COVID-19 Compounds Historical Disparities and Extends the Digital Divide

- **Low levels of smart phone and Internet penetration left most Africans stranded during COVID-19 pandemic-related lockdowns, compounding existing inequalities. Only a relative elite in these countries have moved seamlessly online digitally substituting their access to banking, food provision, schooling, work or social grants.**
- **With less than 10% of the informal sector owning a smart phone or having access to the Internet, it has been unable to serve as the usual buffer to exogenous shocks during the hard lockdowns in many countries, with the rupture of informal value and labour supply chains.**
- **There has been massive intensification of use for those connected, with Internet traffic in many countries more than doubling. This was mainly due to an increase in video-conferencing services like Zoom, Microsoft Teams and Skype and video streaming for entertainment, such as Netflix.**
- **This has driven unprecedented demand for data that has benefitted both mobile and fixed network providers with both MTN and Vodacom having delivered strong results despite socio- and macroeconomic challenges caused by the pandemic and mandatory price reduction imposed by the Competition Commission.**
- **Although these price reductions in South Africa have reduced the prices of the incumbent operators, the cheapest price for 1GB has not been reduced. Temporary spectrum granted to dominant operators was used to provide more bandwidth to those already online and pilot 5G services, with little attention to bringing those offline, online.**

Introduction

Due to the spread of the novel Corona virus in 2020 several countries in Africa including South Africa, Botswana, Egypt, Morocco, Tunisia and Zambia implemented partial or complete lockdowns. South Africa, with the earliest and highest infections, imposed one of the hardest shutdowns globally. The country closed international borders and restricted movement from homes for people not working in essential services other than for household essentials during limited hours and only with strict social protection measures.

While a relative elite in these countries moved seamlessly online, digitally substituting their banking services, food provision, schooling and office work, the vast majority of the continent have been left stranded creating an economic survival crisis on top of the health crisis. Several countries, initially trying to institute hard lockdowns, had to abandon these in the face of unrest and in some cases, legal orders on human rights grounds. For instance, in Malawi informal sector protestors complained that the 21-day lockdown would starve them to death, compelling the courts to set aside lockdown restrictions (Nemzoff et al., 2020). With Internet penetration standing at around 15-20% in least developed African countries such as Rwanda, Mozambique and Tanzania and bigger economies like Nigeria and Kenya standing at less than 30%, all with large numbers of people on small value data bundles, significant digital substitution such as remote work or online schooling was minimal.

With only around 7% computer ownership across the African countries surveyed in the 2018 After Access survey, the majority of individuals depend on mobile devices to connect to the Internet. However, despite 67% mobile phone penetration among the surveyed African countries, the majority do not own mobile devices with the capability to connect to the Internet. Similarly, of those who own a mobile phone, only a third own smartphones.

In South Africa, one of the countries with the highest Internet usage amongst surveyed African countries, although 46% of the population owned a smartphone, only 14% of households have a working computer/laptop. However, in other African countries, smartphone penetration has remained very low. For instance, in Ghana and Kenya less than 25% of the population owned a smartphone in 2018, while in Nigeria only 14% owned a smartphone device.

In fact, the parallel informal sector survey of ICT access and use in 2018 showed that across the 10 countries, on average, only 7% of informal sector traders used the Internet for business (and generally this was their private device, which similarly mirrors penetration in lower income groups). This means that the informal sector or survivalist economy has been unable to serve as the usual buffer to exogenous shocks during the hard lockdowns in many countries given the rupture of informal value and labour supply chains.

On the other hand, there has been massive intensification of use for those connected, with Internet traffic in many countries more than doubling. For instance, an immediate impact of the lockdown in Botswana was an increase of 62% and 58% in prepaid and post-paid data traffic (Mothobi, 2020). In South Africa, some operators reported more than 50% growth in mobile data traffic and more than 200% in fixed data traffic (Graham and Chivandire, 2020). This was mainly due to an increase in video-conferencing services like Zoom, Microsoft Teams and Skype and video streaming for entertainment, such as Netflix .

