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Leaving no one behind in digital delivery of public services: The case of online business registration in Tanzania

Dennis N. Mwigusa
Lanta Daniel
Bitrina Diyamett

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Preface

Governments worldwide are increasingly relying on digitalisation for public service delivery. The effects of the COVID-19 pandemic significantly accelerated this trend. However, existing structural inequalities in access and use of ICT risk leaving behind historically marginalised populations and creating new groups of disadvantaged people. Therefore, it is crucial to understand the opportunities and challenges presented by the transition to digital public services in the Global South.

Southern Voice partnered with the *Centre for Budget and Governance Accountability* (CBGA), the *Instituto de Estudios Peruanos* (IEP), and the *Science, Technology and Innovation Policy Research Organisation* (STIPRO) to explore the impacts of the rapid digitalisation of public services caused by the pandemic. Through a cross-country collaboration between India, Peru and Tanzania, new evidence was gathered regarding online learning experiences at the secondary and tertiary levels of education, as well as in online business registration. The findings allow us to reflect on common challenges arising in different contexts, and envision some of the steps forward. The initiative was part of the COVID collective research platform, led by the Institute of Development Studies (IDS).

The present study, authored by the *Science, Technology and Innovation Policy Research Organisation*, explores opportunities and challenges in the use of a government-led digital platform for business registration in Dar es Salaam, which gained momentum during the pandemic. The study provides insights into the perspectives of Tanzanian business owners around digitalisation and ICT, and how digital public services can be improved to empower entrepreneurs, particularly women.

We expect this publication to shed light on key public policy initiatives and reforms required to advance digital inclusion and gender equity in economic and financial services.

Rose Ngugi

Chair, Southern Voice

and

Executive Director, Kenya Institute for Public Policy Research and Analysis (KIPPRA)



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Abstract

This study uses the case of online business registration to provide insights into how increased digitalisation in service delivery has impacted women in Tanzania. It analyses the use of ORS, the online registration system created by the Tanzanian government for entrepreneurs to register their businesses online as an alternative to the in-person process. The methodology included an online questionnaire administered via random sampling and a purposive selection of key informants, who offered in-depth information about the key emerging issues.

The findings generally reveal that although women make use of digital tools in their daily activities, there is a substantial access gap between men and women. While many have access to digital tools, especially smartphones, affordability of internet bundles is a major obstacle towards closing the digital divide. Digital literacy, both in the use of gadgets and the internet, is yet another cause of the digital gap. The study recommends various interventions at national and global levels to remedy the situation. These include joint action between the government and private sector actors in creating a conducive and inclusive environment for digitalisation; it also calls upon development partners and multinational organisations to prioritise grants and programs that would bridge the digital divide.

Authors

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Acronyms and abbreviations

BRELA	Business Registrations and Licensing Agency
ICT	Information and Communication Technologies
IT	Information Technology
ORS	Online Registration System
STIPRO	Science, Technology and Innovation Policy Research Organisation

Leaving no one behind in digital delivery of public services: The case of business registration in Tanzania

*Dennis N. Mwigusa
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Introduction

The increasing reliance on information and communication technologies (ICT) and digitalisation boosted by the need to adapt to a new normal during the COVID-19 pandemic brings challenges as well as new opportunities for sustainable development and good governance. This is especially the case for countries in the Global South such as Tanzania, where the use of digital technologies is continuously expanding. However, the poor state of digital infrastructure has given rise to a digital divide between different groups of people. For historically marginalised groups such as women, the digital divide has widened, affecting the long-term ability of governments to deliver services to them appropriately. According to the Global System for Mobile Communications Association 2019 report on the mobile gender gap, only 17% of Tanzanian women have access to the internet compared to 35% of men. This gap may further enlarge the socioeconomic gap between men and women.

Level of digital access has wide-ranging implications for economic growth, governance, human rights, and inequality. It affects a person's ability to learn about available opportunities as well as to make use of different online services, such as online courses, investor-entrepreneurs matchmaking platforms, online banking, and other digital products and services. Digital connectivity ensures communications between the public, government, and businesses, and whoever is left behind when it comes to digital access stands a higher chance of being disadvantaged. This is particularly the case for women, who have historically found it harder to gain access to new technologies than men (World Economic Forum, 2018; Drakett et al., 2018; BBC, 2018). This exclusion affects social welfare and economic growth across countries because informal economic activities—which women to a large extent spearhead—substantially contribute to developing countries' economies in terms of GDP and employment (Akintimehin et al., 2019; Diao et al., 2020). Various studies show that women-owned businesses are among the fastest growing and contribute significantly to employment and wealth creation (Nziku, 2016; Nziku & Struthers, 2018).

The informal economy is estimated to account for 34% of the national economy in Tanzania (Becker, 2004; Economic and Social Research Foundation, 2010), and good part of this economy is driven by women. According to Idris (2018) in Tanzania, for instance, women-owned enterprises make up 54.3% of all businesses, but over 99% of these are informal and microenterprises with fewer than five employees. Therefore, if policy action is to be effective in the era of the fourth industrial revolution that heavily relies on ICT, it must leverage digital tools, digital literacy, and the knowledge of all citizens, including women. Digital services and tools cut across many sectors and are essential for moving towards a digital world, that is, the use of e-services. However, without a proper design that takes into account the needs and challenges of users as well as the gaps in their knowledge, digital services will replicate existing inequalities instead of resolving them and thereby negatively impact the social and economic development of individuals and countries.

Against this background, the present study sheds some light on the differentiated impacts of the rapid increase in use of digital technologies for public service delivery. The study specifically focuses on women and on the ability to register a business online as a public service that has recently gained momentum as a result of COVID-19. Business registration is critical for the operations of small, medium, and large businesses and firms, and the ease of registering a business has direct implications for national economic growth and development (World Bank, 2020). Policies and institutions that deliver public services can empower or disempower entrepreneurs, hence the need to ensure accessibility for everyone, especially marginalised groups. This was the main motivation to conduct this research on online business registration in Tanzania.

In Tanzania, policies aimed at enabling the digitalisation of services, including business registration, started in the pre-pandemic period with the introduction of an e-government framework in 2013 and the development of a national ICT policy in 2016, designed to be implemented from 2016 to 2021. With the outbreak of COVID-19, however, business registration processes and other services (e.g., the Ajira portal run by the Public Service Recruitment Secretariat, the Government Electronic Payment Gateway, and so forth) have rapidly transitioned to digital platforms.¹ Since this study focuses on the impacts of rapid digitalisation on women's economic and social rights, we considered assessing the ease of registering a business online as the most appropriate subject for investigation.

¹ Ajira is the central government employment portal for job seekers in Tanzania through which any student who has completed degree can register and apply for jobs.

The study addresses the following questions:

- To what extent has the rapid digitalisation of the business registration process limited opportunities for women?
 - What public sector efforts have been launched to ensure that women are not left behind in the registering of businesses?
- What challenges associated with digitalisation inhibit women from registering their business?
- Which reforms are critical at the country and global levels to help governments use digital technologies for the promotion of equality for women and ensure that their human rights are not violated?

