BRICS
Brasil 2025
COOPERATING FOR AN INCLUSIVE AND SUSTAINABLE WORLD

Assessing universal and meaningful connectivity in BRICS countries

An indicator-based overview

Working Group on ICT Cooperation

Report prepared under the
Brazilian Presidency of BRICS 2025

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cetic.br
Regional Center for Studies on the Development of the Information Society

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Brazilian Network information Center

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MINISTRY OF COMMUNICATION

BRAZILIAN GOVERNMENT
BRASIL
UNITING AND REBUILDING

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The report was coordinated by the MCom, with contributions from Daniel Brandão Cavalcanti, William Ivo Koshevnikoff Zambelli, Amanda Raposo Marques, Renato Gomes Alves de Oliveira, Juliano Stanzani and Hermano Barros Tercius. It was authored by Cetic.br, with contributions from Alexandre Barbosa, Graziela Castello, Fabio Senne, and Fabio Storino. The authors thank Preetam Maloor and members of the ICT Data and Analytics Division at ITU for their valuable input.

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Introduction

This report offers a contribution to the global conversation on digital inclusion by exploring how connectivity is measured and understood. Moving beyond the notion of mere Internet access, the report emphasizes the importance of considering whether people are meaningfully connected—able to access the Internet regularly, reliably, safely, and in ways that contribute to their social and economic well-being.

The report begins by outlining why meaningful connectivity has become a critical standard for assessing digital inclusion. It highlights the shift from focusing solely on infrastructure and availability to also considering quality of service, digital skills, affordability, and actual use of the Internet in everyday life.

It then examines how the concept of universal and meaningful connectivity has evolved within the international development and research communities. Drawing from existing literature and global initiatives, the report traces the efforts to define and operationalize indicators that can guide evidence-based policymaking and foster more inclusive digital ecosystems.

Finally, the report presents an overview of the current state of connectivity across BRICS countries, using data from the International Telecommunication Union's (ITU) Universal and Meaningful Connectivity Dashboard.[1] This analysis provides a snapshot of each country's progress and challenges, offering insights into where gaps remain and how measurement frameworks can support more effective digital inclusion strategies.

1 The report does not represent the formal data collection inputs of the BRICS countries during Brazil's 2025 chairmanship. The data analysed here are strictly based on the ITU's Universal and Meaningful Connectivity Dashboard, avaliable at: https://datahub.itu.int/dashboards/umc/

Universal and meaningful connectivity: The new standard for digital inclusion

In an increasingly digital world, the notion of mere Internet access is no longer sufficient to ensure digital inclusion. While global efforts over the past decades have successfully expanded connectivity, bridging the digital divide requires a deeper, more comprehensive approach. This is where the concept of Universal and Meaningful Connectivity becomes essential. It emphasizes not only access to the Internet but also the quality, affordability, relevance, and usability of that access, ensuring that individuals and communities can effectively use digital technologies to improve their lives.

Universal and meaningful connectivity goes beyond infrastructure. It incorporates reliable and high-speed connections, accessible digital devices, and the skills necessary to navigate the online environment safely and productively. For example, a student with a low-bandwidth mobile connection and limited digital literacy cannot benefit from online education in the same way as a peer with stable broadband access and digital skills. In this sense, meaningful connectivity is a prerequisite for exercising fundamental rights, including education, health, employment, and participation.

Moreover, addressing digital inclusion through this lens allows policymakers and stakeholders to consider socio-economic and cultural barriers that affect how different populations engage with digital technologies. Factors such as gender, age, disability, and rural-urban divides all influence the ability to connect meaningfully. Inclusive policies must therefore prioritize localized, user-centric strategies that recognize these diverse realities.

Incorporating the concept of universal and meaningful connectivity into digital inclusion agendas ensures that connectivity is not just available, but transformative. It calls for a holistic approach—combining infrastructure, affordability, digital skills, relevant content, and inclusive governance—to empower all individuals and communities to participate fully in the digital age.

Measuring universal and meaningful connectivity is essential for countries aiming to develop effective and inclusive digital policies. Traditional metrics focused solely on access—such as the number of Internet subscriptions or mobile penetration rates—do not capture the quality or impact of that access. By adopting a more comprehensive framework that includes indicators such as connection speed, device availability, affordability, and digital skills, governments can better understand the real conditions under which people are using the Internet. This deeper insight allows for the identification of underserved populations and the design of targeted interventions that go beyond infrastructure deployment.

Moreover, systematic measurement enables progress tracking over time and supports evidence-based policymaking. It helps countries align national goals with international development agendas, such as the United Nations' (UN) Sustainable Development

Goals (SDG), particularly SDG 4 (Quality Education), SDG 9 (Industry, Innovation and Infrastructure) and SDG 10 (Reduced Inequalities). Transparent, disaggregated data on meaningful connectivity can also enhance accountability and coordination among stakeholders, including public institutions, private sector actors, and civil society. Ultimately, measuring what truly matters in digital inclusion is a crucial step toward building equitable and resilient digital societies.

Advancing the measurement of universal and meaningful connectivity

In recent years, the literature on digital inclusion has incorporated the debate on the correlation between meaningful connectivity and the empowerment of socially marginalized individuals and communities and its importance in reducing digital inequalities (Alliance for Affordable Internet [A4AI], 2022a; Radhakrishnan et al., 2023; Katz & Gonzalez, 2016).

In 2020, the A4AI published the document "Meaningful connectivity: A new target to raise the bar for Internet access," which, right from the start, expresses the importance of the agenda:

> 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. (A4AI, 2020, p. 3)

Based on this observation, the document proposes that the concept of meaningful connectivity should be a tool for improving Internet access indicators, stimulating policies that address digital development, with more ambitious objectives (A4AI, 2020). As a measurement tool, the proposal presented by the organization, resulting from consultation with different international experts and subsequent application in various contexts (adopting multiple research methods), defines four minimum dimensions for measuring meaningful connectivity: (a) connection speed; (b) devices; (c) data package; and (d) frequency of use.

In 2022, the ITU published a document based on various consultations held throughout 2021, in which is proposed the establishment of a conceptual framework for universal and meaningful connectivity, defined as: "'Meaningful connectivity' is a level of connectivity that allows users to have a safe, satisfying, enriching and productive online experience at an affordable cost" (ITU, 2022, p. 2).

Based on this two-dimensional concept, the document proposes metrics for both the universalization dimension and the "connectivity enablers." This comprehensive

conceptual proposal encompasses aspects such as infrastructure, affordability, users' digital skills, as well as the security of both the connection and online browsing. The proposal (ITU, 2022, p. 6) is aligned with the goals outlined in the 2030 Agenda for Sustainable Development (UN, 2015). It emphasizes the importance of ensuring that every individual has not only basic access, but also a secure, affordable, and meaningful Internet connectivity. This includes access to digital services that facilitates a satisfying, enriching, productive and secure online experience at an affordable cost.

In April 2024, the Regional Center for Studies on the Development of the Information Society (Cetic.br), a department of the Brazilian Network Information Center (NIC.br), published "Meaningful Connectivity: Measurement Proposals and a Portrait of the Brazilian Population." This publication introduces a new analytical framework for measuring meaningful connectivity in Brazil, going beyond basic Internet access to consider the quality and context of use.

Drawing on international frameworks (A4AI, 2020; ITU, 2022), the study proposes a measurement model based on four key dimensions: (1) affordability, (2) access to devices, (3) connection quality, and (4) usage environment. The findings revealed that in 2023, only 22% of Brazilians were meaningfully connected—a scenario far more challenging than suggested by the proportion of Internet users in the country during the same period (84%).

The study also examined digital inequality across geographic, socioeconomic, and demographic lines. Importantly, it found strong correlations between higher levels of meaningful connectivity and better digital skills. This evidence reinforces the need for nuanced, data-driven approaches to digital inclusion—ones that prioritize not just access, but the capacity for all people to benefit fully from the Internet.