In some countries this was enabled by regulatory interventions to meet pent up demand for spectrum or the introduction of mandatory data price reductions. In South Africa, the regulator, the Independent Communications Authority of South Africa (ICASA), granted high demand spectrum to the dominant players who were in a position to deploy the additional spectrum immediately. Just prior to lockdown in 2020, the Competition Commission had coincidently mandated a 30% price reduction on dominant operators within three months of the ruling. This decision was preceded by a yearlong enquiry into data pricing. The effect was that those online by and large received more bandwidth for existing fibre or mobile data

subscriptions as well as reduced prices for pre-paid packages in the range required by the Commission (Chinembiri, 2020). While these effects would have provided relief to price sensitive users, what these measures fail to do is get those who are not online connected.

COVID-19 perpetuating digital inequalities and historical divides

The results of the After Access study (2018) conducted by Research ICT Africa in collaboration with LIRNEasia and DIRSI in Latin America, show that more than two thirds (72%) of people living in Africa do not use the Internet. The After Access survey (2018) further shows that the digital disparities are huge across and within the countries. Decidedly, South Africa was the only country that had more than 50% Internet adoption. Clearly, the migration of work and school during lockdown was only possible for a relative elite within these countries and will further increase disparities between rich and poor.

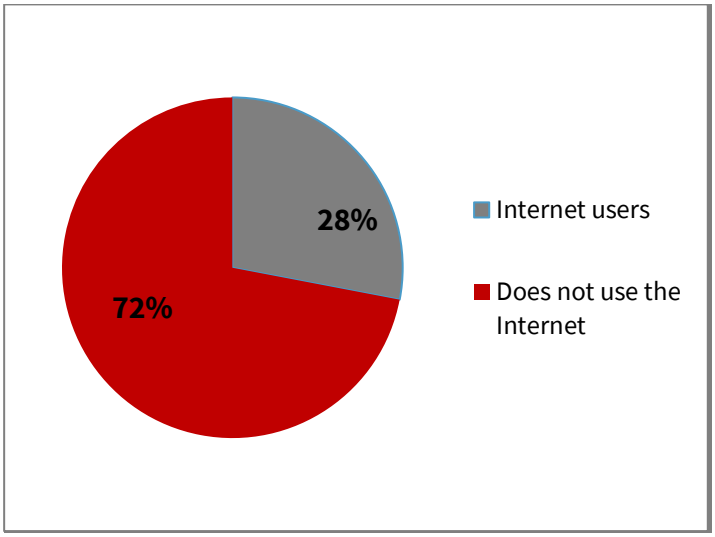

Figure 1: Internet use among 10 African countries

Source: Author compilation based on RIA After Access Survey, 2018

Prior to the pandemic, a sizeable number of households in developing countries did not have Internet connectivity, while an even larger number of young people do not have Internet skills to match the 21st century economy. As of 2018, only 5% of about 105 million households in ten African countries had an Internet connection. Of those who do not use the Internet, about 65% either do not know what the Internet is or do not know how to use it, and/or see the importance of the Internet. Hence current policies, which are meant to curb the spread of the virus, such as the "work from home" policy, are more likely to extend the existing digital divide, further perpetuating social inequalities that already divide countries and communities. Children from the poorest households in rural areas and least developed countries are likely to be falling further behind their peers who are able to digitally substitute their physical classroom. According to the RIA 2018 After Access survey, only 16% of people residing in rural areas use the Internet compared to 42% in urban areas. Moreover, the majority of those who live in rural areas lack infrastructure such as electricity

(43%), compared to 8% in urban areas, and in most cases, the Internet is not available in rural areas. Likewise, most of the African labour force cannot perform their work online. About 98% of households among the 55 million households in rural areas do not have an active Internet connection compared to 90% in urban areas and were unable to even financially transact, secure food and apply for social grants or unemployment insurance online.

Globally, 58% of school-age children from the richest households have Internet access at home, compared with only 16% from the poorest households (UNICEF, 2020). The same disparities exist across countries' income levels as well. Less than 5% of school-age children from low-income countries have Internet connections at home, compared with about 90% from high income countries. The digital divide is even higher in Africa where 95% of 42 million students who are 15 years and older live in households that do not have access (After Access 2018). Nearly 90% of the 40 million workers in these countries resided in households that do not have an active Internet connection. The survey also found that the majority of individuals who are self-employed (95%), mostly working in the informal sector, live in unconnected households (see table 1 below). In addition, more than 45 million workers in these countries work as domestic workers or in clerical jobs that cannot be done online. As offices close and the majority are expected to work virtually, these individuals are often more likely to lose jobs as the COVID-19 pandemic persists and continues to change the nature of work.