Literature review

Conceptualising digitalisation and its role in public service delivery

Gupta (2020) defines digitalisation as that which enables or improves business processes by leveraging digital technologies and digitised data. Scuotto et al. (2019) define digitalisation as the adoption of digital technologies to modify a business model with the aim of adding value by exploiting digital network dynamics and the giant digital flow of information. In this study, we follow the definition of digitalisation as "the process of employing digital technologies and information to transform business operations" (Bloomberg, 2018). Digitalisation is the development and use of tools and technologies that enable business and other services to move into the digital world, where mobility and time use are kept at optimum levels. This move enables the digital economy to come into existence. The digital economy refers to a global network of economic and social activities enabled by digital technology (Australia Department of Broadband, Communications and the Digital Economy, 2013). It encompasses a broad range of economic activities that use resources such as the cloud, internet, big data, and other digital technologies to collect, store, analyse, and share information digitally. The products of digitalisation include e-governments, fintech, e-health, and other e-services that have transformed how people access and receive services. We focus here on the digital delivery of public services via e-government. Tanzania has a special agency called Electronic Government (eGA) whose role is to make sure the government services are digitalised.

The COVID-19 crisis has reinforced the importance of the digital economy in providing access to critical services. About 70% of directors from Germany, Switzerland, and Austria who responded to the 2020 McKinsey Global Survey of Executives indicated that the

pandemic has the potential to quicken the pace of their digital transformation. The rapid amping up of the digital economy is evident in banking services, which shifted from physical to online channels, the retail sector, as consumers shopped using electronic point of sales, and the healthcare field, as providers migrated to telehealth (Blackburn et al., 2020). Doing business remotely during the pandemic to comply with public health restrictions has only been possible owing to the integration of digital platforms and other digital tools into business processes. Business owners have taken the lead in launching digital transformation initiatives to keep businesses running despite the challenges posed by the pandemic. According to Caldwell and Krishna (2020), such initiatives include the adoption of IT services—such as cloud technology and improved cybersecurity—using resources that are traditionally bound to more conventional technologies. Although digitalisation might be perceived as complex and costly for small businesses, the reality is that digitalisation does not necessarily require expensive digital tools. Small businesses can still benefit from less costly tools that are used in digital marketing, e-commerce, electronic point of sales, accounting, taxes, procurement, and inventory (Tong & Gong, 2020).

Digitalisation in the public sector: Implementation and equity challenges

The public sector is critical to the economic development of a nation. Its role in designing and implementing inclusive policies is especially important given the impact that equal access to public services has on people's lives and socio-economic opportunities. Public services include but are not limited to business-related services, transport, healthcare, and other components of the infrastructure that enable the daily functioning of the economy. A study by Lustig et al. (2014) indicated that access to public services reduces inequality more than the combined effect of lowering taxes and increasing the number of social benefits. With digitalisation, these services are termed "e-government" as they are provided online through digital platforms.

Digital access to public services contributes to an open, participatory, and trustworthy public sector that can increase the level of satisfaction amongst citizens (Welch et al., 2005). Digital access also fosters social inclusiveness and government accountability. The transformation of public services to a digital environment also offers opportunities for more collaborative and participatory relationships, allowing relevant stakeholders (citizens, businesses, and nongovernmental organisations) to actively shape political priorities, collaborate in the design and delivery of public services, and provide more coherent and integrated solutions to complex challenges. Digitally enabled participation and production of services is changing people's expectations about their relationships with governments (Organisation for Economic Co-operation and Development [OECD], 2016), and enabling government and nongovernment actors to work together in the

development of innovative approaches that contribute to national development and long-term sustainable growth. Digitalisation thus plays a key role in transforming the public sector.

In Tanzania, digital government is the delivery of quality services to the public through technology (United Republic of Tanzania, 2013). One example of e-government services is the business registration service offered by the government through the online registration system (ORS) under the auspices of the Business Registrations and Licensing Agency (BRELA). With digital registration, any start-up can be registered anytime from anywhere in the country. The system also gives the government access to an up-to-date database, which is crucial for policy planning. However, the use of this public service depends on the ability of the receiving end to access and use digital technology, and equity must be ensured. In this digital economy era, equitable public service delivery is very much tied to how equitable digital access is. In the Tanzanian context, various studies recommend the use of e-government services despite a number of obstacles towards its adoption, such as lack of computer infrastructure, IT knowledge, and technical staff, as well as poor networks, poor electricity supply, and network failures (Ochara & Mawela, 2015; Lallmahomed et al., 2017; Rehman et al., 2016; Gasova & Stofkova, 2017). E-government services can create time and cost savings, as they can be accessed at any time and on any day of the week, so it is important to overcome the multiple obstacles giving rise to a digital divide in the use of e-government services in Tanzania.

Furuholt and Kristiansen (2007) define the digital divide as the gap between those with regular, effective access to digital technologies, in particular the internet, and those without. Limited access can be due to one's geographical location, a lack of skills required to exploit the opportunities associated with digitalisation, and difficulty with adapting to new technologies, new language usage, and cultural changes (Ritzhaupt et al., 2013). The lack of skills in particular is a problem that needs to be properly addressed. Many citizens may have digital tools and access to the internet, but they might not be using the services. Citizens need to use digital technologies to access the services, including tools such as computers, tablets, and so forth, but many people, both educated and uneducated, do not find them simple and easy to use. Empowering citizens to make proper use of digitalisation is crucial, as that gives them more control over their lives and helps them develop coping skills and ways to participate and express themselves in a networked society (Hans, 2018).

Because the nature of the digital divide is multifaceted, the context in which it is examined is also crucial. IT work has been stereotyped as a male endeavour partly because technology has long been associated with 'maleness' and has been used to reinforce and extend male dominance in work and gender relations (Kenny & Donnelly,

2020). One way of addressing this problem is to ensure the participation of women in the design and development of new technologies, so that the technological outcomes stop reinforcing the association of IT as a masculine domain (Elsbach & Stigliani, 2019). Doing so will not only encourage IT usage but ownership as well. Once women are capacitated, that will result in economic enhancement from the individual level to the national level.

Women and digitalisation

The share of women in business in Tanzania was 54.3% as of 2021 (Mori, 2014; Wilbard & Mbura, 2020), indicating that they contribute significantly to economic development in creating jobs for themselves and others. Given the importance of digitalisation in enhancing efficiency in business, the importance of digitalisation in women's economic activity cannot be overstated (Sharma, 2018). Once digitalisation is in place, it helps women access new markets, work flexibly and distantly, acquire and interact with customers, receive training and provide mentoring, improve financial autonomy, and access finance for their ventures (Alina et al., 2017).