In 2024, under Brazil's presidency, the G20 Digital Economy Working Group (DEWG) identified universal and meaningful connectivity as one of its four key priorities. As part of the discussions on this thematic area, the ITU, Brazil's Ministry of Communications, and Cetic.br|NIC.br collaborated to produce the report **"Universal and meaningful connectivity: A framework for indicators and metrics."** This report provided guidelines for measuring universal and meaningful connectivity and proposed a framework structured around six core dimensions. The table below summarizes these six dimensions as presented in the original document.

Table 1: Dimensions for measuring universal and meaningful connectivity – G20 Framework 2024

Dimensions	Conceptual questions	Measurement objectives
Connection quality	Do people have access to high-speed, stable Internet connections suitable for their specific needs and activities online?	Assessing the speed, reliability, and stability of Internet connections.
Availability for use	Are people able to use the Internet as frequently and intensively as they wish? Can people access the Internet in different locations, wherever and whenever they want?	Measuring the regularity and intensity of Internet use among individuals. Evaluating the accessibility and convenience of Internet use in various contexts and locations.
Affordability	Are Internet access, devices, and data plans affordable and sufficient relative to people's incomes, allowing for flexible and desired quality of use?	Evaluating the affordability, adequacy, and flexibility of Internet services relative to individual incomes.
Devices	Do people have access to the appropriate devices necessary to fully engage with and benefit from digital opportunities?	Evaluating the availability, variety, and suitability of devices used to access the Internet.
Digital skills	Do people possess the necessary skills to leverage digital opportunities and manage potential risks effectively?	Assessing individuals' competency and confidence in using the Internet effectively.
Safety and security	Do people have access to secure Internet connections, can they navigate online safely, and do they feel secure in their online interactions and activities?	Assessing the safety and security of user online experience including concerns and exposure to harmful content and cyber-enabled crime.

Source: Prepared by the author, based on Ministry of Communication et al. (2024).

The document also highlights the importance of collecting data with sufficient granularity, noting that national averages can obscure significant disparities, especially in large and diverse countries. A summary of this framework was incorporated into the "G20 Maceió Ministerial Declaration on Digital Inclusion for all," published in September 2024. It highlights not only the key dimensions for measuring meaningful connectivity but also the importance of data that reflects social and economic diversity.

As highlighted in this brief overview of recent studies on the topic, the agenda for measuring universal and meaningful connectivity is progressing steadily. However, it remains an evolving field, open to continuous refinement. As technology advances and new dimensions and demands for connectivity emerge, the measurement frameworks must also adapt to reflect these shifting realities.

In this context, the purpose of this document is not to establish definitive parameters and indicators for measuring universal and meaningful connectivity. Rather, it aims to support the development of monitoring as an ongoing practice—one that can be continuously improved and contributes to building a more inclusive digital world, capable of fostering social progress for all. The following sections present currently available data for assessing universal and meaningful connectivity in BRICS countries.

Tracking universal and meaningful connectivity: Evidence from BRICS nations

This section presents general results for the BRICS countries based on the data available in the ITU Universal and Meaningful Connectivity (UMC) Dashboard.

The Dashboard for UMC monitors country progress toward a set of aspirational connectivity targets. As part of the implementation of the UN Secretary-General's Roadmap for Digital Cooperation, the International Telecommunication Union (ITU) and the Office of the UN Secretary-General's Envoy on Technology have established a set of targets for 2030. These goals aim to guide policy action, monitor progress, evaluate policy effectiveness, and drive efforts toward achieving universal and meaningful connectivity by the end of the decade (https://www.itu.int/itu-d/meetings/statistics/umc2030/).

The Dashboard is maintained by the ICT Data and Analytics Division of the ITU's Telecommunication Development Bureau, in the context of the Project "Promoting and Measuring Universal and meaningful Connectivity."

Table 2 summarizes the indicators currently available on the Dashboard, along with their corresponding target values. It is important to note that the data provided do not fully capture all possible dimensions required for a comprehensive assessment of universal and meaningful connectivity in each country.

As stated on the Dashboard's website: "The Dashboard is a work in progress: it will be enriched as more data and indicators become available, and new features will be added."

Nevertheless, it is a highly valuable tool for monitoring country-level progress and, in particular, for analyses of regions or strategic alliances among countries with common economic and political objectives, such as BRICS.

Table 2: ITU UMC Dashboard indicators and target values

Indicators	Indicators description	Indicators target values
Internet users	Individuals aged 15+ using the Internet (%)	Target is considered met if at least 95% of individuals use the Internet
Homes connected	Households with Internet access at home (%)	The target is met if at least 95% of households have Internet access
Mobile phone ownership	Individuals who own a mobile cellular telephone (%)	The target is met if at least 95% of the population own a mobile phone
High-Speed fixed broadband	Equal to or above 10 Mbit/s % fixed broadband subscriptions	Target is considered met if at least 95% of fixed broadband subscriptions have an advertised speed of at least 10 Mbit/s
Fixed broadband cost	Fixed-broadband Internet basket % GNI per capita	Target is considered met if the cost does not exceed 2% of monthly GNI per capita
Mobile broadband cost	Data-only mobile broadband basket % GNI per capita	Target is considered met if the cost does not exceed 2% of monthly GNI per capita
Primary schools connected	Primary schools connected to the Internet (%)	The target is met if at least 95% of primary schools is connected
Lower-Secondary schools connected	Lower-secondary schools connected to the Internet (%)	The target is met if at least 95% of lower-secondary schools is connected
Upper-Secondary schools connected	Upper-secondary schools connected to the Internet (%)	The target is met if at least 95% of upper-secondary schools is connected
Secondary schools connected	Secondary schools connected to the Internet (%)	The target is met if at least 95% of tertiary schools is connected
Businesses (0+ staff) connected	Business with 0+ staff using the Internet (%)	Target is considered met if at least 95% of businesses (0 or more staff) use the Internet
Business (10+ staff) connected	Business with 10+ staff using the Internet (%)	Target is considered met if at least 95% of businesses with 10 or more staff use the Internet

Internet use gender parity	Internet use gender parity (%)	Internet use gender parity (1.0 = parity)
Mobile phone use gender parity	Percentage of women using a mobile phone divided by the percentage of men using a mobile phone	Mobile phone use gender parity (1.0 = parity)
Mobile phone ownership gender parity	Percentage of women owning a mobile phone divided by the percentage of men owning a mobile phone	Mobile phone ownership gender parity (1.0 = parity)

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

To analyze the indicators of universal and meaningful connectivity currently available on the ITU UMC Dashboard for the 11 current BRICS member countries, the results were presented by indicator, including all countries for which data were available. It is important to note that the most recent available data for each indicator and country were used. Table 3 shows the latest publicly available year for each indicator by country. The data are drawn from indicators submitted directly by countries to the ITU, and have been verified, validated, and published on the ITU UMC Dashboard, available at: https://datahub.itu.int/dashboards/umc

