakia, Uzbekistan and Kenya showed particularly striking surges in readiness, while Costa Rica benefited from a large jump in availability, with big improvements in government and private-sector initiatives to make Wi-Fi available. Egypt, meanwhile, saw a significant bounce in relevance, largely driven by advances in online trust and safety.

At a global level, availability saw the biggest increase overall, boosted mostly by improvements in broadband quality; big gainers in this metric include Thailand, the United Arab Emirates and China. Of particular significance during a pandemic that put incomes under extraordinary strain were improvements in the affordability domain, which rose everywhere except North America.

Deterioration in relevant content and online trust raises alarms, as the pandemic has made these factors more crucial than ever.

Readiness inched forward but gains were held back by a decrease in trust in many countries—in particular trust in government websites and apps, ostensibly a key source of information in the midst of a pandemic. Ecuador, Romania and Estonia suffered the biggest declines in this metric, while some countries saw improvement, with Jamaica and Slovakia notching the biggest gains. Relevance tumbled, largely due to widespread decreases in how much survey respondents value online information about personal finances and health and fitness. As this is knowledge that should presumably be drawn upon more during lockdowns, this decline suggests that the heightened expectations of users for timely, relevant and trustworthy information are not necessarily being met by the content available to them.

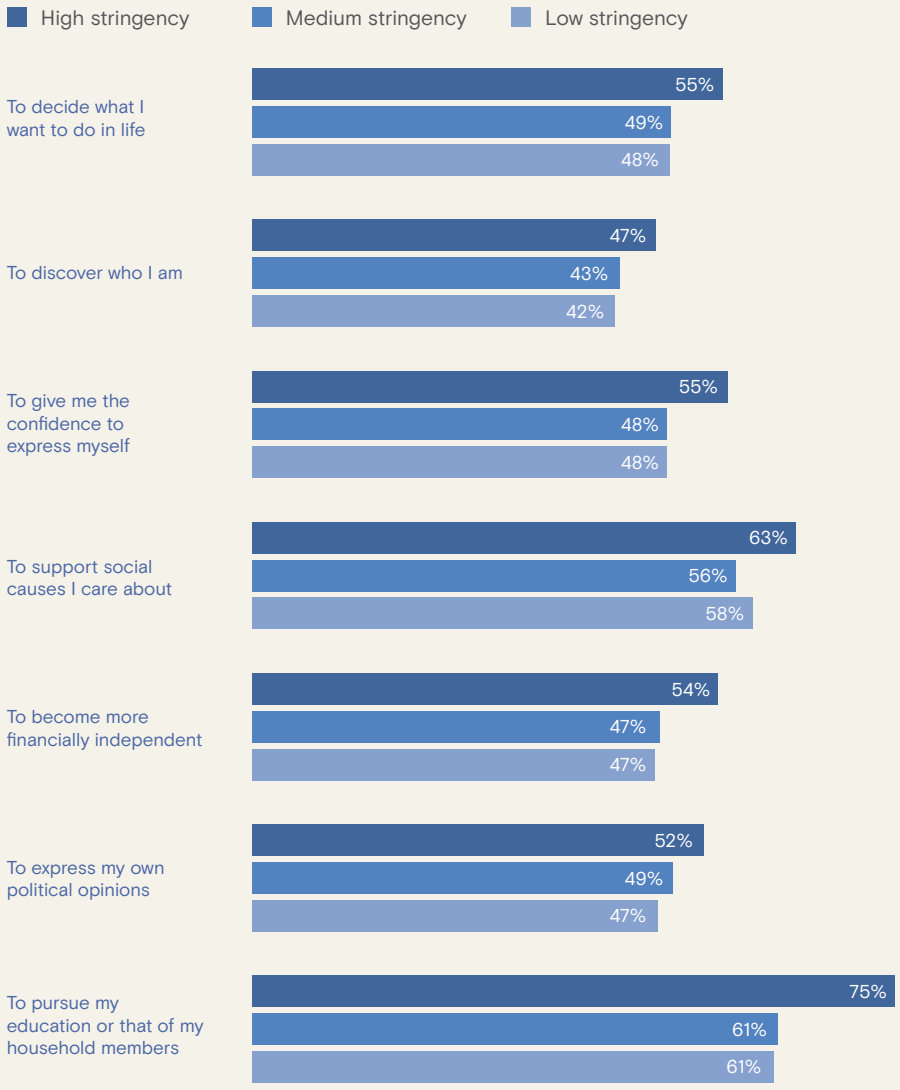
[3] Definitions are based on World Bank classifications.