Prior to the COVID-19 outbreak women were already disadvantaged in making use of digital technology due to stereotyping of ICTs as masculine, affordability, and education, among other causes (Korlat et al., 2021; OECD, 2018). This disadvantage is more pronounced in countries in the Global South where the gap between men and women in the use of digital technologies and the internet is still considerable (Chisiza, 2017; Mariscal et al., 2018). In Tanzania, 77% of women compared to 86% of men own mobile phones, and only 17% of women in Tanzania have mobile internet access compared to 35% of men. Despite owning a mobile phone, women lack equitable access to internet bundles due to limited financial power (GSMA, 2019). Such inequality in accessing information leads to more significant economic and social gaps (United Nations Educational, Scientific, and Cultural Organization, 2021) and has remained an obstacle to women's economic take-off by creating a vicious circle of mutually reinforcing gender restrictions and stereotypes.



**Only 17% of
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Furthermore, women are faced with additional responsibilities of care work for their families, which limits their mobility and prevents them from fully participating in economic activities (Mariscal et al., 2018). Empowering women by making it easier for them to use ICTs and other digital tools that minimise the need for mobility and promote efficient use of time can help break the vicious cycle. Enabling them to be digitally included through ICT use, internet use, and digital literacy can boost their participation in economic activities (Sorgner et al., 2017).

Most women-owned businesses, especially in developing economies such as those in sub-Saharan Africa, Latin America, and Asia, are micro- and small enterprises (Wilbard & Mbura, 2020). Therefore, women in these economies are doubly disadvantaged—both their gender and the nature of the business they are engaged in prevent them from making adequate use of digital tools. Studies have shown that small businesses in general tend to be slower than larger ones in incorporating digital tools into their procedures, either as a result of limited digital knowledge or limited resources such as money and time (Fleet, 2012; Sharafizad, 2016). This is also supported by studies that point out that women still lag behind men in ICT use (Sorgner et al., 2017; Hosami, 2018). A study by Mulrean (2020) showed that only 22% of women in Kenya and 21% in Nigeria were active internet users. In India, mobile ownership is estimated at 28% for women but stands at 43% for men (Sorgner et al., 2017). This data is also corroborated by After Access's 2018 Global South survey, which showed that in the Global South, women are less likely to be able to access technology compared to men.

The main sources of the digital divide have been analysed in various studies. Mariscal et al. (2018) point out that women are less aware of the mobile internet and do not necessarily see it as relevant to their lives. The 2018 After Access Survey indicated affordability as the main challenge (AfterAccess, 2018). Other challenges mentioned are lack of connectivity, electricity problems, and lack of access to a device. Mulrean (2020) also underscored that limited access, affordability, education, sociocultural norms, and limited digital skills are the factors causing gender-based digital exclusion of women in India.

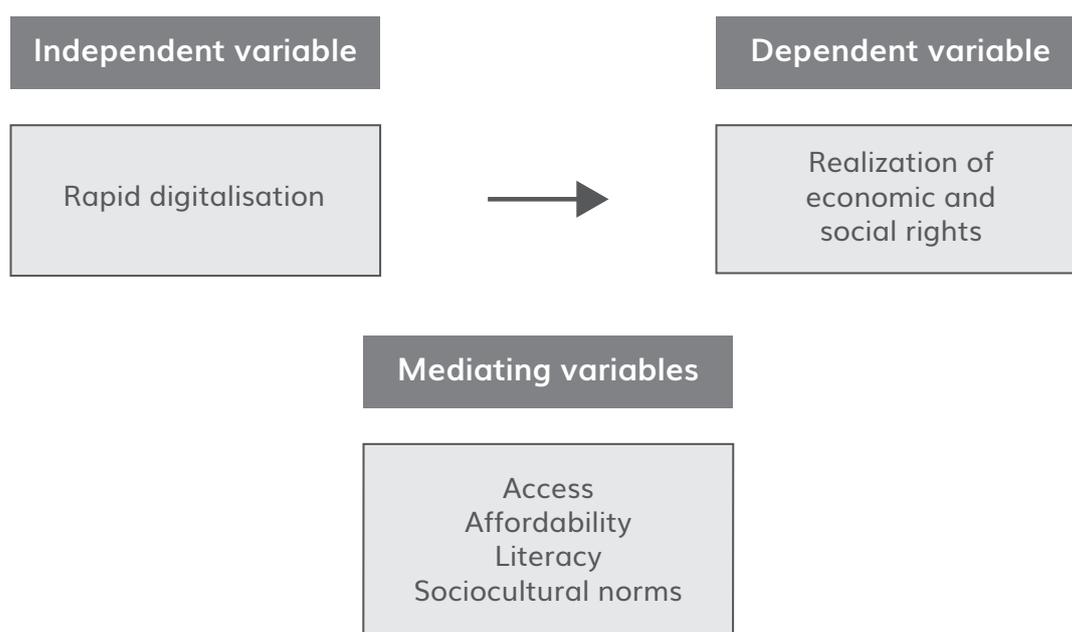
Despite the negative impacts of the COVID-19 pandemic on many businesses, the crisis has also given rise to new opportunities for entrepreneurship. It has boosted digital entrepreneurship, for instance, reflecting changing consumer behaviour during and in the aftermath of the pandemic (Sorgner, 2021). However, the literature suggests that the gender gap that already existed in internet and ICT usage long before the COVID-19 crisis is likely to get larger as a result of the pandemic (Rajahonka & Villman, 2019). Therefore, when looking at issues of development, especially those focusing on women's economic activities and the gender digital divide, in-depth, context-specific studies are

necessary. The current study is a contribution towards this call for further research in Africa, where the diversity in cultural and social norms needs to be considered in policies and actions formulated to bridge the digital divide.

Conceptual framework

The rapid digitalisation of public goods and services provision due to COVID-19 has created a stratum of digitally excluded people who are prevented from taking advantage of more attractive economic and social opportunities, as well as from receiving services offered to the whole community. Given the existing digital divide between men and women, we expect the impacts to be felt more by women. To explore this hypothesis and answer the research questions, we rely on the conceptual framework summarised in Figure 1.

Figure 1. Summary of conceptual framework



Source: Southern Voice (2021).

Methodology

Methodological approach

The aim of this study is to generate a snapshot of the current transformation in the use of digital technologies for business registration in Tanzania. Specifically, the project examines the impact on women of the digitalisation of the business registration process after COVID-19 restrictions were put in place. We identify both the risks and opportunities rapid digitalisation has generated, especially for women. The study focuses primarily on the experience of the users of these technologies and seeks to flag problems in current practices, and thereby stimulate discussion and foster improvements in public policies related to business registration.

Context of the study

Business registration in Tanzania has migrated to online through BRELA's ORS. The pace of the transition to online registration rapidly increased in 2020, due to the emergence of COVID-19. This fast transition was warranted by social distancing regulations intended to contain the spread of the virus. For Tanzania, these regulations were rather light and allowed for the continuation of all economic activities and hence the continued virtual registration of new businesses (Daniel et al., 2021).

BRELA's ORS went live and enabled online filings, searches, and incorporations and registrations of Tanzanian companies, branches, business names, trademarks, patents, and industrial licenses. Companies that were incorporated by physical filing before ORS were now required to be actively registered through the ORS and to migrate their official files at BRELA to the new electronic system (Ayub & Tarimo, 2019). The migration to the ORS of all companies registered manually is still continuing at the time of writing, while new companies are strictly required to register only online.

