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T20 Policy Brief

Task Force 05

INCLUSIVE DIGITAL TRANSFORMATION

Strategies for collecting demand-side data on digital technologies for informed policies in the Global South

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TF05

Abstract

The T20 aims to promote an “inclusive, sustainable, participatory, and fair global economy”, supporting the SDGs set out in Agenda 2030. This emphasis has placed digitalisation on the core agenda of G20. It is central to SDG 9, which targets universal ICT access, and ICTs are linked to SDGs 3, 7, 12 and 13. Increased access and use of digital technologies will also result in positive progress across all 17 goals. Currently, however, we do not have data to assess progress towards these targets.

A key issue constraining policymaking to stimulate digital technology adoption in the Global South is the lack of data. This is particularly so in Africa where most individuals do not have any digital footprint. Compounding digital inequality, the increasing diffusion of AI poses new harms as the giant social networking databases feeding AI systems have no visibility on hundreds of millions of people in the majority world, hence outcomes will ignore, underrepresent or discriminate against them.

The inclusion of the African Union as a permanent G20 member, and the multi-stakeholder nature of T20 engagements, provides an invaluable platform to have constructive debates around the issues holding back digitalisation in Africa as the region with the lowest internet penetration rates, and identify interventions which can address the paucity of data to inform evidence-based policy.

Brazil is another example from the Global South grappling with structural inequalities. However, it possesses well-documented historical data on how the population access and use digital technologies. This makes it a valuable case-study both for the collection of public data and for strategies to measure and address digital inclusion barriers.

This policy brief will highlight the current digital data gaps, particularly in nationally representative demand-side data. Recommendations will then centre around strategies to gather reliable digital statistics as a global public good, showcasing innovations which



have achieved this at a national or regional level, and propose interventions which could lead to their realisation at a global scale.

Keywords: Digitalisation, inequality, sustainable development



Diagnosis of the Issue

Digitalisation, as a global phenomenon, has impacted all areas of human activity. Digital technologies have opened new avenues for sustainable development and created opportunities to integrate previously unreachable individuals into socioeconomic activities. However, there remain gaping inequalities that reflect the underlying structural socioeconomic inequalities in societies. As more activity moves to online channels, digital inequalities therefore threaten to not just replicate but also exacerbate existing inequalities between countries and within countries (Gillwald and Partridge 2022). As the G20 looks to promote social inclusion and development which is socially, economically and environmentally sustainable, digital technologies offer a valuable tool to progressing towards the Sustainable Development Goals to which the G20 is committed, but digital inclusion also needs to be prioritized as a fundamental issue to address to advance inclusive sustainable development.

Being able to apply evidence-based policymaking to address digital inclusion is challenged by the lack of digital data in the developing world, particularly in Africa where it is estimated that more than 60% of individuals do not use the internet at all. This lags far behind the rest of the world with the next lowest region being Asia and Pacific where only just over a third of individuals remain offline. At the other end of the scale, 90% of people in Europe are online (International Telecommunication Union 2023). Even this statistic may overestimate the extent of internet use in Africa as most countries do not have official data capturing this and hence the majority of African countries indicators rely on projections from historic data from only a few African countries where data is available. However, recent data collected from household statistics reveals that growth rates in access, and changes in inequality, are not consistent over time, nor are they similar

across countries comparable in terms of the economic environment and base level of digitalisation (Figure 1).

Addressing the need for more accurate digital access and use indicators is critical but also only the tip of the iceberg. Evidence-based policymaking for inclusive digitalisation requires a depth of data which is currently in short supply. Limited digital indicators in official national surveys such as censuses do not provide the detail required to properly understand digitalisation dynamics. Whilst big data sources have provided a valuable opportunity for data to inform policymaking processes, they are inherently restricted to only capturing those who are already online, thereby ignoring the majority of individuals in countries where the need is greatest. There is a critical need therefore for improved data solutions in the developing world, to feed into evidence-based policymaking, as well as more detailed indicator systems to monitor and evaluate progress.

