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DATA MARGINALIZATION IN SOUTH AFRICA: A QUEST FOR INCLUSIVE DIGITAL PARTICIPATION

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Abstract

Many governments in the Global South are still vulnerable to poverty, hunger, civil wars, diseases and socioeconomic inequalities that may hinder them from fully embracing digital democracy, where citizens can participate digitally in national affairs. South Africa is one of the countries that are experiencing social ills and where data marginalisation has seen citizens being excluded from using the latest digital technologies ushered in the Fourth Industrial Revolution (4IR) to engage with others. To understand how data marginalisation affects the social and economic development in South Africa, the researchers employed a secondary data review approach, which allows for the use of expansive literature sources, documents and peer-reviewed articles on data marginalisation, digital economy and digital participation. The analysis of the aforementioned sources revealed several dangers that data marginalisation poses to social and economic development of South Africa. Due to poverty and unemployment in some South Africa provinces, data marginalisation widens the digital divide due to the absence of digital infrastructure, incompetent leadership, load-shedding and inflation. All these factors infringe on citizens' rights to participate in social and economic discourse using digital media. The research established that governments can address data marginalisation by harnessing their human, financial and technological capacity to embrace modern digital devices and information communication technologies (ICTs) to grow economies and create better living standards for the general citizenry. This research contributes to the growing body of knowledge on data marginalisation, digital democracy and digital participation, which are some of the expectations of human life in the digital age. The paper recommends that the South African government should provide digital solutions to mitigate the growing data marginalisation and digital divide, which affect the citizen's capacity to connect to the digital world and tap into some of the opportunities that are generated by the vast technological revolution.

Keywords: Data marginalisation, Inclusive Digital Participation, Digital Democracy, Africa

INTRODUCTION

The Fourth Industrial Revolution (4IR) wave has arguably infiltrated every aspect of human life globally. However, minimal attention has been paid to the various marginalised communities in the Global South, where digital technologies are still to be embraced. Mhlanga (2021) and Shava and Hofisi (2017) conducted research on the 4IR in South Africa and they documented several efforts that the government has made in embracing modern digital technologies. However, there are only a few studies that have focused on data marginalisation, which is a

growing concern for citizens from impoverished backgrounds and communities, since they are largely excluded from the digital wave where they can potentially conduct business and access vital information on government services (Mhlanga, 2021).

Countries in the Global South continue to experience varied development patterns, due to disorganised leadership, conflicts, lack of investment in digital infrastructure and, largely, corruption. Many studies attribute underdevelopment in digital infrastructure to corruption by African governments (Hoinaru et al., 2020; Koluadoum, 2022). As noted in these studies, corruption creates weak institutions that have weak decision-making protocols and this hinders effective implementation of digital solutions to develop the national economies. Although the aim of the global Sustainable Development Goals (SDGs) is ensure that citizens enjoy quality life. Thus, SDGs seek to eradicate poverty, inequalities, data marginalisation, all of which can be attributed to corruption and underperformance by state institutions. In the South African context, these maladies, particularly state institution underperformance, cause serious concern, because they can trigger the underdevelopment in many rural communities (Aidt, Hillman & Qijun, 2020). A study conducted by Munyoka (2022) on South African rural communities affirms the risk of data marginalisation, which results from neglected and underserved infrastructure, especially in predominantly black communities, where service provision and economic opportunities are poor and minimal, respectively.

Leimgruber (2017) describes marginalisation as a process or temporal condition/state that inhibits individuals or groups from full participation in social, economic and political life. Marcuse (1997) posits that marginalisation emanates from inequitable power relations that produce spaces of exclusion, thereby disadvantaging individuals and social groups from community engagements. As posited by the UN (2016), marginalisation and exclusion are experienced across the full spectrum of development activities, which ranges from planning to implementation. In this case, some South African communities can be described as marginalised and excluded from the broader digital ecosystem, since they cannot digitally participate in the national affairs of their countries.

Although there are many forms of data marginalisation, in this research the concept relates to the inability of social groups to access adequate and reliable information digitally, thus, they cannot explore the benefits of digital technology, such as virtually participating in national and global affairs. Due to gender stereotypes, some groups of people, such as women, in South African communities, are involuntarily marginalised, due to some cultural beliefs that relegate them to performing household roles (Mishra, Aneja & Mishra, 2017). The other muted voices include: the disabled, children, the aged and the homeless (STATSSA, 2020). There is a dearth of research on marginalised voices, so it is rather difficult to determine the extent of exclusion. Conversely, it is also difficult to ascertain how to include them into the mainstream digital economy. Therefore, this research makes a quest for modalities of digital inclusion in order to ensure that marginalised communities can be given a chance to participate digitally in the social and economic affairs that affect their lives (Trendov et al., 2019). Although this study clamours for digital inclusion, it takes heed of Bronson and Knezevic's (2019) advice that it should be compatible with the needs of the marginalised communities.