Unable to meet in person, those under the most stringent lockdowns have turned to the Internet to forge human connections.

The pandemic has compelled people to use the Internet more and for a wider range of activities than ever before.

The pandemic catalysed a surge in Internet use for nearly every conceivable activity. When asked about their changing routines, survey respondents chose connecting with friends and family, work, and education as the top habits that shifted to the Internet; only 3% said that no aspect of their lives has seen a dramatic shift online. Unable to meet in person, those under the most stringent lockdowns have turned to the Internet to forge human connections (Figure 2).

Figure 2: Lending a helping hand
% of survey respondents agreeing that "the Internet has helped me…", by level of lockdown stringency



Source: The Economist Intelligence Unit; stringency data taken from the Oxford COVID-19 Government Response Tracker

Respondents generally believe these shifts will be at least semi-permanent: strong majorities say that once the pandemic passes, they will use the Internet to the same extent or more for various activities, from work to education to maintaining one's personal health.

The pandemic may have widened the divide between on- and offline populations.

The cost of being offline or under-connected now carries far-reaching consequences, from longer waits for coronavirus vaccines to lost income from being unable to work.

Over the course of the pandemic, the Internet has saved between 150m to 300m jobs, safeguarding $8trn in global GDP.[4] Yet Internet applications of crucial importance, such as streaming video for work conference calls, collaboration and education, depend on speedy, high-quality connections that are out of reach for many, particularly in LICs. The cost of being offline or under-connected now carries far-reaching consequences, from longer waits for coronavirus vaccines to lost income from being unable to work. These divides exist even in rich countries. For example, elderly residents with Internet access and digital skills have been able to register for vaccination appointments, prompting the government to go door-to-door in under-connected neighborhoods to help ensure vaccine equity.[5]

This is a problem well understood by the nearly two-thirds of survey respondents who believe the pandemic has widened the divide between those who have access to the Internet and those who do not. Bridging this divide will require addressing key barriers to connectivity—particularly Internet quality, affordability and rural electrification.

[4] "A $2 Trillion Plan to Bring Two Billion More People into the Digital Age", Boston Consulting Group, September 11th 2020.

[5] Julie Zauzmer, Hannah Natanson and Rebecca Tan, "D.C. officials knock on doors to reach seniors amid push for vaccine equity", *The Washington Post*, February 4th 2021.

Growth in 4G coverage is slowing where it's needed most.

One key component of Internet quality is 4G connectivity. Yet deployment of 4G services still lags in many low- and lower-middle-income countries. In LICs, the average rate of growth in 4G rose by 22%, a slowdown from the prior index's 39% gain. On average, 4G still reaches less than a third of people in LICs, well behind the near-universal coverage in upper-middle and high-income countries.