Table 1: Household Internet connection and employment status

Employment status	Household without working Internet	Household with working Internet
Student	94%	6%
Unpaid housework	97%	3%
Retired	91%	9%
Unemployed	99%	1%
Employed	89%	11%
Self employed	95%	5%

Source: Author compilation based on RIA After Access Survey, 2018

Delving deeper into the data in Table 1 with respect to the underlying reasons for the lack of an active Internet connection, 42% of households revealed that the cost of devices and infrastructure required to install the Internet is unaffordable (28%). Once connected, 14% attributed their low usage to prices of services being too high (see figure 2 below). Significantly, one fifth of respondents without Internet access expressed no need for the Internet, while 20% stated that they do not know how to use the Internet.

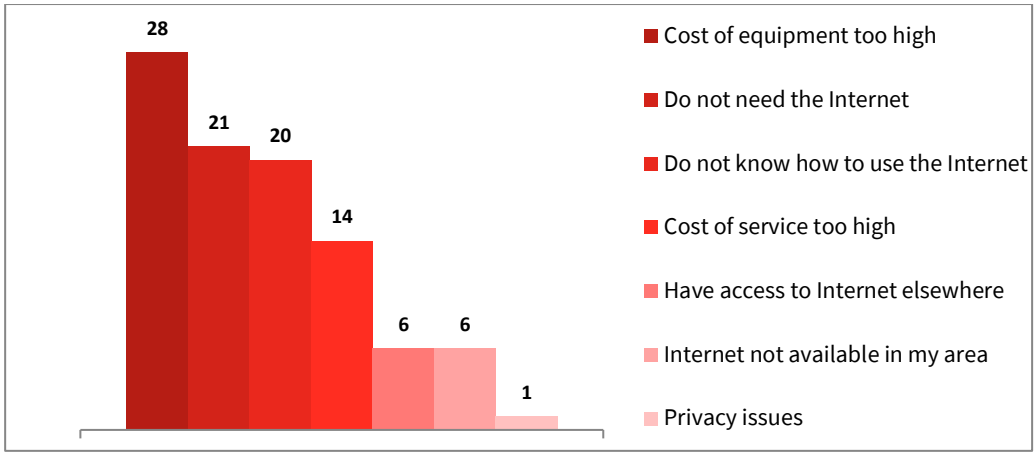

Figure 2: Reason for not having Internet connection among households

Source: Author compilation based on RIA After Access Survey, 2018

Despite the reduction in the cost of equipment and devices resulting in the proliferation of smartphones in Africa, the digital divide still exists among individuals in these countries. As the population is asked to stay home and turn to either their computers or smartphones to substitute their in-person activities online, to ensure continuity in some sectors such as the education sector, a number of African governments resorted to more traditional electronic communications such as television and radio with much greater penetration on the continent. Among the 10 surveyed African countries about 60% of households had a radio while 50% had a television set. Ownership of television sets is even higher in South Africa and Senegal, where 80% and 71% of households own a television set respectively. To ensure that virtual learning is a reality during the lockdowns, the public broadcaster in South Africa (the South African Broadcasting Corporation) and DSTV channel 180 availed channels entirely dedicated to education. On these channels, teachers delivered lessons live and in real time to learners.

A number of governments in Africa also went into partnership with private network providers to offer innovative solutions for scholars and students to access educational websites. In South Africa, Vodacom, Cell C and MTN, have zero-rated educational applications and websites. In Botswana, the incumbent operator Botswana Telecommunication Corporation via its mobile operator beMobile entered into partnerships with Universities in Botswana and provided students with a SIM card, 5GB monthly data and an additional 1GB daily data. Despite these governments' efforts to deal with affordability issues, a large percentage of individuals living in Africa who do not use the Internet, are digitally illiterate. Over 30% of individuals who do not use the Internet do not know what the Internet is, 12% are not interested in using the Internet and 18% do not know how to use the Internet. Furthermore, the After Access 2018 study shows that the majority of respondents do not have devices required to access the Internet. Among the surveyed countries, 76% of individuals who do not use the Internet do not have computers/smartphones -64% in Tanzania, 43% in Rwanda and 36% in South Africa (see figure 3 below).