Table 3: ITU UMC Dashboard indicators by the latest year available

Indicators by lastest year available	Brazil	China	Egypt	Ethiopia	India	indonesia	Iran	Russia	Saudi Arabia	South Africa	United Arab Emirates
Business (0+staff) connected	n/a	n/a	n/a	n/a	2108	n/a	2017	2017	n/a	n/a	n/a
Business (10+staff) connected	n/a	n/a	n/a	n/a	2018	n/a	n/a	n/a	n/a	n/a	n/a
Data-only mobile-broadband basket price (as % of GNI per capita)	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024
Estimated proportion of households with internet access at home	2023	2023	2023	2023	2022	2023	2023	2023	2023	2023	2023
Fixed broadband, G10, % of total	2023	2023	2023	2022	2022	2023	2023	2023	2023	2023	2023
Fixed broadband internet basket price (as % of GNI per capita)	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024
Internet use gender parity	2022	2022	2020	2021	2018	2022	2021	2022	2022	n/a	2022
Internet user (%)	2023	2023	2023	2023	2022	2023	2023	2023	2023	2023	2023
Mobile phone ownership gender	2023	n/a	2023	n/a	n/a	2023	2021	2023	2023	2019	2023
Mobile phone use gender parity	2023	n/a	2022	2021	n/a	2023	2021	n/a	2023	n/a	2023
Percentage of individuals who own a mobile phone	2023	2023	2023	2023	2023	2023	2023	2023	2023	2023	2023
School internet lower secondary	2017	2022	2019	2021	2023	2022	2012	n/a	2022	n/a	2022
School internet primary	2019	2022	2019	n/a	2023	2022	2012	n/a	2022	n/a	2022
School internet secondary	2022	2022	2016	2021	2023	2022	2012	2018	2022	n/a	2022
School internet upper secondary	2017	2022	2021	2021	2023	2022	2012	n/a	2022	n/a	2022

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

Given that two of the fifteen indicators currently have limited or no data available for the majority of countries, both of which pertain to business connectivity (one encompassing all business types and the other specifically businesses with ten or more employees)—the corresponding results are not presented in this analysis. Nonetheless, it is important to underscore that data gaps or unavailability constrain the ability to gain a comprehensive understanding of the broader landscape of meaningful connectivity within and across countries. This limitation may hinder the development of well-informed policy responses and targeted interventions to address existing or emerging challenges.

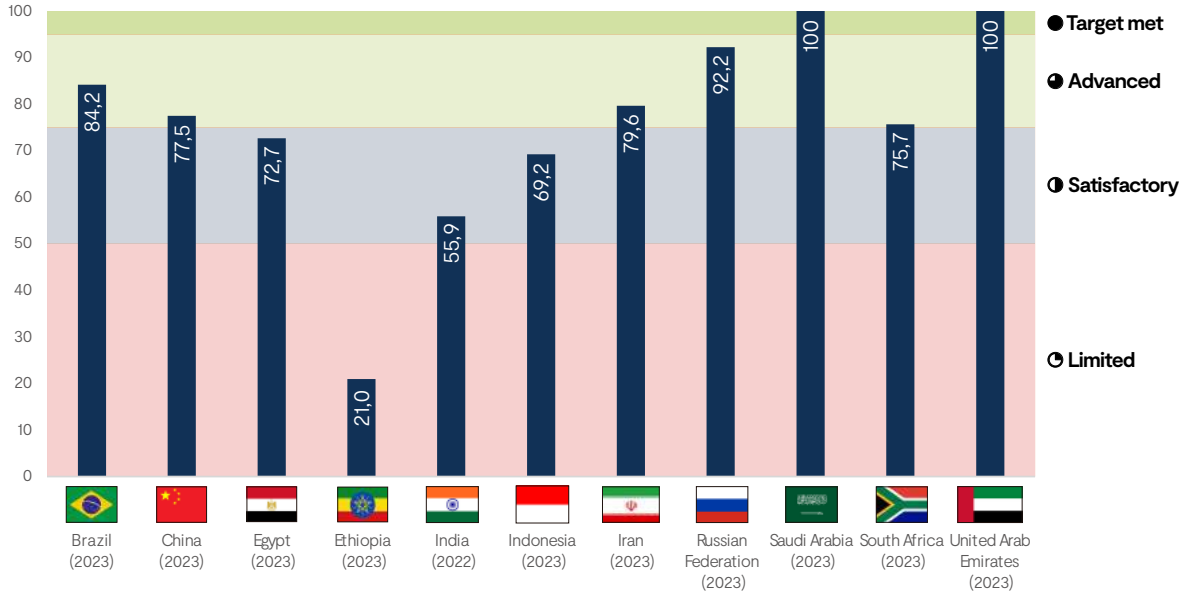
The absence of data in this context does not necessarily indicate that such data are nonexistent. In some instances, the information may not have been submitted to the ITU. This underscores the importance of continued efforts to share national data with relevant international bodies, as such practices contribute to more accurate comparative assessments and enhance the monitoring of progress toward universal and meaningful connectivity.

In addition, the regular and timely collection and dissemination of data remain critical. Outdated data—especially in the domain of digital access and technology adoption—can significantly distort policy analyses and undermine decision-making. Given the rapid evolution of digital technologies, policy frameworks informed by obsolete data may fail to reflect current realities and respond adequately to the needs of populations.

The results for the remaining thirteen indicators are presented below, covering all BRICS countries for which data are available on the ITU UMC Dashboard. These results are displayed graphically and categorized according to different levels of progress. For each indicator, the level of progress is determined based on a 'progress score,' calculated using a standardized min-max formula: [indicator value] / [target value] × 100. This methodology results in four levels of progress, as defined by the ITU UMC Dashboard.

Progress Status	Progress Score
Limited	Between 0 and 50
Satisfactory	Between 50 and 75
Advanced	Between 75 and 95
Target Met	Between 95 and 100

Graph 1: Percentage of Internet users by BRICS countries



Progress status	Countries
Limited	1
Satisfactory	3
Advanced	5
Target Met	2
Total countries	**11**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

All BRICS countries have available and generally up-to-date data on Internet users. Ten countries report data from 2023, while one country provides data from 2022. Among the eleven countries, seven are classified at the Advanced or Target Met levels, and three are at the Satisfactory level. Only one country remains at the Limited level.

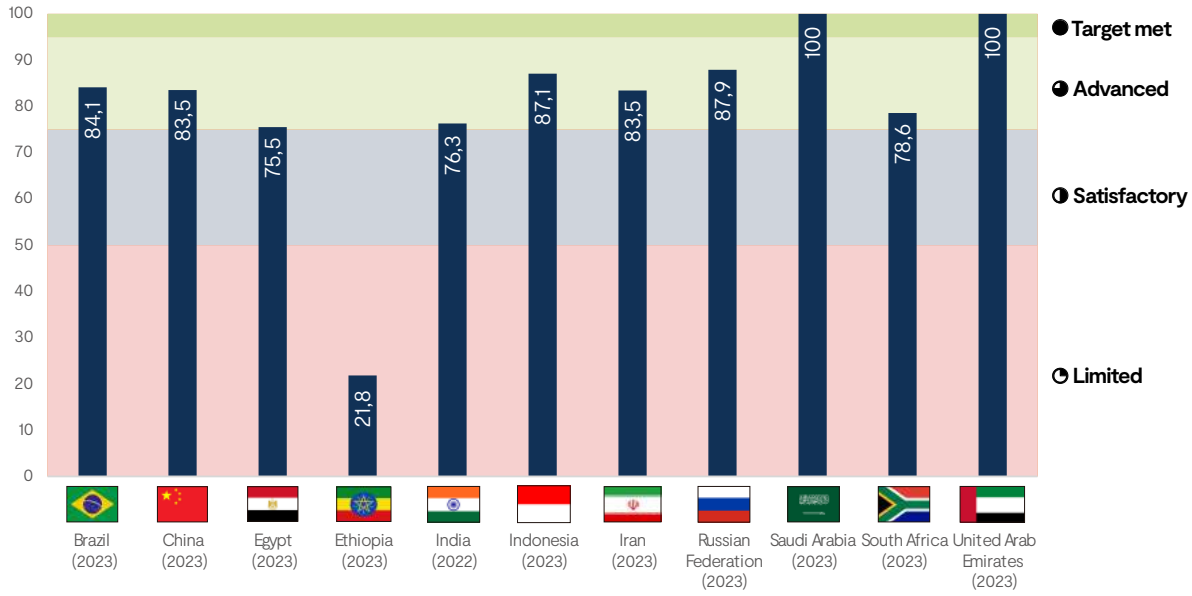
While these results are largely positive for the group, the vast majority of countries have not yet reached the 95% threshold of Internet users—the benchmark set for achieving universal Internet access (Target Met level).