Sample size and sampling frame

Respondents for the study are individual entrepreneurs and BRELA officials. We requested information from both men and women entrepreneurs to gain insights into their experience in the use of different modes of business registration, whether manual or online. Through a random sampling, 33 women and 30 men business owners of micro- and

small companies were approached with a questionnaire regarding their experiences with the business registration process. Additionally, we purposively identified and interviewed seven key informants—two government officials and five women entrepreneurs—to seek further in-depth information. We choose women entrepreneurs as key informants because our study concerns women's experience in the delivery of public services, and we targeted micro- and small businesses because members of all genders participate in them, and they have a large presence in Tanzania. Large companies do not have as many women employees, and very few women own such companies. Additionally, we had limited time for data collection, and small businesses are more willing than large businesses to respond in a timely fashion to research invitations. These business owners were randomly selected from a list compiled from the Tanganyika Law Society (TLS), groups of women entrepreneurs, and a municipal database.² The law society's secretariat was used to identify law firms and lawyers involved in helping with company registration processes. For instance, lawyers support small and large companies in the preparation and stamping of the memorandum and articles of association and the stamping of the notarized declaration of compliance. They also provide technical advice on the share division between the partners/shareholders, set the company's initial opening capital, and supply the legal documents needed for business registrations.

Data collection

We used a combination of both qualitative and quantitative methods in our research. Current restrictions due to the COVID-19 crisis obligated us to largely use online surveys and phone interviews to avoid the risks of social gatherings. We shared the questionnaire through online platforms such as Google forms, and we conducted one-on-one interviews through social media like WhatsApp and Skype and via the phone. To mitigate the limitations of administering a questionnaire through an online platform, we also called respondents and read the questions to them and then ticked their answers on the form. In addition, we relied on quantitative data from secondary sources, such as the statistics of businesses registered before and after the COVID-19 pandemic from BRELA, to complement primary data and to triangulate and contextualise findings.

Using a combination of qualitative and quantitative data helped us improve our study by ensuring that the limitations of one type of data were balanced by the strengths of the other, allowing us to integrate different ways of knowing. Combining the two methods delivered significant benefits, enabling us to compare and contrast results and gain deeper insights.

² The Tanganyika Law Society provides advisory services and assistance on legal documentation that need to be uploaded during the online business registration process.

We collected data from micro- and small business owners in all five districts in the Dar es Salaam region (Kinondoni, Ilala, Temeke, Kigamboni and Ubungo). However, we mostly focused on Kinondoni, Ilala, and Temeke.

Data analysis

The data analysis process entails defining the questions of the study, collection, and cleaning of the data, and finally analysing the gathered data in order to share the findings (Hillier, 2022). We conducted a descriptive data analysis to summarise key findings from the questionnaire. We created graphs, such as histograms, to highlight key differences in values between female and male business owners and to offer a visual of the extent of the gap. We subjected the qualitative information to content analysis, breaking it down by subject to ease visualisation of the important findings.

The findings are divided into a supply and a demand side. We analysed the supply side gaps by way of the gender responsiveness of public services, and the demand side in terms of accessibility, affordability, literacy, and sociocultural norms.

Findings

The supply side of the online business registration: Business registration

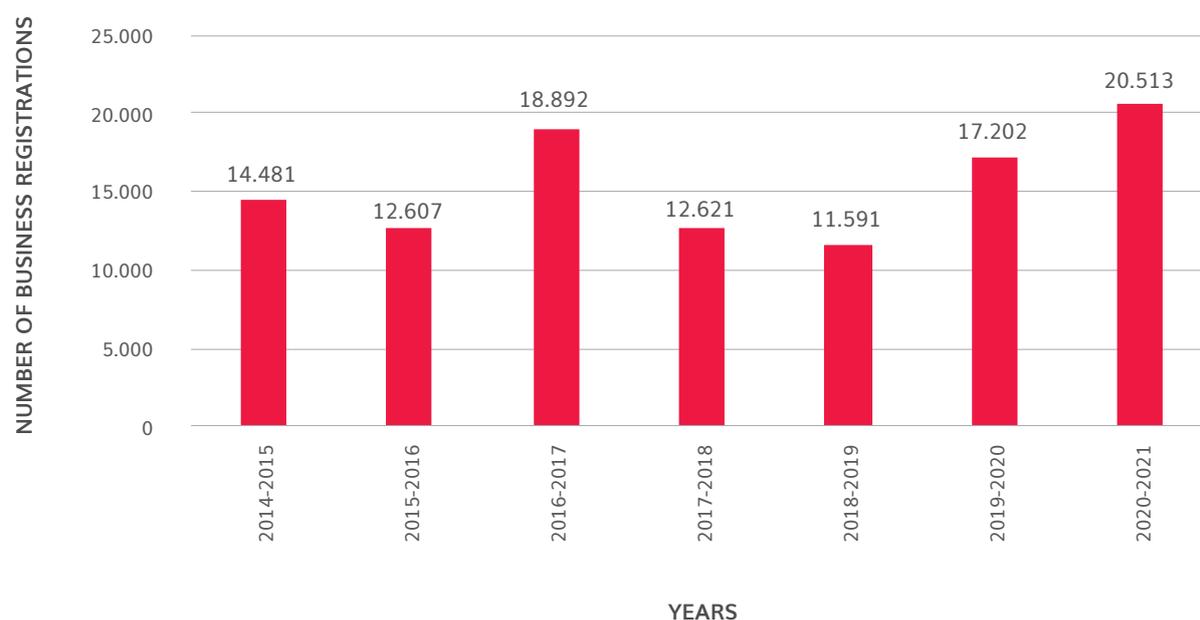
The ORS used to register businesses is owned and run by the government through the Ministry of Industry and Trade. Our interviews with staff members in BRELA were meant to elicit information about the trends in business registration before and during the COVID-19 period. They were also meant to assist with our disaggregation of data by gender and our attempt to understand the impact of the rapid digitalisation resulting of COVID-19, as we explored differences in the trends over the past 5 years. Figure 2 shows business registration trends from the years 2015 to 2021, which includes both manual and online registrations. It should be noted that after 2020, the government required that all businesses register online.

The findings reveal that although ORS came into effect in 2018, its use rapidly increased between 2019–2020, displaying a 48% growth in the number of businesses registered online. Such increase primarily resulted from the social distancing practices

that were adopted as a response to the pandemic. Unfortunately, data generated by the ORS has no gender dimension. The system does have a gender registration category for business owners, but it does not provide statistics of registered users by gender, and neither does the Tanzania National Bureau of Statistics, the custodian of all statistics in the country. The absence of gender disaggregated data from BRELA not only creates limitations for our study but also exposes a critical policy problem in a key government institution that offers an important public service.