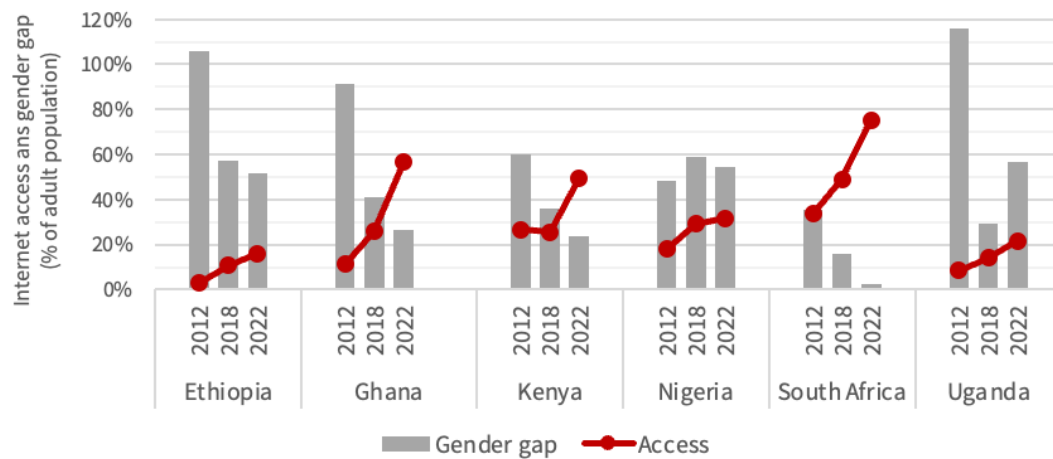


FIGURE 1: Access and gender gap across six African countries, 2012-2022. Source: RIA (2012; 2018; 2022a)

Data collection immediately raises red flags around data privacy and surveillance concerns. Besides being indispensable, data must be produced and made available

transparently. Transparency in data fosters accountability, trust, quality, informed decision-making, innovation, and fairness. It reduces the risk of hidden agendas or biased decision-making processes. As the G20 is currently looking for areas of reform amongst global governance institutions, it is an ideal opportunity to introduce governance systems within institutions responsible for data collection through which access to data can be ensured while robustly protecting personal data.

Recommendations

It is recommended that the G20 establish a data solidarity fund to be used for funding the collection of nationally representative household surveys on digital technology access and use, with a focus on Africa and other countries at similar economic statuses and levels of digitalisation. This should be coupled with the establishment of key working groups to support the work of the fund.

While the International Telecommunications Union acknowledges the paucity and patchiness of its digital indicators, since it is dependent on the data provided by the countries, Brazil could serve as a valuable model for collecting consistent and comprehensive data on the population's digital access and use. Studies conducted regularly by Cetic.br provide representative national insights, enabling the development of more effective public policies tailored to address historical inequalities and enabling policy monitoring. In the short term, there is a need for organizations such as Cetic.br, as well as others which have successfully been carrying out household surveys on digital access and use (e.g. Research ICT Africa, Sub-Saharan Africa; LirneAsia, East Asia; IEP, Latin America) to play a central role in the design and implementation of the surveys.

Given the fact that Africa lags so far behind the rest of the world in terms of digital access, it should be prioritised for data collection. This is a good opportunity with the appointment of the African Union as a G20 organisational member, that African countries are able to have a strong voice on a sound empirical basis in discussions and that solutions are aligned with country contexts. In the long run, however, this should also be scaled to the global stage.

In Africa, as in much of the developing world, microenterprises are an important consideration for female empowerment, yet there are significant gender gaps in terms of accessing the internet for business activities (Figure 2). It is therefore recommended that household and individual surveys be implemented in parallel with microenterprise surveys wherever feasible. This approach will enable the development of solutions to effectively promote microenterprise digital technology adoption.