Technology and innovation literature generally asserts that the promotion of digital inclusion in marginalised communities comes at a huge cost, yet not many African governments have adequate revenue to do so. Instead, most of the governments are more pressed to address basic service delivery issues such as sanitation, roads, education and health facilities than digital exclusion. Research on the 4IR shows the undesirable effects of deploying digital technologies to transform marginalised communities (Klerkx & Beggemann, 2020; Pansera et al., 2019). While data marginalisation is one of the undesirable effects of the 4IR, Clapp and Ruder (2020) note that transforming marginalised communities to embrace digital technologies can prove to be uncondusive and unsustainable, given the existing social disparities experienced. Arguably, the South African government needs to approach digital inclusion with care, since doing so may trigger further discontent from communities where the promotion of basic economic opportunities may be perceived as a better priority over connectivity issues and possession of digital devices. Although previous attempts enabled through the SA Connect, following the approval of the South African broadband policy in 2013, which aimed to integrate rural South Africa into digital communication podia, rural communities are still facing data marginalisation.

Nevertheless, Prause (2021) encourages the government to end data marginalisation by using digital solutions that can strike a balance between technology development and adoption, and socio-economic development. To gain public trust and support, it is crucial for the government to prioritise both digital inclusion and other forms of citizen empowerment.

This study seeks to address the following objectives:

- To understand how data marginalisation affects inclusive digital participation in South Africa.

- To determine the factors that trigger data marginalisation and assess how they can be addressed, in order to achieve inclusive digital participation for socio-economic development in South Africa.

In the second section, this study discusses a contextual overview of data marginalisation. The third section unpacks inclusive digital participation and digital democracy, followed by a discussion on the nexus between data marginalisation and inclusive digital participation in Africa. The fourth section discusses the research methods of the study, followed by the analysis of results, with a particular focus on the challenges and opportunities for data marginalisation and inclusive digital participation in South Africa. The last section presents the conclusion and recommendations.

Contextualising data marginalisation

Data marginalisation can be easily understood by synthesising various definitions of the concept and exploring different types of marginalisation in real life contexts. To be marginalised is to be denied access to the political, economic and social settings and resources that enable self-determination. Millions of individuals across the globe have felt the effects of marginalisation. According to Kagan and Burton (2005), the marginalised have little agency over their own destinies and the resources available to them. The overt acts or dispositions of human society that cause people to reject those they deem undesirable or useless exemplify what is meant by the term "marginalisation." It is a slippery and multi-layered concept which denotes and connotes how people can be excluded at different levels of life. It is, therefore, difficult to pin down what the term exactly constitutes, yet it is experienced at many different levels in the society.

While data marginalisation generally refers to individuals who are digitally excluded, this study focuses on the plight of the following groups: people living with disabilities, women and young people from disadvantaged backgrounds in South Africa. These afore-mentioned groups of people are digitally marginalised, because they do not participate fully in the digital economy and the wider society (Munyoka, 2022). Mitigating the impact of data marginalisation entails enabling excluded individuals to take part in online activities safely, improving their livelihoods through digital entrepreneurship and opening access to new resources and markets. Individuals now require to have digital literacy skills to be able to participate digitally and to become active contributors to a community.

The marginalisation and social exclusion of individuals and groups are pervasive social realities in virtually every society and period of human history (Schiffer & Schartz, 2008). A Marginalised Groups Indicator Report by STATSSA (2020:1) identifies children (aged 17 and below), youth (15-34), aged persons (60 years and above), and persons living with disabilities as the most marginalised people in South Africa. In many rural areas in South Africa, these groups are also at risk of data marginalisation, due to lack of employment opportunities for the youth and the growing needs of the aged and persons living with disabilities.

Many governments, including that of South Africa, are responding to the opportunities and challenges brought by the 4IR by developing policies and strategies that can address inclusive digital transformation. In order to stimulate inclusive growth, the South African government has made significant strides in the digital transformation of society, government and business. Early attempts by Telkom to universally roll out ICT services were not really successful, as many rural communities remain marginalised due to lack of access to telecommunication infrastructure and ICT-based services. As noted by Horwitz and Currie (2007), Telkom had a monopoly on ICT development and this triggered underdevelopment and widened the digital divide. This is evident in ICT discrimination in South African communities. Such monumental failure dealt a huge blow to the country's quest to achieve digital inclusion. Digital inclusion, access and transformation of public service are the three key pillars for promoting inclusive digital transformation. In addition, the government is also implementing relevant policy and legislative reforms, which are shown in the table below.

Table 1: Main policies influencing digital transformation in South Africa

Table 1: Main policies influencing digital transformation/participation in South Africa	
Policy/Strategy document	Relevance
Report of the Presidential Review Commission on the Reform and Transformation of the Public Service in South Africa (1998)	This report contains the main findings and recommendations of the Presidential Review Commission (PRC) in relation to the operation, transformation and development of the South African Public Service and, in particular, the creation of a new culture of governance.
Electronic government: The digital future: a public service IT policy framework (2001)	The framework spelt out the e-government vision, clearly defined how progress was to be measured, and set priorities for ICT in government.