We also learned that online business registration can only be done using a computer and not through mobile smart phones even though the majority of the population owns smart phone and has the skills to use it. The officials explained that the usage of smartphones for online registration is further hindered by the fact that during the registration process a business owner is required to upload a number of scanned documents. These documents are large, and the limited memory of some phones make uploading them that way practically impossible.

Figure 2. Business registration trends, 2015–2021 (Manual and online registration)



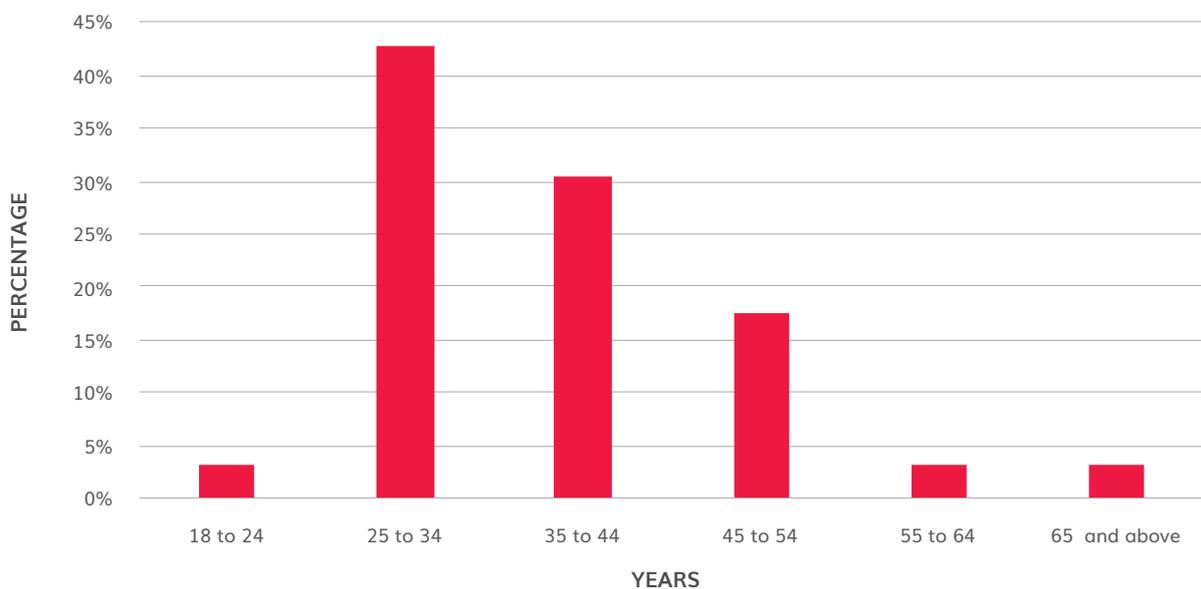
Source: BRELA (2014-2021).

Demand-side dimensions of online business registration

General demographics of the business owners surveyed

The aim of gathering data from business owners was to understand the challenges women business owners face in undertaking the online business registration process. It is worth mentioning that as we compiled the population of the micro- and small businesses in the area, we discovered that most of the business owners were women. From among the random sample of business owners in a given location, most that we approached with questionnaires were between 25 and 34 years old, forming 42.9% of the population, while those 65 and older were the least represented group, making up 3.2% of the total. Those between 35 and 44 constituted 30.2%, while those between 45 to 54 comprised 17.5%. Age trends in business ownership among the respondents are illustrated in Figure 3.

Figure 3. Age range of business owners surveyed



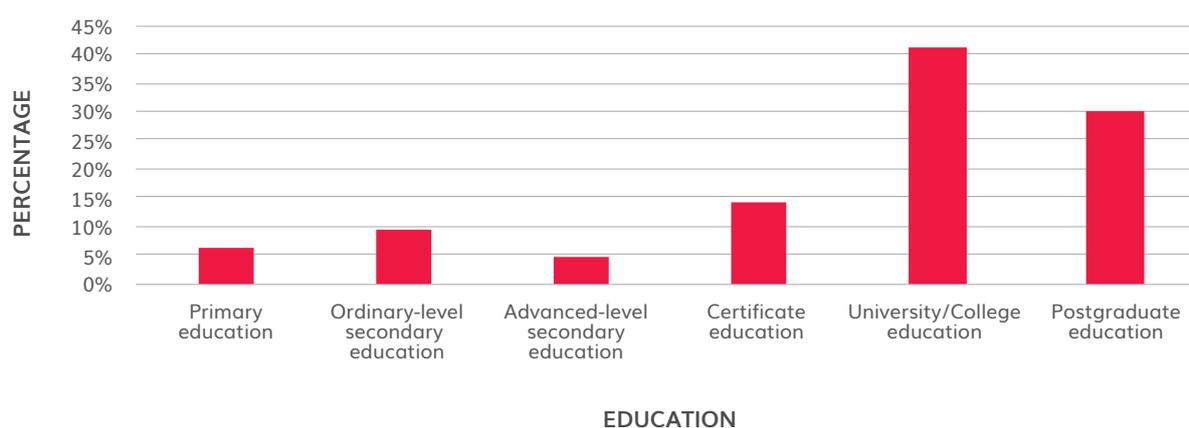
Source: Author's illustration based on survey.

Level of education is an important factor in accessing digital technologies. According to Olaitan (2018), sociodemographic factors such as age, gender, status, level of education, occupation, income, and social influence are the major determinants of mobile phone ownership and usage in rural areas. For this reason, we also sought information regarding the level of education amongst study respondents. According to the findings, most of the business owners attended school; 41.3% hold a bachelor's degree, 30.2% have at least a postgraduate education, 14.3% have certificates, and 44.8% have attended a high-level secondary school, which is form six, 9.5% have an ordinary-level secondary education, which is form four, and 6.3% have a primary education. The statistics reveal that those with higher levels of education use the online platform more than those with lower

levels of education or those who have not attended school at all. It is easier for people with more advanced digital skills to access the online platform. Digital literacy is a core fundamental competency, and extensive efforts are currently being made to coordinate global responses for enhancing digital skills through education (Jackman et al., 2021).

Another important determinant of the use of digital technologies is the income of an individual, and therefore we also solicited this information from the interviewees. The findings show that 27% of the business owners approached for data collection have an income of up to USD 44 per month, 25.4% have an income status of around USD 44 to 217 per month, 23.8% receive between USD 217 to 434 per month, and 23.8% receive more than USD 434 per month. Our observation from the sample of respondents is that business owners with an income of USD 400 and above per month utilised the online registration service, suggesting that those with higher income are most likely to use the internet to access the ORS.

Figure 4. Level of education amongst business owners interviewed



Source: Author's illustration based on survey.

Statistics from the data gathered during our research revealed that 42.9% of interviewees have not registered their businesses, whether manually or online, and women were more than twice as likely as men not to have registered their businesses (30.2% v. 12.7%). Of the 57.1% of interviewees who did the registration process, 30.5% are men and 26.6% are women. However, only 46% of respondents who registered their businesses had done so online, men making up 25% and women comprising 21%. Of the remaining 54% that used the manual process, women make up 30.6% and men 23.4%, and only half have updated their information on the ORS platform. From these findings we see that women lag behind men when it comes to using ICT to run their businesses.