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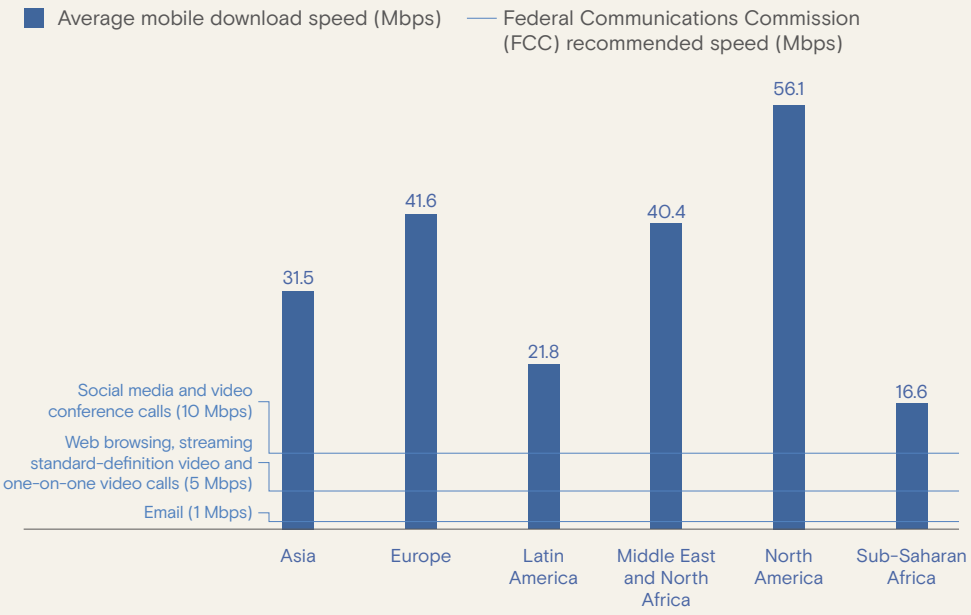
In places where 2G remains the most prevalent service, many data-intensive activities cannot be done online. In much of Sub-Saharan Africa, average mobile download speeds leave little margin for users to attend an online class or a work meeting while also browsing the Internet (Figure 3). For households in which only one member has access to a mobile device—often the primary means of connectivity in LICs—simultaneously conducting video conferences for school and work requires tethering, or linking a computer or other device to a smartphone in order to connect to the Internet. This introduces further hurdles to Internet inclusivity in places where fixed connections are not widely available.

Figure 3: Constrained connectivity
Average mobile download speeds by region v recommended speeds for various applications



Sources: The Economist Intelligence Unit; US FCC

Progress has been made in rural electrification, but the pandemic probably reversed some gains.

The lack of access to reliable electricity also remains a hurdle to an inclusive Internet. Several countries notched notable gains in connecting rural residents, led by Zimbabwe, Côte d'Ivoire and Myanmar, all of which also saw overall gains in this year's index. Yet these advances are now at risk due to pandemic-related factors such as shifting government priorities, supply-chain disruptions and sudden surges in power needs.[6] Indeed, these factors are so dire that in Africa, the population without access to electricity is expected to increase after six years of decline, rising from 579m people in 2019 to 592m in 2020.[7]

Mobile data is getting more affordable, a welcome development amid heightened connectivity needs.

During a year in which economies were stretched thin by the pandemic, getting online nevertheless became less of a burden on wallets, particularly in LICs.

During a year in which economies were stretched thin by the pandemic, getting online nevertheless became less of a burden on wallets, particularly in LICs, where the cost of 1GB of mobile data as a share of income decreased on average by 19%.[8] Liberia and Papua New Guinea saw some of the greatest year-on-year improvements, behind only Japan and South Korea, two high-income countries where data is already relatively affordable by global standards.

This shift is supported by survey results that show affordability—in addition to quality and reliability—improved in LICs (Figure 4). Governments around the world have taken various steps to make data cheaper, from offering discounts via state-owned telecommunications providers to issuing prepaid vouchers.[9] This is part of numerous broader initiatives by both private and public actors meant to improve access and reliability amid the pandemic.[10]

[6] "SDG 7: Data and Projections: Access to electricity", International Energy Agency, October 2020.

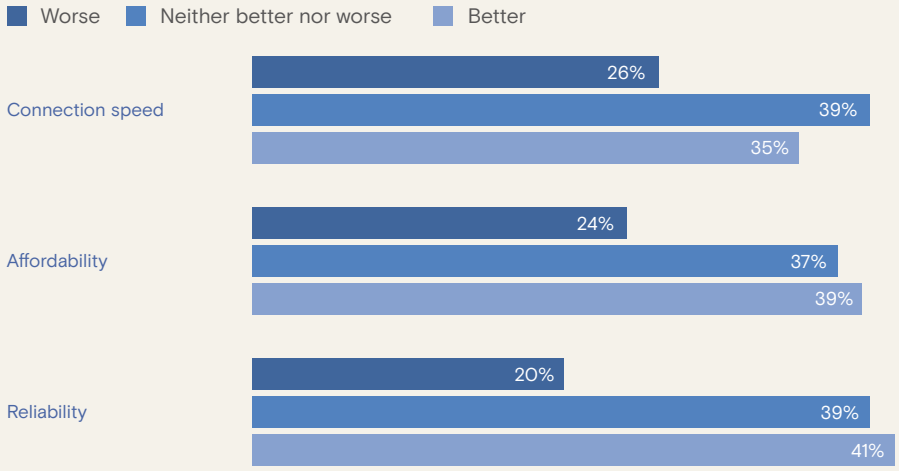
[7] "World Energy Outlook 2020", International Energy Agency, October 2020.