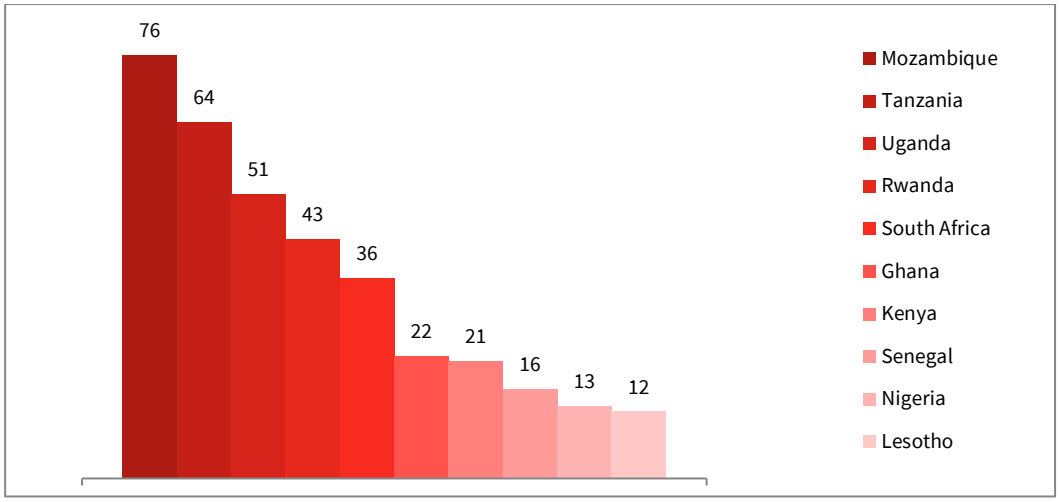

Figure 3: Percentage of non-Internet users who do not have devices

Source: Author compilation based on RIA After Access Survey, 2018

Connecting individuals who live in rural areas has been a formidable challenge even before the COVID-19 pandemic. Large parts of rural areas do not have access to either fixed Internet connections or mobile-broadband connections. The gap in Internet use among and between individuals who live in rural areas, and areas with better infrastructure, is also likely to increase as an aftereffect of the coronavirus. Of those who live in rural areas, only 21% use the Internet compared to 50% of Internet users in urban areas, generating a location gap of 56%. The location gap is even larger in Rwanda and Mozambique where less than 12% of Individuals residing in rural areas use the Internet. On the other hand, the COVID-19 "work from home" policy is likely to have differing effects on women who, compared to men, are less likely to have an Internet connection or access to the Internet, mainly due to affordability constraints. Students who live in female-headed households are more likely to be left out, as most of these households lack the necessary devices and technologies required to facilitate online teaching. Only 6% of women-headed households have an active Internet connection compared to 10% of households headed by men. Moreover, the survey shows that a significant gender gap in Internet connections, with about 40% of men using the Internet versus only 28% of women, resulting in a 30% gender gap across the surveyed countries. Hence, policies aimed at curbing the spread of COVID-19 are more likely to have a serious knock-on effect on women, even increasing existing inequalities between men and women.

Network operators to benefit from COVID-19

In sharp contrast to other industries, which have seen a drop in their economic activities due to COVID-19, the telecommunications sector has become the heart of many economies. As people were forced to work online, many countries saw a surge in demand for fixed wireless network, which had been growing at a fraction of the speed to mobile broadband services.

The sudden rise in data traffic has benefitted both mobile and fixed network providers. The sharp spike in demand for data and increased reliance on connectivity and digital services has benefitted some telecom operators. For instance, for the period ending March 2020, the Vodacom Group's revenue increased by 4.8% to R90.7 billion, with service revenue up by 5.0% to R73.4 billion. On the other hand, as of June 2020, the MTN Group reported a 9.4% increase in service revenue to R80.2 billion compared to R67.9 billion in 2019. The MTN Group's service revenue growth was mainly driven by impressive growth rates in MTN Nigeria (12.4%) and 19.4% in Ghana against the backdrop of unprecedented uncertainty and volatile economic activity as a consequence of COVID-19. Vodacom's international operations contributed 29.7% to Group services revenue against a 2.3% increase in South African services revenue. However, its international portfolio experienced a 12.5% decline in service revenue. A decline that the MTN Group attributes to the lost national roaming revenues arising from the discontinuation of the roaming agreement with Telkom and effects of the continued accounting for Cell C revenue on a cash basis.