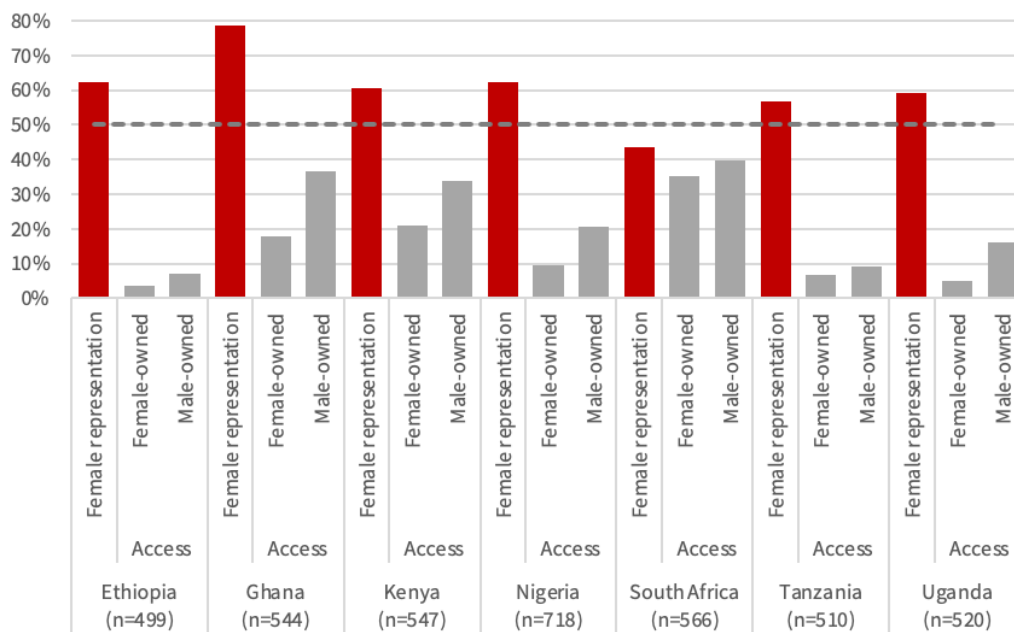


FIGURE 2: Share of microenterprises which are female-owned and internet access rates by gender. Source: RIA (2022b)

Experiences in data collection in Africa revealed the importance of working closely with local country partners and obtaining the support of National Statistics Offices. It would therefore be recommended to work with appropriate local organisations on survey implementation in each country. To ensure the sustainability and local ownership of initiatives, efforts should also be focused on capacity building with the goal of giving local organisations a more central role.

The data to be collected should follow four core principles:

1. **Able to be disaggregated simultaneously across multiple layers:** Population segments tend to be treated as homogenous groups. However, research shows large variation in digital access within population segments. The gender breakdown of access levels over additional segmentations in Figure 3 shows the heterogeneity of gender groups. This highlights how gender gaps are exacerbated by structural inequalities which result in females being disproportionately concentrated in the groups with lower access rates.

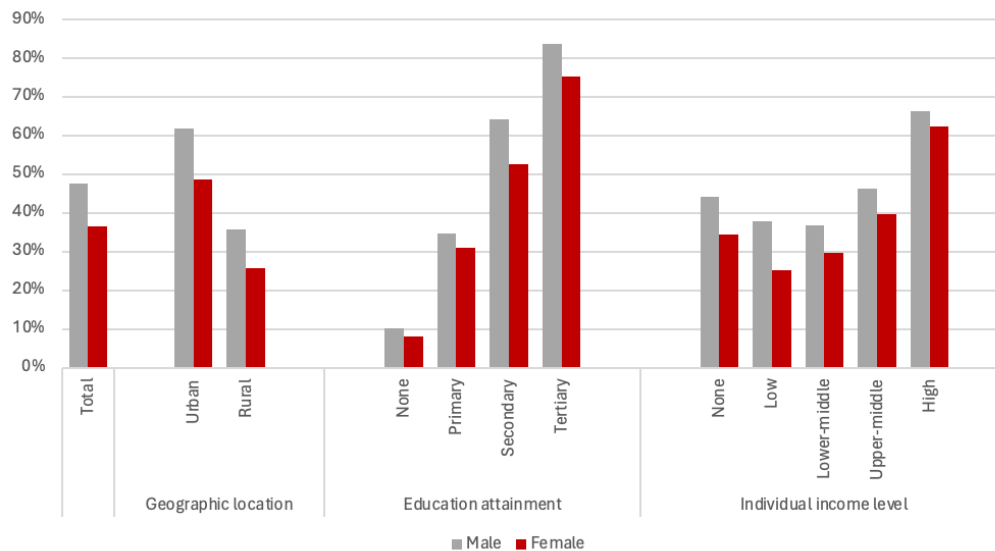


FIGURE 3: Gender access rates by location, education, and income in Africa. Source: RIA (2022a)

Intersectional inequality effects differ across countries (Appendix A). Being able to see what layering of population segmentations leads to the elimination of gender gaps reveals the relative impact of structural inequalities on digital inequalities, highlighting the points of intersections to target to promote digital inclusion.