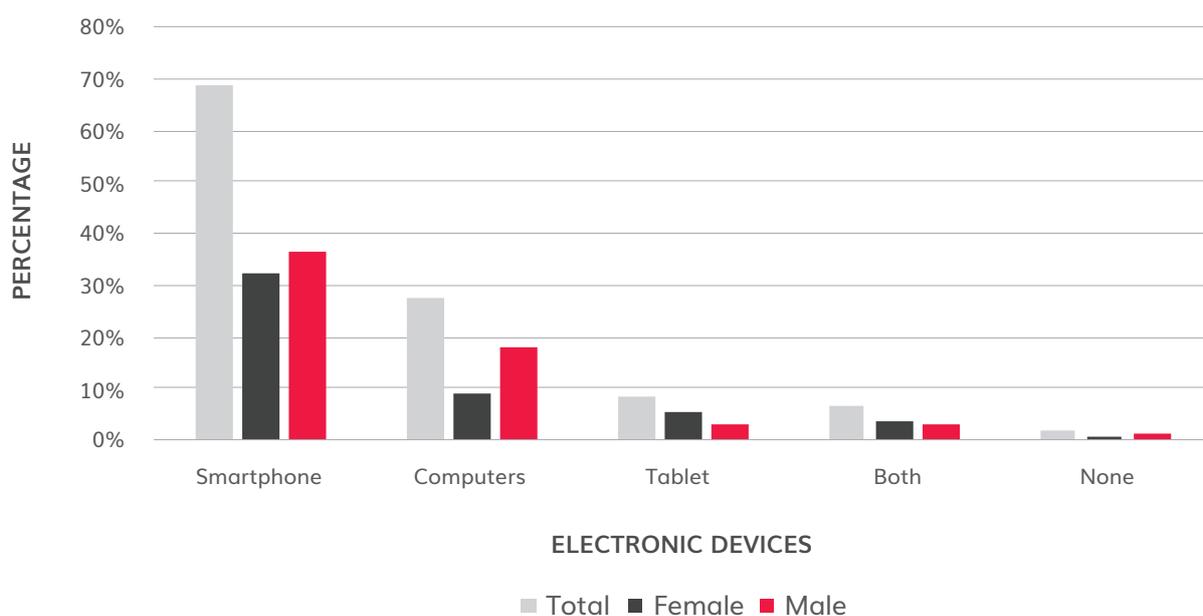
Other challenges that interviewees mentioned include the failure of the customer care department at BRELA to meet the needs of their clients; for example, interviewees reported that BRELA staff do not always answer the phones when business owners call seeking help. Another problem is a lack of clear guidelines describing all the required documentation required for the business registration process.

Accessibility

The internet is a crucial resource tool for accessing information and communication, but one can only access it if one has a computer, smartphone, or tablet. For this reason, we looked into the devices our respondents used for internet connectivity and the quality of the connection they have; that is, if it allows webpages to load in a timely manner without interruption.

Our research findings indicate that about 68.3% of the respondents interviewed (32.3% female and 36% male) use smartphones to access the internet, while 27% (9% female and 18% male) use computers, indicating that men are twice as likely to use computers as women. Of the 7.9% of respondents who claimed to use tablets for internet access, the majority were women at about 5%, while men constituted only 2.9%. The results also indicated that 6.3% of respondents were using all of three of these tools. Only 1.6% of the respondents stated they did not have any tool with which to access the internet. Figure 5 offers a snapshot of the percentage of usage of the various devices for internet connectivity.

Figure 5. Devices used for internet connectivity



Source: Author's illustration based on survey.

We went further and sought out the percentage of business owners who owned laptops or computers. Only 49.2% of our respondents own a home computer, of which 36% are men and 13.2% are women. Of the remaining 50.8% who do not own a computer, 54% of them borrow a computer from relatives when in need. However, regardless of access to a computer at home, be it self-owned or borrowed from a relative, 79.4% do not have internet connectivity at their homes. For those with connectivity, 39.7% used cellular broadband to access the internet, while 36.5% used a wireless network connection and 30.2% used dial-up connectivity. Only 9.5% use a cable modem for internet access.

The findings revealed that 28% of our respondents consider that internet connectivity is a problem. They noted that one might start registering the business and, in the process, face internet failure. Other business owners, especially women, complained that they lacked the skills for registering their businesses online and also complained about the cost associated with hiring professional companies to prepare documentation such as memorandum and articles of association and other legal documents needed for the registration process. The interviews further revealed that the government has not done a good job publicising the existence of the online platform, which may in part explain why it is not being used to its fullest potential.

Affordability

Our findings indicated that 77.8% of the business owners, of which 48.8% are women and the remaining 29% are men, find the internet to be unaffordable and regard the costs associated with internet connectivity to be too high to allow them to access the internet as much as they would like. Furthermore, 81% of the respondents, 46% and 35% female and male, respectively, reported that even if they manage to access the internet, the speed is too low. During in-depth interviews, the respondents went stated that internet service providers are marketing internet bundle packages that do not reflect reality when purchased.

Literacy

Internet literacy is the ability to use new information and communication media to evaluate and sort out information (Sadiku, Shadare & Musa, 2016). It is an umbrella term that covers traditional literacy, computer literacy, and information literacy. Internet literacy does not replace traditional literacy but builds on it. While traditional literacy is the ability to read, write and think critically, internet literacy amounts to having the skills to use digital devices (such as desktop PCs, tablets, and smartphones) which are

interconnected rather than stand-alone devices. As such, it involves proficiency with computer and internet applications and requires skills that are interdisciplinary in nature (Sadiku, Shadare & Musa, 2016). Internet literacy has emerged as one of the key factors in determining whether a person will make use of online platforms such as online business registration.

We aimed to determine the level of skill of our respondents in using both the computer and the internet. Our questionnaire asked business owners to rank using a scale of one to three, where one represents low skilled, two represents moderately skilled, and three represents highly skilled. While 33.3% of the men and 25.4% of the women ranked themselves as being highly skilled, more women than men indicated having a low level of computer literacy (12.7%) as compared to the men (3.2%). A total of 25.5% ranked themselves as having moderate computer skills, men being 12.9% and women being 12.5%. Figure 6 shows the level of computer skill amongst men and women.