The gaps observed in achieving universality of access, particularly in countries classified as Advanced (which constitute the majority), highlight the need for targeted public policies aimed at reaching specific population groups that remain underserved. These groups may be excluded due to geographic barriers (e.g., remote or hard-to-reach areas), demographic factors (e.g., age-related disparities), or socioeconomic conditions (e.g., populations living in extreme poverty). To support the formulation of effective,

evidence-based interventions, the availability of disaggregated indicators reflecting diverse socioeconomic contexts is essential.

The continued exclusion of specific groups from Internet access risks deepening existing inequalities and limiting development opportunities—particularly among already vulnerable populations. On the other hand, given that many BRICS countries have already reached relatively advanced levels of Internet penetration, there is an important opportunity for knowledge exchange. Successful policy experiences can be shared across the group, especially with countries still facing more significant challenges in achieving universal Internet access.

Graph 2: Percentage of households with Internet access by BRICS countries



Progress status	Countries
Limited	1
Satisfactory	0
Advanced	8
Target Met	2
Total countries	**11**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

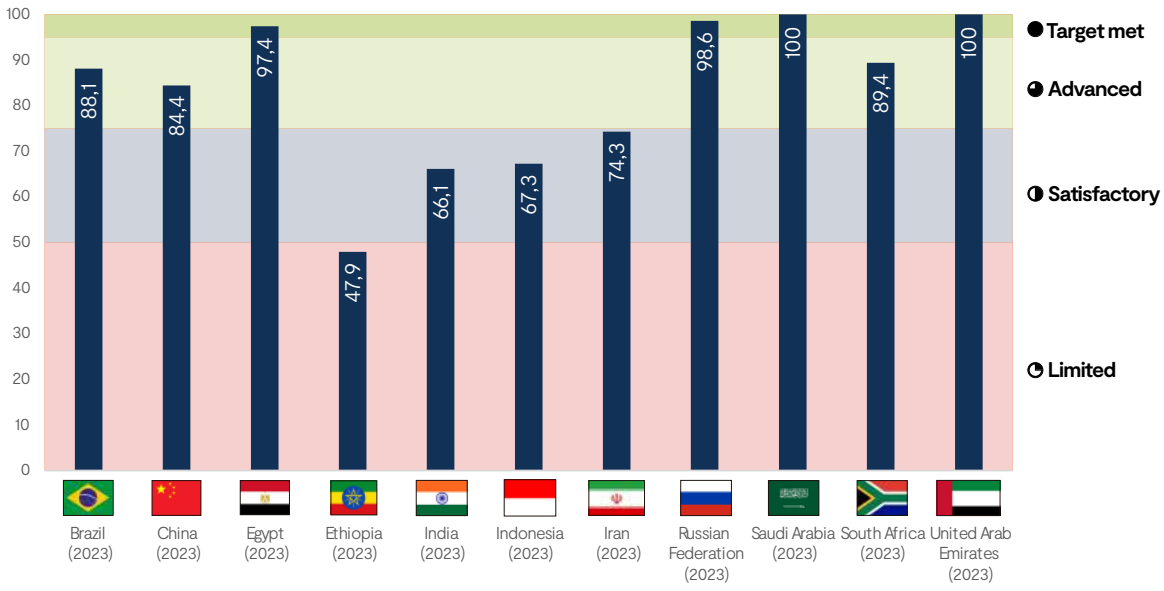
All BRICS countries have data available on household Internet access, which are, in general, up to date. Ten countries report data from 2023, while one country presents data from 2022. Among the eleven countries, ten are classified at the Advanced or Target Met levels, with only one country remaining at the Limited level. While these results are

largely positive for the group, the vast majority of countries have not yet reached the 95% threshold of households with Internet access—the benchmark for universal household connectivity (Target Met level).

Identifying and addressing the remaining barriers to universal access is essential. These may include infrastructure-related challenges or the affordability of services for users. In this regard, further in-depth studies are needed to better understand the conditions in underserved regions and communities.

Ensuring that all households have access to the Internet is essential for promoting inclusive and equitable development. Household connectivity serves as a foundational enabler for the exercise of fundamental rights, including access to education, health services, government services, and civic participation. As digital technologies such as the Internet of Things (IoT) and Artificial Intelligence (AI) continue to evolve rapidly, household Internet access becomes increasingly critical to ensure that individuals and communities are not left behind in the digital transformation.

Graph 3: Percentage of mobile phone ownership by BRICS countries



Progress status	Countries
Limited	1
Satisfactory	3
Advanced	3
Target Met	4
Total countries	**11**

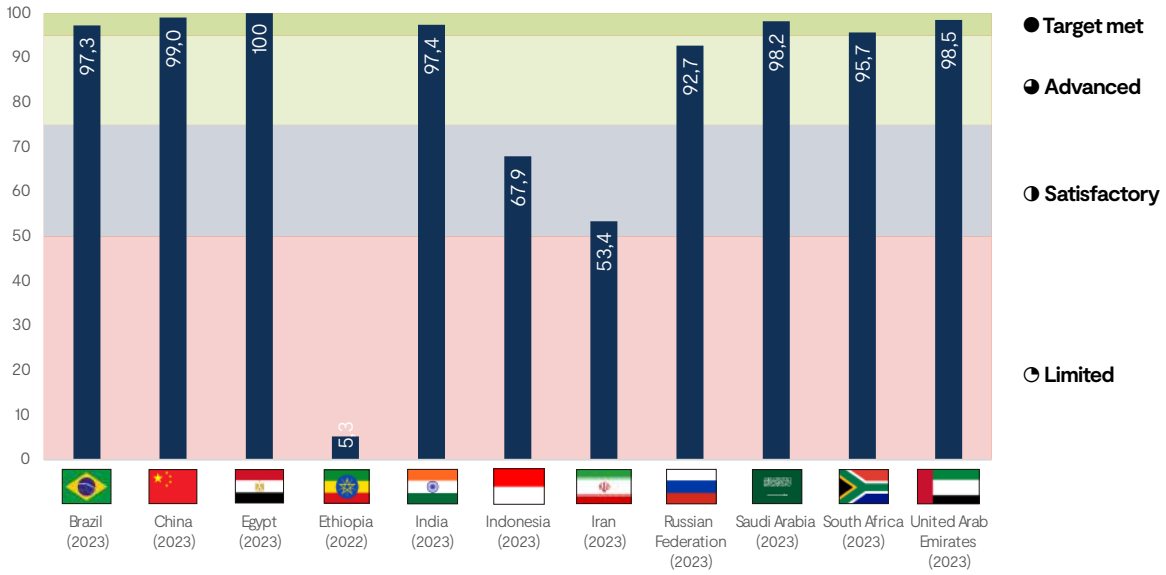
Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

All BRICS countries have up-to-date data (2023) on the percentage of individuals who own a mobile phone. For this indicator, results vary more significantly across countries. Among the eleven countries, four are classified at the Target Met level, three at the Advanced level, three at the Satisfactory level, and one at the Limited level.

It is important to note that this indicator does not distinguish between smartphones and basic mobile phones without Internet connectivity, which may, in some cases, obscure an additional layer of digital exclusion. Nevertheless, promoting policies that ensure individuals have access to personal, Internet-connected mobile devices is essential. These devices enable mobility and access to a broad range of services and applications that have become integral to daily life, making them a baseline requirement for social and digital inclusion in contemporary societies.

The ownership of individual devices is a critical—though not exclusive—pillar for enabling autonomy and freedom in the use of the Internet. Without access to a personal device when needed, individuals are effectively excluded from the opportunity to engage in truly meaningful connectivity and digital participation.