2. Capture the unconnected: Understanding the barriers preventing individuals from getting online requires understanding the unconnected, their day-to-day needs and the specific access barriers they face. Using available digital datasets will ignore these individuals who should be the core focus of digitalisation policies.

3. Move beyond access to also look at use and meaningful connectivity: Being able to derive socioeconomic benefits from digital technology adoption entails using them in a particular way. Even where access has been achieved in Africa, use has been predominantly for social interactions and entertainment, rather than for economically beneficial activities, such as online work and accessing government or professional services (Figure 4).

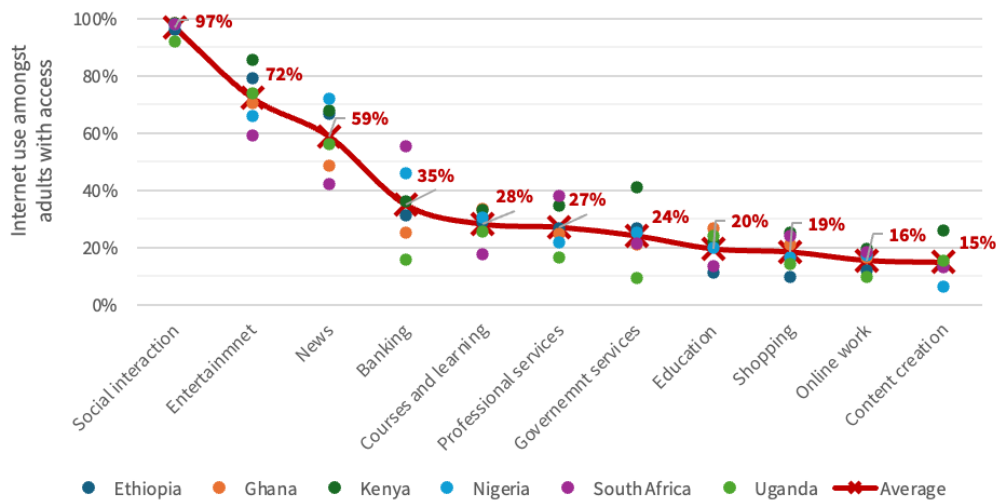


FIGURE 4: Uses of the internet by users in Africa. Source: RIA (2022a).

Not only do fewer people use services with direct economic benefits, but there is also significant gender inequality (Appendix B). Being able to identify the use cases where these inequalities are greatest is therefore important for policy consideration to ensure not just equal access but also equal ability to derive meaningful use.

In Brazil currently, 84% of the population are Internet users (NIC.br 2023). However, a recent study on meaningful connectivity levels among the population showed that only 22% of individuals have reasonable connectivity conditions, considering factors such as connection quality, affordability, access to devices, and usage environment (NIC.br 2024). The results reveal the need for a review of policies to address digital inclusion in Brazil. This observation was only made possible by the existence in Brazil of a robust household sample survey conducted by Cetic.br for almost 20 years, the ICT Household survey. Brazil could serve as a valuable benchmark for other developing countries on how to establish a robust and sustainable data collection structure.

4. Data collection needs to be demand-side focused: Digitalisation policy in developing countries in Africa tends to have a strong focus on building infrastructure. Whilst infrastructure is critical, the main barriers to Internet access and limitations on use are overwhelmingly demand-side issues (Figure 5). Even if a country builds the most state-of-the-art infrastructure, inclusive digitalisation will remain elusive if individuals lack the skills and resources to be able to adopt the available digital technologies.