Figure 6. Level of computer skill amongst men and women

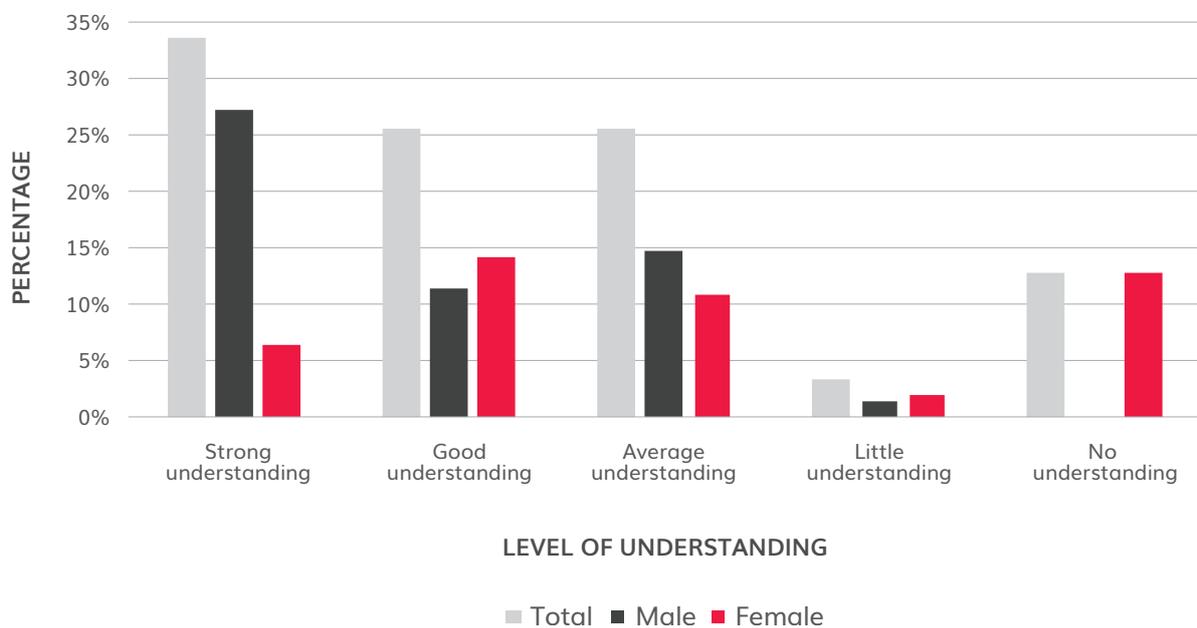


Source: Author's illustration based on survey.

Our questionnaire also asked the respondents to assess their level of internet literacy using a scale of one to five, one being the lowest (no understanding) and five being the highest (strong understanding). Our findings showed that 33.3% considered to have a strong understanding of how to use the internet, 25.4% a good understanding, and 25.4% an average understanding. The study also found that 3.2% ranked themselves as having little understanding of how to use the internet, while 12.7% ranked themselves as not

having any sort of understanding. In terms of gender, the majority of those having strong understanding were men, making up 27% of respondents, while women made up only 6.3%. Only women reported having no understanding of how to use the internet (12.7%). This suggests that women are far behind men in internet literacy, although it is important to bear in mind that these results are based on self-reported levels of knowledge. These results could be biased because women might be less likely to report themselves as proficient. Figure 7 shows the level of internet literacy amongst both the men and women we approached.

Figure 7. Level of internet literacy amongst men and women



Source: Author's illustration based on survey.

Sociocultural norms

We asked our respondents if they thought phones or computers are tools intended for use by men; 60% of the men and 40% of the women strictly disagreed with this notion and stated that digital tools are meant for all to use regardless of gender. However, 45% of the female respondents strongly agreed with the statement, and 15% remained neutral. Of the 45% female respondents agreeing that computers are tools for men, 90% of them however specified that such belief has not influenced their usage of phones and computers.

Despite all the challenges associated with access and use of the internet, the majority

of the respondents (88%) registered their businesses online rather than manually. According to them, the online procedure is less time consuming, and it only takes a few days. In one of the interviews, a female respondent said that not only is online registration quicker but also that it allows her to engage in care activities at home. Respondents also noted that another benefit of the online registration was that doing everything online helped with social distancing and therefore minimized their chances of contracting COVID-19. They further claimed that data can more easily be misrepresented when the process is done manually, because the registration officer could capture the details in the documents incorrectly or make errors in recording them. Even though a person self-registering his or her business could also make mistakes while entering the information into the system (e.g., typos), these mistakes are not related to data interpretation. Misrepresentation of the data as opposed to typographical errors were more likely to happen when the process was carried out manually because there was only one registration office who had to handle various registrations at once, while in an online setting, every person handles only his or her own registration. However, 12% of the respondents, who were all women, still suggested that the government should revert to the manual registration process, since it does not require digital skills and is inclusive to all, even though they agreed that manual registration is time consuming.

Conclusions and implications

Looking at the extent to which rapid digitalisation of the business registration process in Tanzania has impacted opportunities for women, this study found that, indeed, a digital gap exists between men and women. This prevents women from taking full advantage of the opportunities that come from the digitalisation of public services. The gap is especially large with respect to computer ownership (Hosami, 2018; Sorgner et al., 2017). Even though they may be able to borrow a device from relatives if they need it, digital device ownership is a big barrier to inclusion.

The digital gap is a combination of challenges that arise from both the supply side, where the government institutions are the main agents, and the demand side, where users are the focus. Problems on the supply side include the lack of gender-disaggregated data, which are crucial when the goal is to bridge the gender gap. The absence of readily available business registration data by gender, both from the online system registration and from the bureau of statistics, highlight an obvious policy problem. Incorporating tools that collect gender-disaggregated data in the ORS is paramount.

On the user's side, accessibility of both digital tools and the internet play a very

important role in the overall journey towards digitalisation. Our findings suggest that there is not a significant gap between men and women when it comes to access to mobile phones. Out of the 68% of smartphone users in our sample, 32% were women, while men were 36%, almost equal. This finding also supports the intuition that there is likely an urban/rural divide in terms of accessibility. Since the study was conducted in Dar es Salaam, accessibility issues were not as severe as they no doubt would have been if a rural region had been chosen as a study area. However, as previously stated, there is a gap with respect to use of computers; twice the number of men as women own a computer. Because the BRELA ORS requires the use of a computer, women are at disadvantage when it comes to the online business registration process. Even if they are able to borrow a computer or laptop from relatives, they are still more constrained than men.

For digitalisation to move forward, having digital tools without internet connections is like having wood for a fire but no way to light it. Access to digital tools must be supported by access to internet connection. Unfortunately, 78% of our respondents, 48% of which are women, did not have any internet connectivity at their home. The major barrier to home internet connectivity is its affordability. Our findings showed that the cost of accessing the internet is a greater burden

for women compared to men. The issue of affordability is also compounded by a lack of fairness in terms of the quality of the internet connection. To address this problem, the Tanzanian government and actors from different sectors such as telecom companies need to work to lower the price of accessing the internet by reducing the taxes associated with internet provision. This in turn will attract more users and more benefits can be obtained.

Digital literacy is another area in which a gap exists between men and women. Digital literacy is not only a matter of the skill level in using digital tools but also a matter of being able to navigate different online platforms. As indicated in the findings section, the percentage of men who ranked themselves as being highly skilled in the use of computers exceeded that of women. Similarly, the number of women ranking themselves as being low skilled in exceeded that of men. The same trend is observed for internet usage skills indicating a possible gap in computer and internet literacy.