Both MTN and the Vodacom Group have delivered strong results despite the socio and macroeconomic challenges caused by the COVID-19 pandemic. MTN saw growth of 10.9% in EBIDTA, while the group's EBITDA margin improved by 1,2pp to 43,1%. Vodacom, on the other hand, also realised a growth in Group EBITDA of 11.6% to reach R37.6 billion, while headline earnings per share rose 8.9% up to 945 cents per share (MTN Annual Report, 2020; Vodacom Annual Report 2020).

Commercial efforts to respond to increased demand for affordable data

On top of mandatory data reductions imposed by the Competition Commission just prior to the lockdown, mobile network operators embarked on a digital inclusion programme during COVID-19 in a bid to assist the majority of poor South Africans who cannot afford Internet data. Operators improved their zero-rated data services, which provided their customers with free access to various essential services including job portals, educational content, health and wellness information, and access to select government sites, such as Home Affairs, ambulance services, education sites and government communication services.

Mobile operators also responded to the Competition Commission's data market inquiry. Both MTN and Vodacom reduced their 30-day validity period 1GB data prices by a margin of about 40% from R149 to R99 for Vodacom and MTN from R160 to R99 to match the 30-day 1GB data offered by Telkom. Despite this being a phenomenal transformation in data pricing among the largest South African mobile operators, the discount might not be able to attract the poor who have been digitally excluded due to affordability issues.

On the other hand, as the Commission gets involved in the regulation of retail data prices, rather than regulating the access or wholesale market where the bottlenecks persist, this might lead to unintended uncompetitive results issues. For instance, as the price is reduced to levels that smaller operators are unable to match, price sensitive consumers might jump ship to the large operators who also provide quality services, reducing the already marginal market share of smaller operators, Cell C and Telkom. This, in turn, prevents them from

either gaining cost-based wholesale access in dominant operator networks (because it remains unregulated), perpetuating a vicious cycle of being unable to attract or retain customers because of the inferior quality of their networks as a result of not being as profitable as the dominant networks and thus being unable to invest and improve the quality of their networks (Gillwald, 2020). For example, despite the availability of the 30-day 1GB data offered by Telkom prior COVID-19 and the recent discounts, about 15% of those who do not use the Internet in South Africa stated that they cannot afford the Internet. This clearly shows that the current discount on the 1GB by the two big operators still excludes them.

Conclusion

The novel coronavirus has, in many ways, grossly affected the lives of people. In order to protect the health of the population and possibly curb the spread of the virus, countries around the world introduced containment measures including hard lockdowns as well as social distancing measures. For those with access to the Internet it became the means to safeguarding their health and mitigating the negative consequences of lockdown.

- Many African governments adopted the lockdown measures instituted to contain the virus adopted in mature economies of Asia and Europe. But the low levels of digital participation have rendered lockdowns unworkable in many African countries. For the majority who are reliant on marginal informal activities to earn small amounts of cash to buy food from a market, lockdowns became the difference between survival and starvation.
- On the one hand, for the unemployed, who are mostly the youth fending for their survival in the informal sector, lockdowns might cut their earnings, with adversity causing destitution. Evidence shows that only a relative elite were able to move seamlessly online and digitally substitute their banking, food provision, schooling and office work or even access business and unemployment relief or safely receive their social grants. For the majority of those who own an Internet enabled device, while depending on tiny, small value data bundles, significant digital substitution such as remote work or schooling is as unfeasible as not being connected. The pandemic and lockdown and the inequitable access to digital services have had a compounding effect on existing inequalities – between those who remained employed and the unemployed, those who live in urban and rural areas and between men and women.

Recommendations

- In some African countries, governments need to ensure extension of networks beyond major cities into rural areas. Government should review spectrum allocations and assignment to allow for the entry of far cheaper dynamic spectrum and satellite technologies to service rural areas and permit the entry of community and micro-operators to affordably meet pent up demand. 4G and 5G spectrum should only be licenced on condition national 3G obligations are met (or freed up for others to use) and on condition other operators can access the newly release spectrum. Operators can be incentivised to do this by their licence fees being

reduced in accordance with the degree to which they share their infrastructure/spectrum.