Graph 4: Percentage of fixed broadband subscriptions equal or above 10 Mbit/s by BRICS countries



Progress status	Countries
Limited	1
Satisfactory	2
Advanced	1
Target Met	7
Total countries	**11**

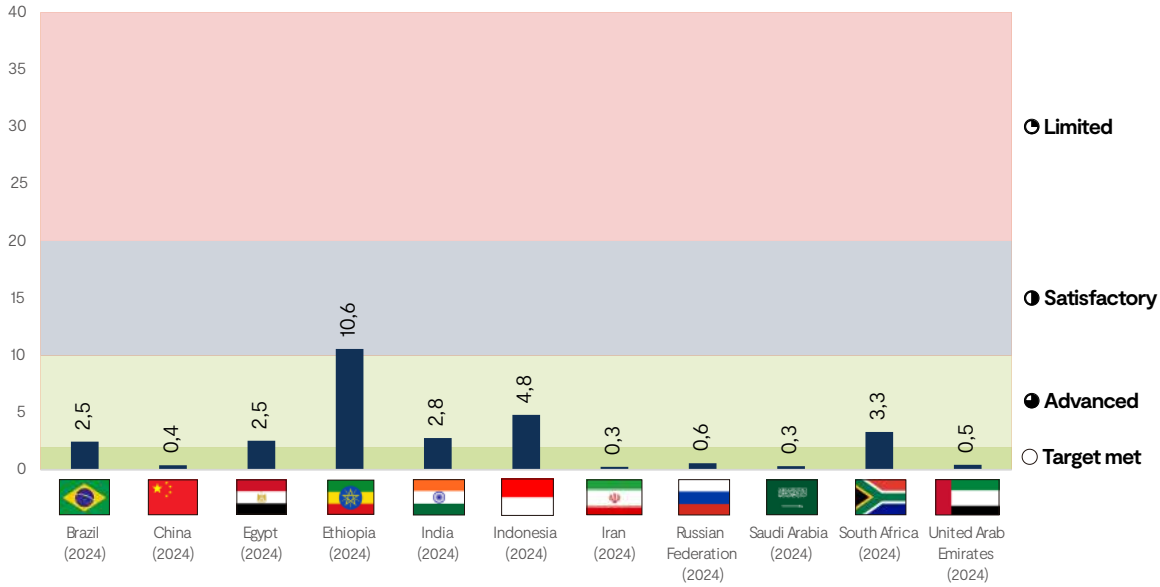
Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

All BRICS countries collect data on high-speed fixed broadband subscriptions, defined as connections with speeds equal to or greater than 10 Mbps. The data is generally up to date: nine countries report data from 2023, and two provide figures from 2022. Among the 11 countries assessed, seven have already reached the "target met" level, one is at the "advanced" level, and two are at a "satisfactory" level. Only one country remains at the "limited" level.

While these results are largely positive—indicating strong progress across the BRICS group—there is a critical need to continuously revisit and update the definition of what constitutes an "adequate" broadband speed. Technological advancements and evolving patterns of Internet use increasingly demand not only higher speeds but also more reliable and responsive connections. Furthermore, nominal speed alone does not fully capture the user experience. Metrics such as latency, jitter, and packet loss are essential to evaluate the actual quality of service and determine whether it is sufficient for users to engage in key digital activities without constraint.

For the BRICS countries, which are investing heavily in digital transformation as a driver of inclusive development, these nuanced assessments are crucial. They help ensure that connectivity is not just available, but meaningfully supports economic participation, access to services, and innovation across diverse sectors and populations.

Graph 5: Fixed-Broadband Internet basket price, as the percentage of Gross National Income (GNI) per capita, by BRICS countries



Progress status	Countries
Limited	0
Satisfactory	1
Advanced	5
Target Met	5
Total countries	**11**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

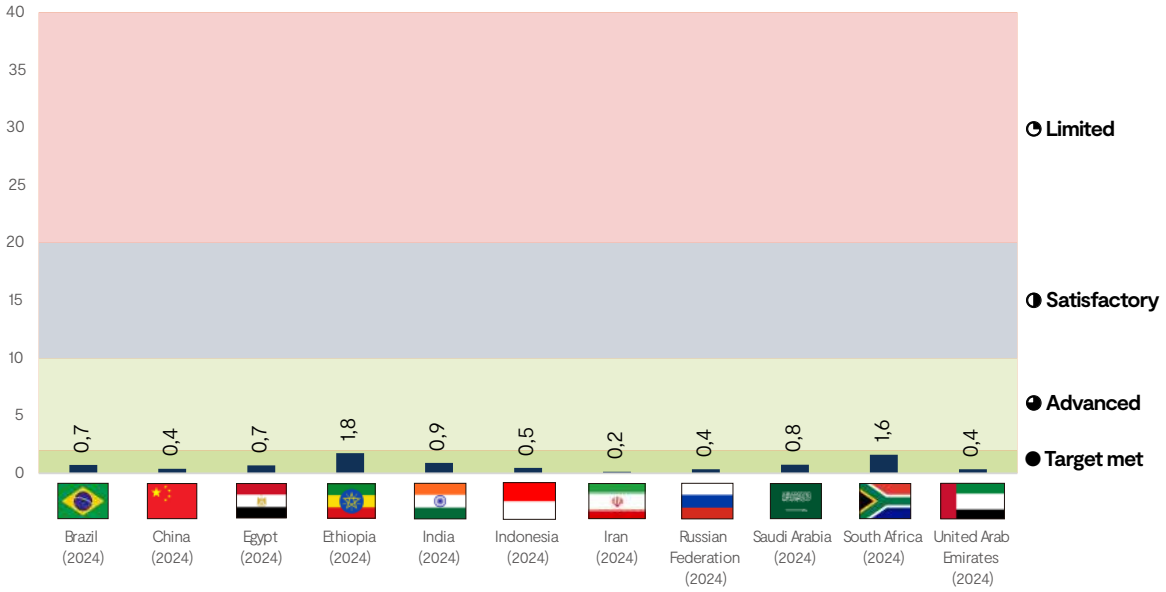
Regarding the fixed-broadband Internet basket price indicator, all BRICS countries report recent and available data, with all figures updated for the year 2024. Unlike the indicators discussed previously, this metric reflects affordability: lower percentages indicate better performance, as the indicator represents the proportion of fixed-broadband Internet costs relative to each country's GNI per capita.

According to the ITU's UMC Dashboard progress levels, 10 out of 11 countries are positioned in either the "advanced" or "target met" categories. One country falls under the "satisfactory" level, and none are classified in the "limited" level, signaling generally favorable conditions in terms of affordability across the group.

However, financial barriers to accessing quality connectivity remain a critical issue—particularly in large, economically diverse developing countries, such as those in the BRICS group. Even where national indicators suggest progress, persistent social and economic inequalities mean that large segments of the population may still face significant challenges in affording broadband access. For economically vulnerable groups, the cost of connectivity may either be entirely prohibitive or force trade-offs with other essential goods and services necessary for basic well-being.

In this context, it is essential to emphasize that national averages can mask stark internal disparities. In countries marked by high levels of inequality and regional variation, such aggregated indicators risk rendering invisible those populations most in need of targeted public policies. Ensuring that connectivity is both universally accessible and meaningfully affordable requires a more granular understanding of affordability barriers and a commitment to equity-driven approaches that recognize Internet access as a public good and a fundamental enabler of rights, rather than a commodified service accessible only to those with sufficient means.

Graph 6: Data-Only mobile broad basket price, as the percentage of GNI per capita, by BRICS countries



Progress status	Countries
Limited	0
Satisfactory	0
Advanced	0
Target Met	11
Total countries	**11**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

With regard to the data-only mobile-broadband basket price indicator, all BRICS countries report recent and available data for the year 2024. As with the fixed-broadband affordability metric, lower percentages reflect better performance, since the indicator measures the proportion of the data-only mobile-broadband price relative to each country's GNI per capita.