 **The issue of affordability is also compounded by a lack of fairness in terms of the quality of the internet connection.**

Sociocultural norms also play a role in the digital divide between men and women in Tanzania. Our study indicated that almost 45% of women have the perception that computers and other digital tools are tools for men, while 15% of them are not sure if the digital tools are for women as equally as they are for men. This finding is also supported by studies done by the Organisation for Economic Co-operation and Development in 2018 and a report by Korlat et al. in 2021 on the subject of the stereotyping of ICT as masculine. Notwithstanding this mentality, 90% of the women who associate these tools with men nevertheless continue using them and say that these stereotypes do not affect their usage. This suggests progress in challenging the existing norms that exacerbate gender inequalities within societies. This finding also supports the notion that education is indirectly proportional to the digital divide. That is, the more the women are educated, the more the gap is minimised. Our study revealed that approximately 85% of the business owners using ORS had a secondary school education or higher. Additionally, the majority of women preferred the online registration over the manual registration despite considering the manual process as more inclusive. This indicates that women have made great strides in using online tools and that the online system has encouraged more women to register their businesses, since the time constraint is no longer a barrier to them. A study by Tong and Gong (2020) further supports this idea by highlighting the benefits of digitalisation even for small businesses.

Generally, although internet penetration is equal for both genders, there are several factors that hinder attainment of gender equality in accessing the internet and reducing the digital divide. The Tanzanian government needs to take these into consideration when drafting policies. With the greater reliance on digital services in the post-COVID-19 age, more women will probably be left behind in the digital delivery of public services if interventions are not undertaken.

Policy recommendations

This study recommends the following at the country level:

- The Tanzanian government, through BRELA, should review its ORS to capture gender data throughout the process and information on who is using the system more, men or women.
- BRELA should distribute user satisfaction surveys to get feedback from users. This survey should be placed on the website's home page so that it can easily be completed even if a visitor to the page fails to finish the registration process. The survey should also be drafted in such a way that it can easily be completed

through a smartphone.

- The government should review its regulations with the goal of creating an environment where internet services and digital tools are available at a manageable cost.
- Computer and ICT subjects should be introduced to all primary schools to increase the rate of digital literacy among men and women. The acquisition of digital literacy amongst children can help in changing sociocultural norms and women's perceptions of ICT as masculine.
- Wireless connections should be made public in areas highly populated by women, such as the big markets and shopping malls in both urban and rural areas, in order to increase accessibility.

At the global level, this study also recommends that multinational and philanthropic organisations not only increase and make grants that address the digital divide a priority, but also provide grants for developing mobile-based platforms for services like online business registration.

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Appendices

Tool 1. Questionnaire Distributed to Businessmen and Business women

A. General Information

1. What is your gender?
 Male Female

2. Which age bracket do you belong to?
 18–24 25–34 35–44 45–54 55–64 65 and above

3. Marital status
 Single Married Separated Divorced Widowed

4. What is the highest level of education you have completed?
 Less than primary Primary/High school Trade/certificate/diploma
 Bachelor's degree Postgraduate degree

5. Which part of Dar es Salaam are you from?
 Temeke Ilala Kinondoni Other (please specify) _____

6. What is the income status of your immediate family (all family members) per year?
 USD 1–USD 432 USD 432–USD 2,164 USD 2,164–USD 4,329
 USD 4,329 and above _____

7. What is your income status per year? As an individual.
 USD 1–USD 432 USD 432–USD 2,164 USD 2,164–USD 4,329,
 USD 4,329 and above _____

8. Which of the following best describes your business?
 Farming Health Food/restaurant Legal Stationery and supplies
 Machinery Transport Financial services Education
 Consultancy Professional Other (please specify): _____

9. What else are you doing to sustain your living apart from this business?

B. Access

1. Which device do you use for internet connectivity?
 Computer Mobile phone Both None of the above
2. What kind of internet access method do you use?
 Dial-up Cable modem Wireless network Cellular broadband
3. Do you have a computer at home?
 Yes No
4. Do you own the computer? If not, do you need access from a family member to use the computer?
 Yes No
5. Do you have internet at home?
 Yes No
6. On a scale from one to five (one equals limited access; five equals considerable access), how would you rank your accessibility to the internet and how easy or difficult it is for you to access an internet facility?

1	2	3	4	5

C. Affordability

1. Is the data connection/internet connection you are using affordable?
 Yes No
2. On a scale of one to five (one equals less affordable; five equals highly affordable), how would you rank the affordability of using the internet? That is, can you afford to pay for an internet connection that allows you to connect to the internet every time you need to?

1	2	3	4	5

D. Literacy

1. Using a scale from one to five (one equals low skilled; five equals highly skilled) rank your skills in using the internet.

1	2	3	4	5

2. How easy or hard is it for you to use a computer? Please rank your level of comfort using a scale from one to five (one equals very easy; five equals very hard).

1	2	3	4	5

3. If use of a computer is very difficult for you, what contributes to this?

- Expertise Digital skills Language barrier
 Other (please specify) _____

E. Sociocultural Norms

1. Do you think phones or computers are gadgets for men? Please rank your level of agreement using scale from one to five (one equals strongly agree; five equals strongly disagree).

1	2	3	4	5

2. How has this thinking of computers/phones/tablets being gadgets for men influenced your usage of phones and computers? Please rank the level of influence using a scale from one to five (one equals strongly influenced; five equals slightly influenced).

1	2	3	4	5

3. To what extent have household chores affected the time you have to use your mobile and computer? Please rank the level of effect using a scale from one to five (one equals strongly affected; five equals slightly affected).

1	2	3	4	5

4. If it were your choice, which mode of business registration would you have preferred?

Manual Online

Please briefly explain your choice.

Tool 2. Demand side interview questions for women

1. Have you registered your business with BRELA?
2. What are the challenges you faced?
3. What are your thoughts about digital tools and digitalisation as a whole? Are these to be used by men more than women?
4. What can be done to improve the situation?

Tool 3. Supply side interview questions taken and adapted from the Anita Borg Institute Response to UN Human Rights Office of the High Commission

1. What is the trend in registrations over the past 5 years (2016–21)?
2. Please indicate if your company/organisation collects sex- and gender-disaggregated data regarding access, use, and impact of this digital platform.
3. How many men and women have registered their companies yearly over the last 5 years? How many businesses are owned by women, how many are owned by men, and how many are owned by both men and women?
4. Does your company/organisation consider the impact of its digital products, services, strategies, and policies on women and girls? If yes, please explain any measure you have taken to make sure there is no gender gap in your delivery of service.
5. Please indicate if your company/organisation has set measurable targets for gender equality in access and use of this digital platform.
6. Is your company/organisation taking part in measures to expand equal access and enhance the participation of women and girls in digital technologies as users?

7. Does your company/organisation engage in public advocacy or participate in the Internet Governance Forum to promote gender-responsive digital technologies policies?
8. Do you support processes and mechanisms that enable the full, active, and equal participation of women and girls in decision-making about how the platform is shaped and governed?



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