- While ICT has the potential to substitute most of our daily routines online, the high digital illiteracy rates among individuals and learners (even where broadband infrastructure may be available) make digital substitution impossible. This requires improvements in human development, and particularly education programmes that build ICT knowhow in junior and secondary schools. Programmes to increase digital literacy for older citizens marginalised from digital services can also be supported through community and NGO awareness and training initiatives.
- The cost of GSM devices (the dominant technology globally) is the primary barrier to those who are not coming online. Removing VAT, customs and excise duties (in some countries, as much as 30% of the cost) on entry level smart phones would go a substantial way towards improving their affordability for a significant number of people currently offline. Formal programmes that ensure that working contract phones are redistributed could have positive access, employment and e-waste outcomes.
- While strategies to ensure free wi-fi at public buildings are part of many e-government strategies that RIA has long advocated for should be pursued, these do not support people without the means to access the Internet from their homes whether wirelessly or through fixed broadband in a lockdown. Planning in the longer term for inevitable future pandemics requires policymakers to revisit older pre-wireless universal access strategies for home devices suited to online schooling and work in a wireless context. In South Africa, and elsewhere, the potential of subsidised digital broadcasting set top boxes to be Internet-enabled (as intended earlier on) to access low-cost wireless/satellite broadband should be reviewed. Other than increasing Internet penetration; this policy is likely to generate incomes for these families as they would be able to find jobs online while at the same time increasing participation of people in economic activities.
- Policy to leverage ICTs for economy-wide development should be well-integrated or transversal in nature, to enable the co-ordination of public and private initiatives and multiple state departments collectively working together for optimal outcomes, holistic interventions and an interoperable system. Digitalisation of the public sector, which lags in many African countries, even the largest economies on the continent such as Nigeria and South Africa will stimulate economic activity, reduce transactional costs and improve information flows.
- The pandemic has exposed the poor ability of key government departments to leverage digital technologies in providing critical public services. In many African countries, financial services providers and mobile network operators rose to the occasion and made efforts to reduce digital transition hurdles by implementing initiatives to mitigate the negative effects of the extended COVID-19 Lockdowns in many countries. Going forward, African governments need to foster effective partnerships with the private sector not only during the pandemic, but also to facilitate an enabling environment to build post-COVID-19 resilience.

_____

Sign up here for RIA's newsletter, which includes information about the release of new policy briefs.

Authors

Mothobi Onkokame and Alison Gillwald

Enquiries

info@researchictafrica.net | communications@researchictafrica.net

Workshop17, 17 Dock Road, V&A Waterfront, Cape Town, 800

T: +27 214476332

W: www.researchictafrica.net

References

Gillwald, A. (2020). South Africa's mobile market: the bottlenecks blocking competition. Research ICT Africa Policy Brief. Accessed at: https://researchictafrica.net/2020/03/03/south-africas-mobile-market-the-bottlenecks-blocking-competition/

Chinembiri, T. (2020). Despite redustcion in mobile data tariffs, data still expensive in South Africa. Research ICT Africa, Policy Brief 2. Accessed at: https://researchictafrica.net/wp/wp-content/uploads/2020/06/Tapiwa-Chinembiri-Mobile-Data-Pricing-Policy-Brief2-2020-FINAL.pdf

Graham, D. and Chivandire, G. (2020). Telcos is a post-COVID-19 South Africa. Deloitte. Accessed at: https://www2.deloitte.com/content/dam/Deloitte/za/Documents/technology-media-telecommunications/za-Telcos-V4.pdf

Nemzoff C., Chalkidou K., Walker D., and Sullivan R. (2020). Are Strict Lockdowns Feasible in Malawi? Centre for Global Development. Accessed at https://www.cgdev.org/blog/are-strict-lockdowns-suited-populations-who-live-hand-mouth-closer-look-malawi

Mothobi, O. (2020). COVID-19 Restrictions and Economic growth in Botswana. A New Dawn Unleashed Amid COVID-19. Botswana Stock Exchange Limited News. Issue No.12. Accessed at e.co.bw/wp-content/uploads/2020/10/BSELNEWS-OCT-DEC-ISSUE-final.pdf

MTN Annual Report. (2020). Annual Financial results for the year ending December 2020. Accessed at: https://www.mtn.com/wp-content/uploads/2021/03/MTN-Results-Long-form.pdf

UNICEF. (2020). Two thirds of the world's school-age children have no Internet access at home. Accessed at: https://www.unicef.org/press-releases/two-thirds-worlds-school-age-children-have-no-internet-access-home-new-unicef-itu

Vodacom Annual Report. (2020). Integrated Report for the year ending 31 March 2020. Accessed at: http://vodacom-reports.co.za/integrated-reports/ir-2020/