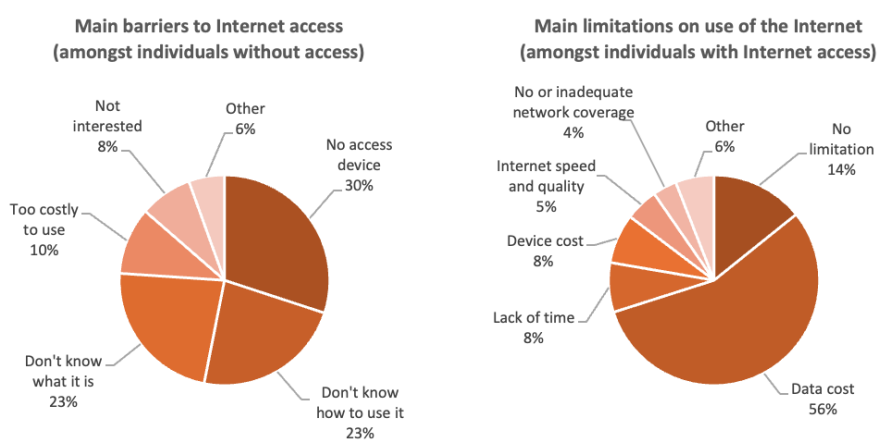


FIGURE 5: Barriers to internet access and limitations to use in Africa. Source: RIA (2022a)

The relative importance of barriers and limitations only varies slightly across countries with demand-side factors consistently and overwhelmingly the main issue (Appendix C and D). As it is therefore critical that policies address demand-side barriers and limitations, data for evidence-based policymaking needs to be able to capture these factors at the individual, household and microenterprise level.

To ensure the principles are upheld in data collection and that surveys are implemented consistently to allow comparability across countries, working groups need to be established to: (i) govern survey processes, including the identification of countries for implementation; (ii) create a space for knowledge sharing and collective problem solving;

(iii) provide a link between survey implementation and the research community to ensure the quality of the survey data and that the data collected addresses policy agendas; and

(iv) promote systems for data storage and protection in line with protocols and regulations established by global governance institutions.

The G20 should explore different avenues for funding the digital solidarity fund, and potentially adopt a blended approach consisting of several funding streams.

- **DNS subscription fees:** The use of DNS subscription fees to support household surveys is an approach which has been highly successful in Brazil. Expanding this model globally, even if only committing 1% of DNS subscription fees, would provide crucial data on digital access and usage. It would also be progressive as contributions would inherently be higher for countries at higher levels of economic development with more established ICT sectors. As DNS fees are linked to digital customers, providers would still ultimately benefit as the increase in revenues from new customers as a result of more inclusive digital policies should outweigh the costs incurred.
- **Donor funding:** Donor funding, on which most of the public domain data collection outside of government for universal access initiatives and the critical evidence base for policy making, has increasingly been diverted to AI and open data projects. For donors, whilst the main objective is policy impact it also creates an evidence base through which to guide other initiatives and to monitor and evaluate progress. As donor funding is provided on an ad-hoc basis, it does not guarantee continuity and sustainability without long-term commitments.
- **State support:** Whilst governments stand to benefit directly from the laid-out initiative, it would be a significant cost burden to place on national governments, especially given the need to target low-income countries. Therefore, it would be

recommended for State support to be more in terms of capacity and providing buy-in from National Statistics Offices to avoid unnecessary costs which can arise in sampling and data collection permissions.

The collection of demand-side data is of paramount importance, to allow policies and strategies at the international, regional, national, and subnational levels to ensure that digitalisation is a contributor to sustainable development and does not itself lead to a widening of inequalities - between countries of the developed and developing world, and between population segments within countries. The expenses of collecting data are likely to be much smaller compared to the long-term benefits for economies as data enables improved policy planning and targeted interventions, which can lead to substantial economic gains. Even more crucially, incorrect policy decisions due to lack of information can harm sustainable development in the long run.

Scenario of Outcomes



The main output from this initiative will be longitudinal demand-side data on digital technology and use which can be a highly effective tool for informing policy to drive inclusive digitalisation in Africa, and the rest of the developing world.

Building a system to develop a robust evidence base of demand-side data on digital access and use will allow policies in the developing world to effectively address digital inclusion, ensuring that all individuals are able to benefit from global digitalisation trends, thereby promoting inclusive sustainable development at a global scale. There will be indirect positive spillovers into other policy agendas as a more digital society allows more accurate identification of socioeconomic needs.