[8] Changes in affordability of 1GB of mobile data (prepaid tariff) were assessed for 72 countries where affordability data was available for both 2019 and 2020. Of those 72 countries, the price of 1GB of mobile data (prepaid tariff) as a percentage of monthly GNI per capita fell by 19% from 2019 to 2020.

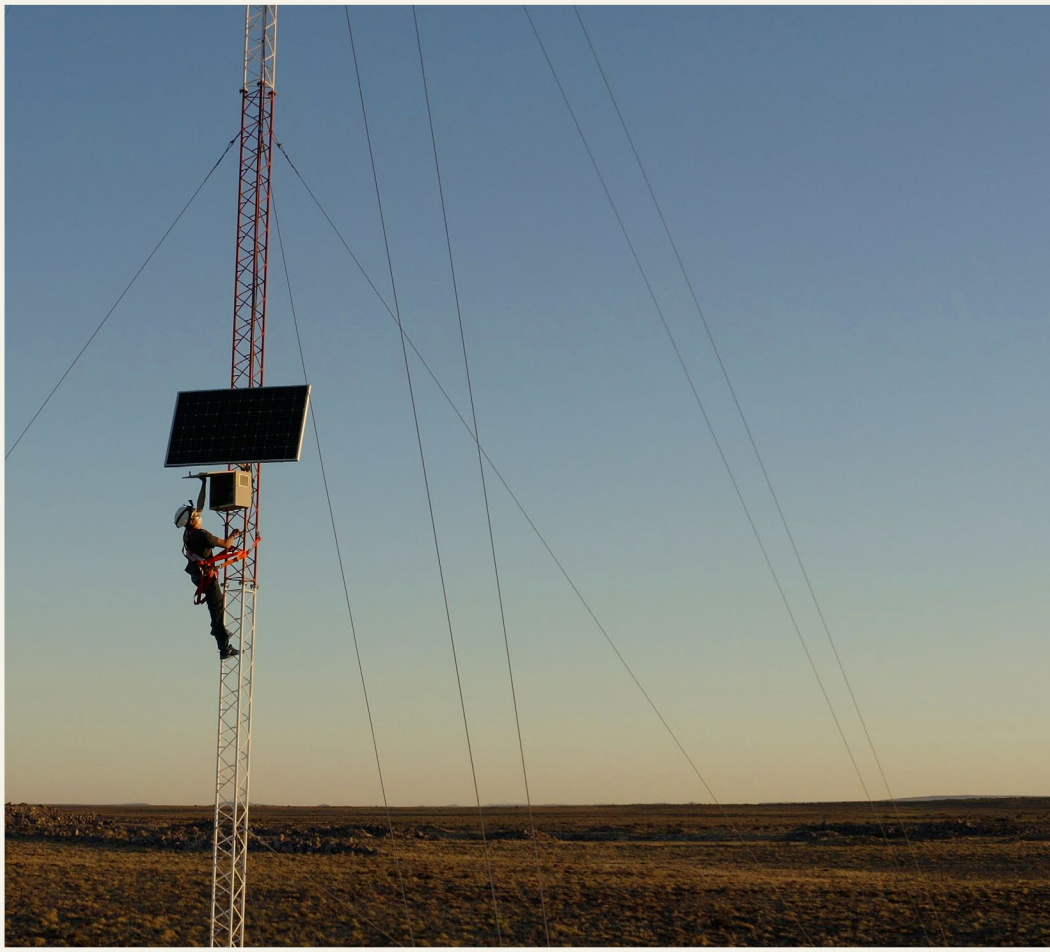
[9] Dércio Tsandzana, "Mozambique and Cape Verde's telcos offer affordable mobile internet as citizens urged to stay home", Global Voices, April 3rd 2020; "State Government COVID-19 Digital Inclusion Response", National Digital Inclusion Alliance.