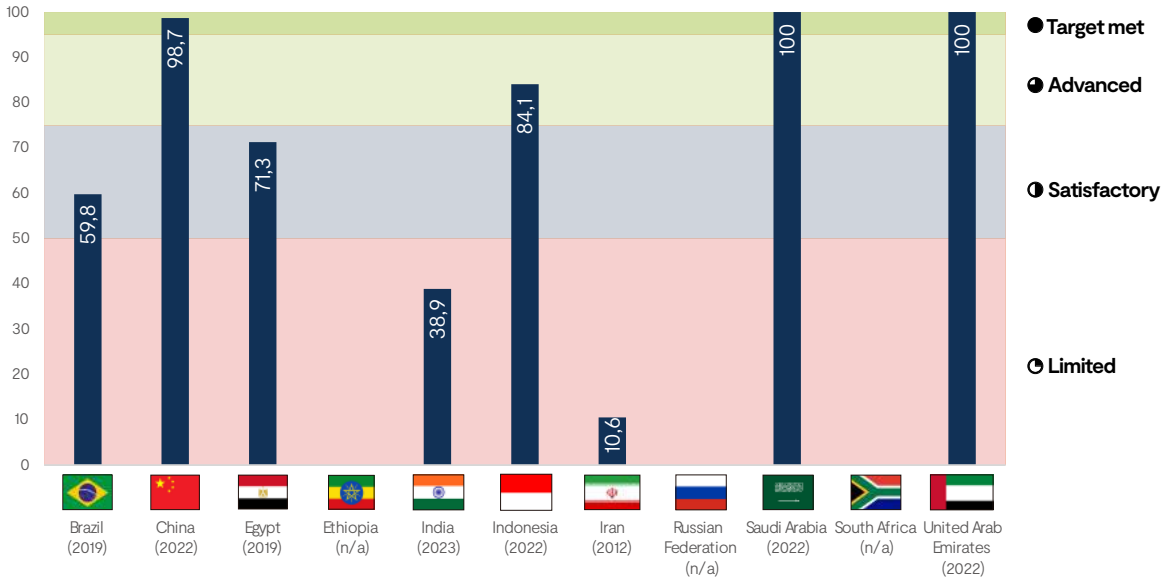
This indicator presents the most favorable results across all those analyzed, with all 11 BRICS countries meeting the "target met" threshold—each reporting a data-only mobile-broadband basket price below 2% of GNI per capita. These figures highlight a notable achievement in terms of mobile broadband affordability across the group.

Nevertheless, it is crucial to reiterate that national averages often conceal significant internal disparities, particularly among specific population groups and across different regions within countries. The collection of highly disaggregated, granular data is essential to prevent misleading conclusions that overlook the lived realities of economically and socially marginalized communities.

Granular data not only enhances the precision of diagnostic efforts but also enables the design of more targeted and equitable policy interventions. Such approaches are vital to address pre-existing disparities and to prevent the amplification of inequality through policies based on incomplete or overly aggregated data. In this sense, prioritizing localized data collection and analysis is a strategic imperative for BRICS countries committed to inclusive digital development and universal connectivity.

The four indicators available on the ITU UMC Dashboard related to school connectivity will be presented together below.

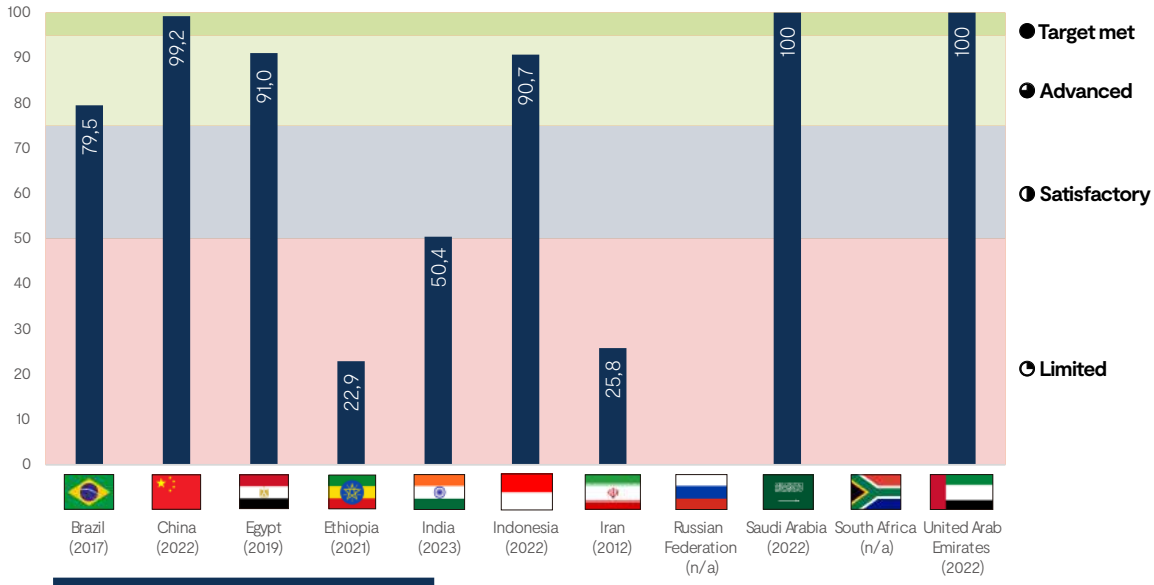
Graph 7: Percentage of primary schools connected to the Internet, by BRICS countries



Progress status	Countries
Limited	2
Satisfactory	2
Advanced	1
Target Met	3
Total countries	**8**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

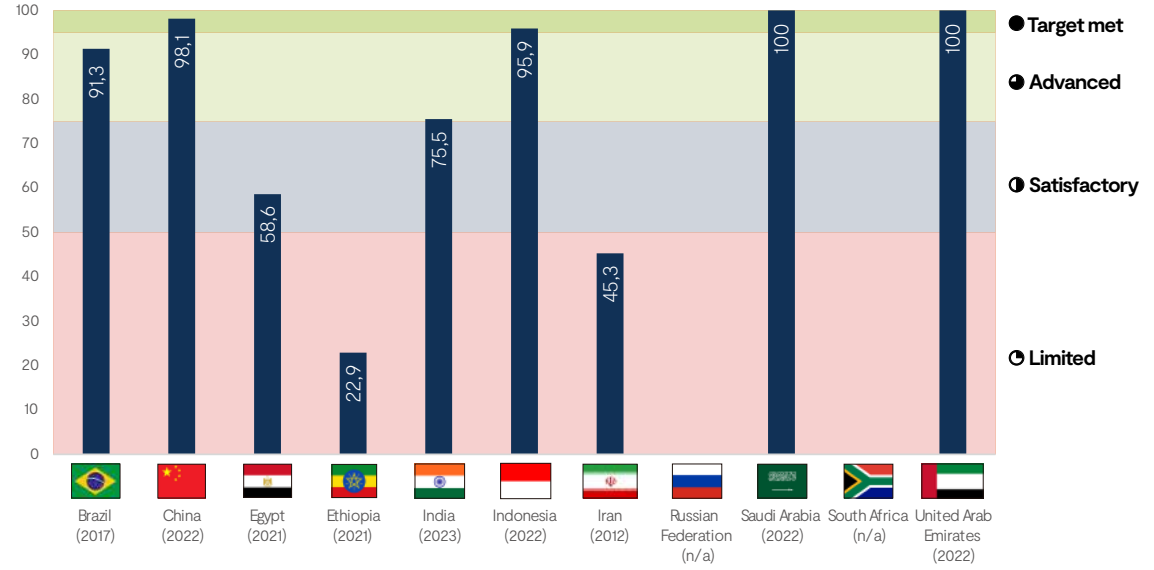
Graph 8: Percentage of lower-secondary schools connected to the Internet, by BRICS countries



Progress status	Countries
Limited	2
Satisfactory	1
Advanced	3
Target Met	3
Total countries	**9**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