The benefits of this approach are expected to significantly outweigh the costs. Moreover, the cost of inaction is expected to be high. If the current digital access and use gaps are not addressed, the increasing digital substitution of activities threatens to exacerbate current socioeconomic inequalities. The rise of artificial intelligence adds additional importance as AI platforms rely on large digital datasets which essentially ignore the unconnected leading to misrepresentation of countries with low levels of digital access and biases against marginalised groups.

The increasing interest in new and “exciting” technological developments such as AI has also brought additional competition for resources for demand-side data on access and use. This can be seen in a decrease in household surveys on digital access and use. The 2008 version of the After Access surveys in Africa were able to cover 17 countries. A decrease in funding restricted this to 13 countries in 2012, 10 in 2018 and only 8 in 2022. If funding continues to get diverted into other areas, the gap in data needed to address the

core of digital inclusion will widen. This will be to the increasing detriment of least developed countries and particularly of marginalised groups.

Recognizing connectivity as a fundamental right is a crucial step in a society's digital transformation. Ensuring that everyone, regardless of socioeconomic background or geographical location, has access to and uses the internet effectively is not just progress, but a necessity for digital, economic, and social inclusion, as well as social justice. In this regard, data is essential to ensure the effectiveness of policies that leave no one behind and do not perpetuate or exacerbate existing inequalities.

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Appendices

Appendix A: Gender gaps by demographic breakdown

		Total	Income bracket				Educational attainment				
			None	Low (0-25%)	Lower-middle (25-50%)	Upper-income (50-75%)	High (75-100%)	None	Primary	Secondary	Tertiary
Ethiopia	Access	16%	15%	7%	10%	16%	33%	3%	20%	39%	68%
	Gender gap	52%	64%	82%	37%	10%	40%	123%	22%	44%	15%
	Location gap	167%	190%	112%	189%	125%	92%	44%	67%	60%	65%
Ghana	Access	57%	51%	37%	55%	59%	84%	15%	50%	76%	71%
	Gender gap	27%	15%	30%	43%	32%	-2%	36%	30%	10%	23%
	Location gap	42%	54%	44%	14%	32%	22%	40%	36%	18%	24%
Kenya	Access	50%	42%	34%	40%	54%	79%	10%	29%	64%	91%
	Gender gap	23%	24%	58%	13%	-7%	5%	26%	-11%	18%	7%
	Location gap	58%	69%	58%	36%	25%	22%	118%	34%	28%	12%
Nigeria	Access	32%	23%	22%	23%	29%	60%	2%	12%	41%	81%
	Gender gap	54%	67%	106%	19%	30%	18%	6%	6%	40%	13%
	Location gap	75%	79%	77%	58%	69%	60%	38%	68%	34%	22%
South Africa	Access	75%	71%	76%	55%	79%	94%	19%	64%	88%	99%
	Gender gap	2%	1%	8%	-16%	-4%	-8%	-26%	2%	-4%	1%
	Location gap	23%	23%	15%	8%	26%	8%	92%	14%	6%	3%
Uganda	Access	22%	26%	0%	16%	22%	39%	5%	22%	45%	69%
	Gender gap	57%	57%	144%	89%	77%	15%	95%	15%	45%	11%
	Location gap	110%	76%	228%	126%	62%	113%	123%	98%	51%	17%
Average	Access	42%	38%	29%	33%	43%	65%	9%	33%	59%	80%
	Gender gap	36%	38%	71%	31%	23%	11%	43%	11%	26%	11%
	Location gap	79%	82%	89%	72%	57%	53%	76%	53%	33%	24%

Source: RIA (2022a)