[10] "First overview of key initiatives in response to covid-19", International Telecommunication Union, May 2020.

Figure 4: Got to admit it's getting better?
Perceived change in Internet affordability, quality and reliability in LICs, compared with before covid (% of respondents)



Source: The Economist Intelligence Unit



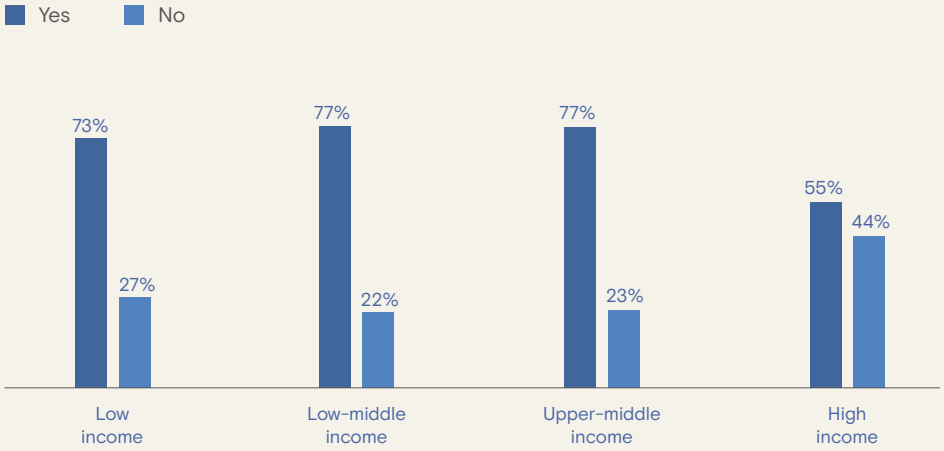
The Internet provided a lifeline for many learners during the pandemic.

Nearly seven in ten survey respondents said they or a member of their household needed to engage in online education due to school closures, a particularly acute concern for parents of children under 17. People in LICs, which as of July 2020 were home to nearly half of the 1.5bn children forced out of school by lockdowns, were much more likely to lean on the Internet for education than their rich-world counterparts (Figure 5).[11]

Because they are less able to use the Internet to keep up with their education, schoolchildren in low- and lower-middle-income countries had, by October, lost nearly 16 weeks of schooling due to the pandemic, compared with only six weeks of loss in high-income countries.

Figure 5: Moulding young minds

Have your and/or a member of your household needed to engage in online education due to school closures as a result of the pandemic? Share of respondents, by country income group



Source: The Economist Intelligence Unit

The poorer-quality Internet typically available in LICs limits immersive learning experiences via applications like video conferencing and streaming[12]—assuming it is possible to get online at all. Because they are less able to use the Internet to keep up with their education, schoolchildren in low- and lower-middle-income countries had, by October, lost nearly 16 weeks of schooling due to the pandemic, compared with only six weeks of loss in high-income countries.[13] This learning loss affects low-income families in the rich world too, who often struggle with connectivity gaps that their wealthier neighbours do not experience.[14] This could do grave harm to economies going forward, given the link between lost learning and foregone GDP growth.[15]

[11] "School closures in poor countries could be devastating", *The Economist*, July 18th 2020.

[12] "Remote Learning Bandwidth Needs", Idaho State Department of Education, 2020.

[13] "What Have We Learnt? Findings from a survey of ministries of education on national responses to COVID-19", Unicef, October 2020.

[14] Emma Dorn, Bryan Hancock, Jimmy Sarakatsannis and Ellen Viruleg, "COVID-19 and student learning in the United States: The hurt could last a lifetime", McKinsey & Co, June 1st 2020.

[15] George Psacharopoulos, Victoria Collis, Harry Anthony Patrinos and Emiliana Vegas, "Wages and GDP lost due to COVID-19 school closures", The Brookings Institution, August 27th 2020.

Gender parity is improving over the long term, but the gap is not closing fast enough in regions with the worst inequality.