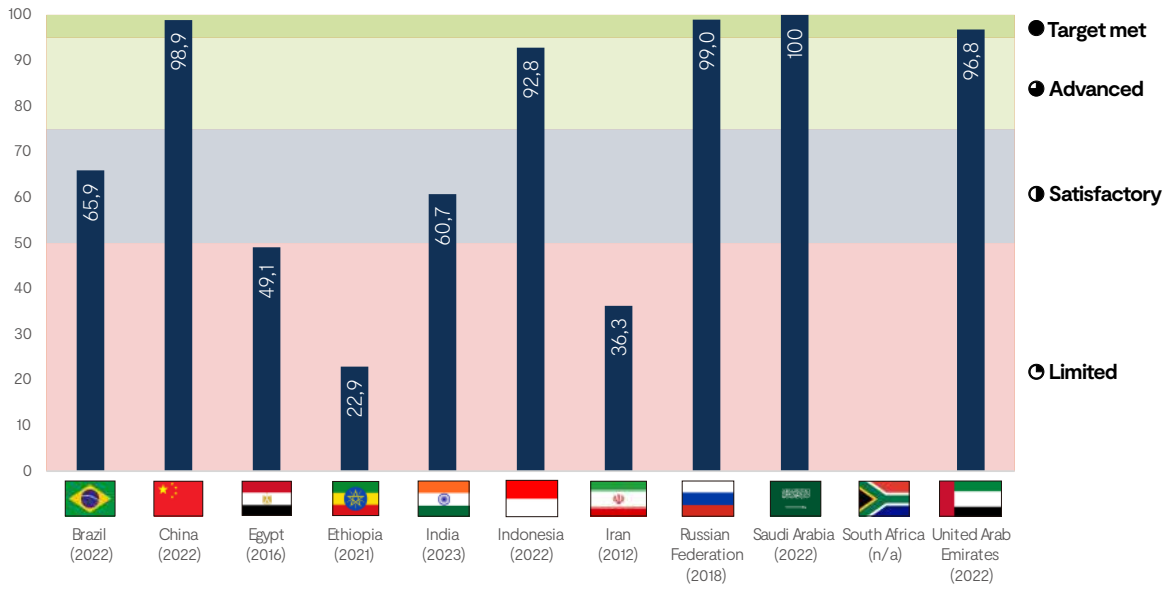
Graph 9: Percentage of upper-secondary schools connected to the Internet, by BRICS countries



Progress status	Countries
Limited	2
Satisfactory	1
Advanced	2
Target Met	4
Total countries	**9**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

Graph 10: Percentage of lower-secondary schools connected to the Internet, by BRICS countries



Progress status	Countries
Limited	3
Satisfactory	2
Advanced	1
Target Met	4
Total countries	**10**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

The four charts above present the available data from the ITU UMC Dashboard on school connectivity. In this area, data coverage is uneven—not all countries report information, and among those that do, the reporting years vary significantly, with some data sets dating back over a decade. This variation points to both gaps in monitoring and the need for more consistent, up-to-date tracking of school connectivity across the BRICS countries.

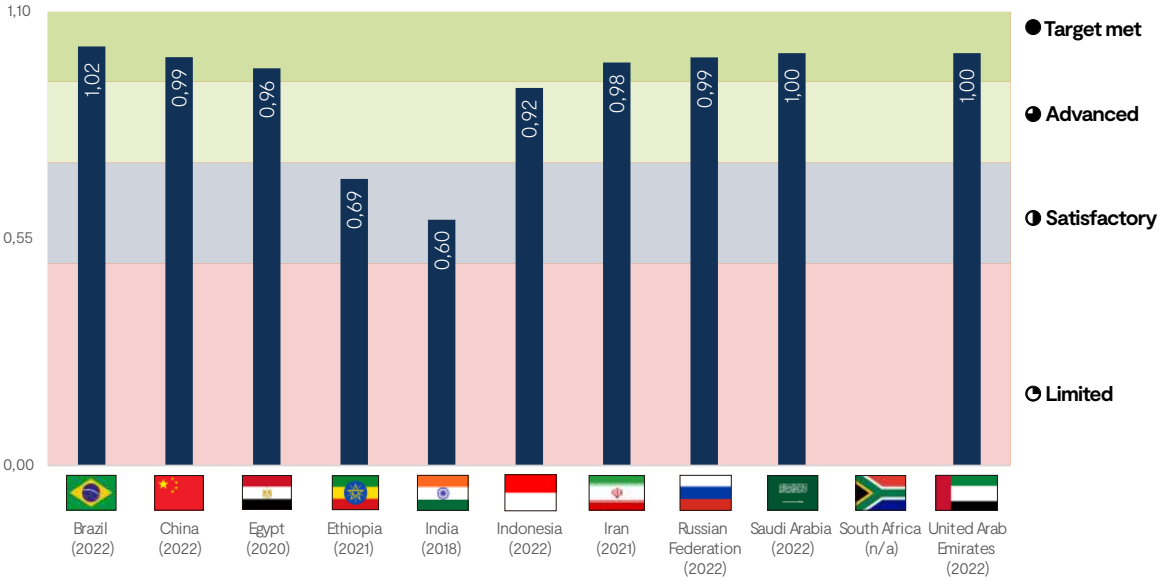
Among the eight countries that report data on primary schools with Internet access (Graph 07), half are categorized at the "advanced" or "target met" levels, while the other half fall under the "satisfactory" or "limited" progress levels. For lower-secondary schools (Graph 08), out of the nine countries with available data, five have connected more than 90% of their schools, whereas three report connectivity in only up to 50% of their institutions. Regarding upper-secondary schools (Graph 09), six out of nine countries fall into the "advanced" or "target met" levels, while one is at the "satisfactory" level, and two remain in the "limited" progress category. Finally, for the general indicator of secondary schools with Internet access (Graph 10), among the ten countries with data, four have reached the "target met" level, one is at the "advanced" level, two are classified as "satisfactory," and three remain at the "limited" level.

These heterogeneous results may partially reflect outdated or incomplete data, but they may also signal deeper structural challenges in achieving universal school connectivity. Either way, they underscore the urgency of advancing policies and investments aimed at equipping educational institutions with the digital infrastructure necessary for quality learning.

In an increasingly digital world, ensuring that all schools have access to the Internet and digital technologies is not only a matter of educational equity but also a strategic priority for sustainable development. For BRICS countries—marked by vast geographic areas, diverse populations, and uneven infrastructure—closing the connectivity gap in education is essential to promoting inclusive growth, empowering future generations, and strengthening national capacities for innovation and global competitiveness. Without reliable digital access in schools, students risk being left behind, limiting the transformative potential of digital inclusion in education

Finally, to conclude this section, the three indicators currently available on the ITU UMC Dashboard that measure gender parity in relation to Internet access, as well as mobile phone use and ownership, will be presented below. These indicators will also be discussed jointly.