Appendix B: Gender gaps in specific uses of the Internet

		Social interaction	Entertainment	News	Banking	Courses and learning	Professional services	Government services	Education	Shopping	Online work	Content creation
Ethiopia	Usage	96%	79%	67%	31%	29%	27%	27%	11%	10%	12%	14%
	Gender gap	0%	0%	13%	27%	-23%	38%	38%	-8%	-51%	50%	-7%
	Location gap	3%	7%	20%	85%	51%	94%	99%	0%	105%	38%	123%
Ghana	Usage	98%	71%	49%	25%	34%	25%	21%	27%	21%	17%	15%
	Gender gap	2%	-12%	13%	7%	-15%	-13%	9%	-11%	-28%	7%	-53%
	Location gap	4%	27%	61%	103%	59%	75%	70%	90%	111%	99%	88%
Kenya	Usage	98%	85%	68%	36%	33%	35%	41%	22%	25%	19%	26%
	Gender gap	1%	1%	14%	38%	15%	31%	35%	42%	1%	56%	6%
	Location gap	-1%	6%	8%	64%	21%	46%	27%	39%	110%	49%	-15%
Nigeria	Usage	98%	66%	72%	46%	30%	22%	25%	20%	17%	17%	6%
	Gender gap	1%	0%	7%	-19%	4%	19%	26%	8%	-29%	27%	26%
	Location gap	0%	-5%	-9%	18%	-8%	72%	23%	22%	84%	73%	29%
South Africa	Usage	98%	59%	42%	55%	18%	38%	22%	14%	24%	18%	13%
	Gender gap	0%	13%	14%	-1%	-14%	12%	18%	4%	8%	15%	27%
	Location gap	1%	11%	14%	14%	1%	-23%	49%	5%	97%	13%	11%
Uganda	Usage	92%	74%	56%	16%	26%	16%	10%	24%	14%	10%	16%
	Gender gap	-10%	1%	18%	17%	17%	83%	73%	-39%	-7%	8%	22%
	Location gap	8%	18%	-7%	-77%	7%	-5%	-21%	-10%	2%	47%	16%
Average	Usage	97%	72%	59%	35%	28%	27%	24%	20%	19%	16%	15%
	Gender gap	-1%	0%	13%	12%	-3%	28%	33%	-1%	-18%	27%	3%
	Location gap	3%	11%	15%	34%	22%	43%	41%	24%	85%	53%	42%

Source: RIA (2022a)

Appendix C: Main barriers to internet access amongst those without access

	Average	Ethiopia	Ghana	Kenya	Nigeria	South Africa	Uganda
No access device	30%	27%	32%	46%	23%	19%	31%
Don't know how to use it	23%	32%	19%	14%	25%	27%	20%
Don't know what it is	23%	26%	26%	17%	18%	21%	29%
Too costly to use	10%	10%	10%	5%	15%	12%	10%
Not interested	8%	3%	7%	8%	8%	17%	6%
No coverage	2%	1%	3%	5%	4%	1%	1%
No time	1%	1%	1%	1%	3%	1%	0%
Not allowed to	1%	0,3%	0%	2%	1%	0,4%	1%
Friends don't use it	0,2%	0,2%	0,1%	0,0%	0,3%	0%	0,5%
Privacy concerns	0,1%	0,1%	0%	0,3%	0,3%	0%	0%
Other	0,7%	0,2%	1%	0,4%	1%	1%	0,5%

Source: RIA (2022a)

Appendix D: Main limitations to internet use amongst those with internet access

	Average	Ethiopia	Ghana	Kenya	Nigeria	South Africa	Uganda
No limitation	14%	7%	7%	12%	22%	34%	4%
Data cost	56%	56%	65%	57%	47%	47%	64%
Lack of time	8%	17%	2%	8%	9%	4%	5%
Device cost	8%	4%	9%	7%	7%	5%	14%
Internet speed and quality	5%	6%	7%	3%	4%	2%	7%
Network coverage	4%	3%	3%	6%	4%	3%	4%
Electricity and power	2%	2%	0%	2%	3%	2%	1%
I find it difficult to use	1%	1%	2%	0,6%	0,9%	1%	0,8%
Nothing useful of interesting	0,6%	1%	0,7%	0,7%	0,3%	0,8%	0%
Privacy concerns	0,5%	0,7%	0,3%	0,8%	0,5%	0,5%	0,2%
Not allowed to use it	0,5%	0,1%	0%	0,4%	1%	0,1%	0,9%
Lack of content in my language	0,2%	0,0%	0,5%	0,0%	0,0%	0,2%	0,6%
Security concerns (viruses)	0,2%	0%	0%	0,1%	0,7%	0,2%	0%
Cultural or religious reasons	0,1%	0,3%	0%	0,3%	0,1%	0%	0%
Other	1%	1%	3%	2%	0,1%	0,1%	0%

Source: RIA (2022a)



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