Since the first iteration of the index in 2016, the global gender gap in Internet access has shrunk by 4 percentage points, an achievement worth celebrating (Figure 6). Yet despite progress, on average across index countries, men are still 14% more likely than women to have access to the Internet.[16] This is most glaring in Sub-Saharan Africa, where the average gender gap is the highest in the world and even grew last year, with men now 30% more likely than women to be connected.

Some countries have made commendable progress. Pakistan, which has the highest gender gap in the world, at 65%, posted a 6-percentage-point improvement in the past year. To ultimately bridge the divide, however, progress in such countries needs to be faster.

Figure 6: Inching ahead
Gender gap in overall Internet access and mobile phone access and change from previous index, by region[17]

Region	Average gap in Internet access (%)	Last 12 months' change (percentage points)	Average gender gap in mobile access (%)	Last 12 months' change (percentage points)
Global	13.7	0.2	7.0	0.6
Asia	14.3	0.3	7.0	-1.6
Europe	4.6	-0.4	1.1	-0.6
Middle East and North Africa	6.5	1.1	5.6	0.8
Latin America	5.5	-3.3	3.4	0.7
North America	1.1	-1.6	4.8	0.5
Sub-Saharan Africa	30.2	2.6	15.2	3.7

Source: The Economist Intelligence Unit

[16] The gap is calculated via the following formula: (male users as a % of population - female users as a % of population)/(male users as a % of population).

[17] A negative figure indicates a narrowing of the gender gap.

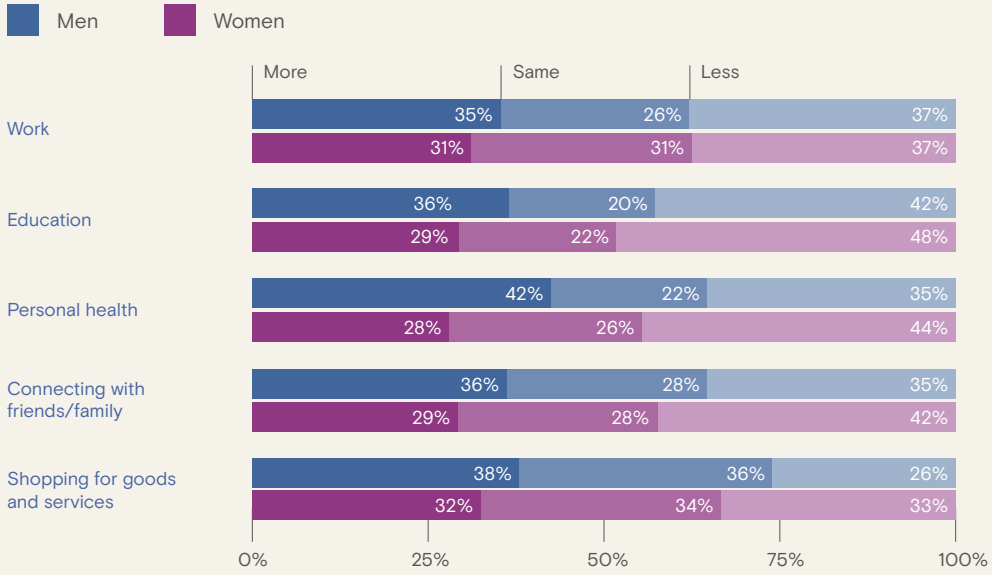
A worrying development is that the gender gap in access to mobile phones widened in LICs, where such devices are often the primary means to get online.

There is a relationship between affordability and the gender gap.

A worrying development is that the gender gap in access to mobile phones widened in LICs, where such devices are often the primary means to get online. The mobile gap tends to be bigger where data costs are higher—unsurprising, given that incomes are generally lower for women than for men—although in countries such as Pakistan and Bangladesh, high gender gaps in mobile access persist despite mobile data becoming more affordable. This could be due to entrenched cultural factors that inhibit gender equality more broadly.[18]

Affordability may also explain divergent views between men and women about their post-pandemic online habits. When asked whether they will use the Internet for various activities more or less after the pandemic abates, women are more likely to say they will use the Internet *less* for various activities—such as education, shopping, and connecting with friends and family (Figure 7)—compared with men.