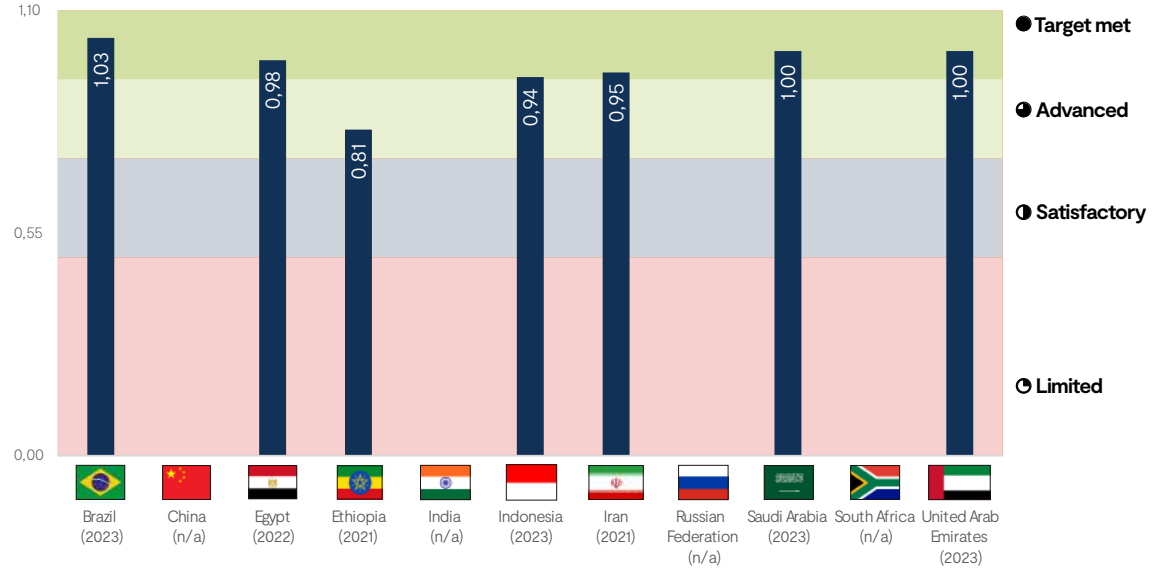
Graph 11: Internet use gender parity, by BRICS countries



Progress status	Countries
Limited	0
Satisfactory	2
Advanced	1
Target Met	7
Total countries	**10**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

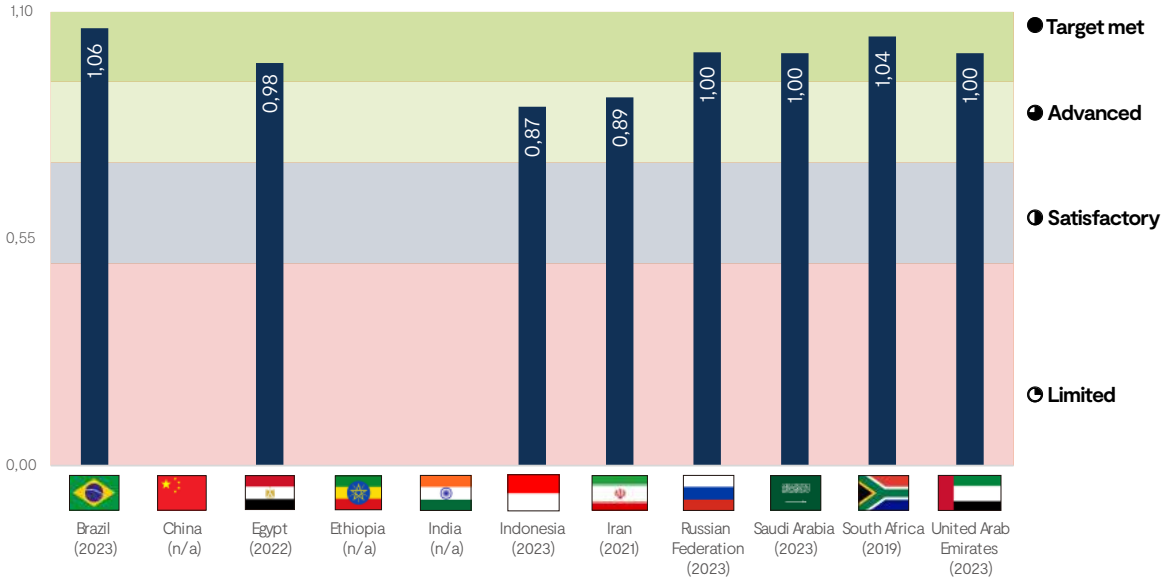
Graph 12: Mobile phone use gender parity, by BRICS countries



Progress status	Countries
Limited	0
Satisfactory	0
Advanced	1
Target Met	6
Total countries	**7**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

Graph 13: Mobile phone ownership gender parity, by BRICS countries



Progress status	Countries
Limited	0
Satisfactory	0
Advanced	2
Target Met	6
Total countries	**8**

Source: Prepared by the author, based on https://datahub.itu.int/dashboards/umc.

The three charts above present the available results from the ITU UMC Dashboard concerning gender parity in relation to Internet usage and mobile phone use and ownership. In these cases, not all countries have data available, and among those that do, the reference years vary significantly, ranging from 2018 to 2023. The results indicate that parity is considered achieved when the indicator reaches a value of 1.0, which corresponds to the ratio between the proportion of men and women who share a given condition.

With respect to Internet usage (Graph 11), gender parity is already observed in 7 out of the 10 countries for which data is available, and no country is classified at the limited progress level. Regarding the gender parity indicator for mobile phone use (Graph 12), data is available for only 7 countries. In this case, 6 of the 7 countries are at the target met level, and the remaining country is at the advanced level. Finally, 8 countries provide data for the mobile phone ownership gender indicator (Graph 13), with 6 already at the target met level and the other 2 classified at the advanced level. Across all three indicators assessed on gender parity, among countries with data available, none are positioned at the limited progress status level.

The results are quite positive for the BRICS group of countries. Nevertheless, it is important to highlight that these are basic indicators of access and use. On the one hand, it is essential to acknowledge that mere access does not necessarily capture potential disparities in the effective use or benefit, especially from a gender perspective. It is necessary to deepen the analysis and develop indicators that allow for a gender-sensitive assessment of the opportunities made available and the benefits derived from digital engagement, which is generally where inequalities tend to manifest. On the other hand, even for indicators that already suggest a favorable status—such as those presented here—continuous monitoring is fundamental. The guarantee of rights requires sustained oversight and commitment to ensure that progress is maintained and that policies remain responsive to emerging gaps.

Concluding remarks

The findings presented in this report underscore the evolving nature of digital inclusion and the growing consensus that UMC must serve as the guiding standard for both measurement and policy action. This paradigm reflects a deeper understanding of connectivity as a multidimensional construct—one that extends beyond availability and infrastructure to include quality, affordability, usage, security, and, critically, the digital competencies of individuals. Achieving UMC requires more than expanding networks; it demands holistic strategies that consider people's ability to effectively participate in the digital environment.

The definition of UMC, as established in global frameworks, carries profound policy implications. Simply striving for universal access or usage is no longer sufficient.

Instead, connectivity must be meaningful—empowering people to take full advantage of online opportunities while managing associated risks. This requires not only access to adequate infrastructure and devices, but also strong foundations in digital literacy and skills. Without such competencies, connectivity remains superficial and unequal, and the transformative potential of digital technologies cannot be fully realized.

Yet, despite its centrality to the concept of UMC, digital skills remain notably absent from most datasets currently available. This represents a critical gap. As highlighted throughout the report, progress in areas such as access, affordability, and gender parity are promising. However, without assessing whether individuals possess the skills necessary to engage online in safe, productive, and informed ways, it is impossible to gauge the true inclusiveness of digital societies. Investing in the development and refinement of indicators to measure digital skills—across levels, age groups, and regions—must become an immediate priority. These indicators are essential for identifying who is being left behind and for designing targeted interventions to close persistent gaps in participation and opportunity.

The importance of measurement itself cannot be overstated. Without timely, accurate, and relevant data, policymakers lack the tools to understand evolving challenges or to implement effective and equitable responses. Strengthening national statistical capacities for ICT data collection—especially in terms of coverage, frequency, and methodological consistency—is vital. Moreover, making granular and disaggregated data available is essential for uncovering disparities hidden by national averages. This is particularly crucial in countries marked by social and geographic diversity, where localized inequalities can profoundly shape the digital experience.

Ultimately, sustained investment in measurement is not only a technical necessity, but a strategic one. It supports evidence-based policymaking, enhances international cooperation, and helps countries align with global development agendas such as the Sustainable Development Goals. By measuring what truly matters, BRICS countries can move toward connectivity that is not only universal, but also inclusive, empowering, and transformative.

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