Figure 7: Meanwhile, back in the real world
Extent to which respondents expect to do various activities online after covid passes, by gender (%)



Note: Rows may not total 100% due to rounding
Source: The Economist Intelligence Unit

[18] Matt Shanahan, "The mobile gender gap in Asia: A region of rapid but unequal growth", GSMA, September 23rd 2019.

In addition, compared with their male counterparts, fewer female survey respondents said that prices have become more affordable during the pandemic. Given that women are much more likely to experience online harassment or violence,[19] women may be more sceptical about the Internet overall. Supporting this point, female survey respondents are more likely to believe that the Internet "is not good for everyone", more likely to say they only interact online with people they know in real life and less likely to believe their online activity is private.

[19] "There's a pandemic of online violence against women and girls", World Wide Web Foundation, July 14th 2020.

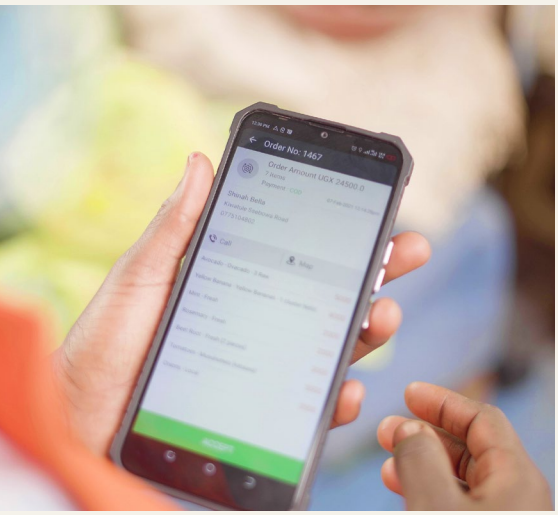
Conclusion

Internet inclusivity must be expanded to meet this moment

More people than ever turned to the Internet in 2020. Its promise of connection, engagement, productivity and enrichment kept much of the global economy from screeching to a halt. This prolonged crisis has provided a window to our digital future—a future in which connectivity and opportunity are intertwined. Digital exclusion is now synonymous with exclusion from the central artery of economies and societies.

This means that any connection that falls short of the widely recognised "meaningful connectivity" benchmark[20]—characterised by regular access, sufficient data and decent speed—will not be enough. Despite recent progress in bridging the digital divide, there are still too many life-enhancing activities that too many people cannot do online, even if they are already connected. This group, presently locked out of a future sure to be digital, includes many in LICs, but also people in rich countries for whom the Internet is not affordable or reliable.

To tackle these gaps, policymakers need to take several key steps. Ensuring consumer choice, releasing more spectrum for Internet use, and forging partnerships with the private sector to build out infrastructure—particularly in rural areas, where operators have less incentive to invest—are all measures that can help reach un- or under-connected communities. Free or subsidised access—by, for example, offering Wi-Fi in public spaces—should be made available to low-income communities where possible. Digital skills must be prioritised as a core component of education for children and lifelong learners alike. There is no one-size-fits-all model for narrowing the digital divide, but what works well in one country can often serve as a template for places that are struggling.



[20] "Meaningful Connectivity — unlocking the full power of internet access", Alliance for Affordable Internet.

Underpinning this, policymakers must secure and provide reliable, timely and granular data about Internet connectivity, quality and affordability in their countries. Last year's index revealed that the pace in the growth of household connectivity in LICs has slowed. Failure by many countries to report data this year means that it is impossible to know whether this trend continued. This limits our ability to diagnose ways to connect the half of the world that is not currently online.

Furthermore, the fact that trust in and relevance of online content took such a fall casts a spotlight on the need to build confidence and security in the use of the Internet. Working in concert with industry to develop tools and techniques to improve fidelity and transparency, policymakers must demonstrate their commitment to tackling misinformation and promoting online safety—particularly crucial in our increasingly digital existence.

As the world gropes for an exit from this crisis and regains a sense of normality, the future we have all witnessed is not likely to disappear entirely. Ensuring that all people are able to fully participate in this new reality must be a priority for everyone with the power to enable it.

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