National Development Plan (NDP) (2012)	This is a long-term plan for development and it provides a broad strategic framework to guide key choices and actions including inclusive digital transformation.
Public Service Corporate Governance of ICT policy (2012)	The policy was designed to strengthen ICT governance as an important resource in the public service.
National Broadband Policy (2013)	The purpose of this policy is to connect and integrate people, government and business in the pursuit of inclusive economic growth.
Cyber-security Policy Framework (2015)	The framework strengthens security and improves trust in the cyber environment by providing a safe and secure spaces for society, business and government to thrive.
National Integrated ICT Policy White paper (2016)	It outlines the overarching policy framework for the transformation of South Africa into an inclusive and innovative digital and knowledge society.

Adapted from Manda and Backhouse (2017)

Table 1 above shows that, post-democracy, the South African government took various strides, through the formulation of various policies, to promote inclusive digital transformation and inclusion in terms ICTs and digital technologies usage. Manda and Backhouse (2017) posit that governments facilitate digital transformation by developing social, economic, industrial and labour market policies that are responsive to the realities and needs of all facets of society. Such policies enable business and the government itself, for example, to leverage the opportunities and address challenges of digital transformation.

Policy and legislation play important roles in governing the complex digital, connected and smart environments (Scholl & Alawadhi, 2016). Although enabling policies promote digital inclusion, state entities, particularly local municipalities, are failing to curb data marginalisation in their jurisdiction, due to unstable and weak revenue bases, absence of stakeholder investment and lack of political will to implement development initiatives for the benefit of communities. In this case, data marginalisation remains evident in most marginalised rural communities in South Africa, as municipal funds are sometimes abused or embezzled through procurement processes. This further widens the digital divide and increases poverty and inequalities in communities. According to the Auditor General's Report (2021/22), local municipalities failed to comply with the principles of good governance, which include good financial management. In this case, local communities remain digitally marginalised, as local authority fail to promote digital investments by rolling out ICT infrastructure. This is also confirmed in the National Integrated ICT Policy White Paper (SA, 2016), which states that service delivery issues hindered universal access to ICT programmes in marginalised communities. Thus, there is need to adopt a collaborative and inclusive stakeholder approach to ensure that rural communities are empowered economically. In addition, local government authorities should encourage investment in digital infrastructure, which is critical for promoting digital inclusion in ICTs. This will usher disadvantaged communities in South Africa into the globalised world.

Inclusive digital participation

The concept of digital participation acknowledges digital inequalities pertaining to whether people participate actively or passively in digital society, depending on usage, skills, social support and self-perceptions (Seifert and Rössel, 2019). Around the globe, several leading nations have made significant strides in meeting the growing need for digital identification in their respective regions. From the mid-2000s onwards, the digital revolution has raised hopes of democratic transformation and strengthening in Africa. Numerous digital identification initiatives have been motivated by the United Nations Sustainable Development Goals, which were approved in 2015. These initiatives seek to "provide legal identity for all" by 2030, with "inclusion" and "inclusive societies" as the primary foci.

Adejumo et al. (2020) argue that technical dynamics and improvements in information and communication systems have been the primary drivers of the industrial and digital era of the twenty-first century. Ofori and Asongu (2021) point out that certain African countries (including South Africa) are making substantial progress in terms of digital technology and human capital development than others. However, disparities across nations are significant. In order to fuel innovation in the digital and smart age, it is essential to nurture skills and knowledge communities (Abdoullaev, 2011).

Despite growing concerns that technology will replace human labour, the Fourth Industrial Revolution ushers in exciting new fields of work opportunities that require human ingenuity and expertise. Personal factors, such as low confidence in ICT skills, technical factors regarding digital inaccessibility (Vroman, Arthanat & Lysack, 2015) and social traits, can all play a role in determining the digital divide (Selwyn, 2004), which is the unequal distribution of opportunities for using technologies.

Access (the ability to connect to the internet and go online), **skills** (the ability to use the internet and online services), **confidence** (the fear of crime, lack of trust or knowledge of where to start online), and **motivation** (understanding why using the internet is relevant and helpful) are the main foci of intervention in the United Kingdom's digital inclusion policy. It can be deduced from the above assertion that digital inequalities still prevent people, both in Africa and abroad, from actively participating in the digital society. In South Africa, as affirmed by Kalkanci et al. (2019), the rate of adoption and acceptance of digital technologies by citizens from marginalised backgrounds is still low. This can be attributed to limited access to connectivity and poverty, especially in rural municipalities. These factors affect citizens' capacity to purchase ICTs tools and data. The vulnerable age groups, such as the aged, the youth and the children, thus, remain in the data marginalisation trap. Therefore, there is need for the South African government to leverage economic opportunities that empower marginalised citizens to become self-reliant.

In South African rural communities, data marginalisation is further triggered by the scattered population settlement patterns, which adversely affect Internet broadband rollout. A study conducted by Gillwald et al. (2018) indicated that during the early 1990s, the South African government had a blueprint to eradicate data marginalisation, as mobile communications operators, Telkom, Vodacom and MTN could not adequately roll out ICT services in marginalised communities, owing to competition and incumbent fixed-line monopoly. As confirmed by Boikaego et al. (2021), there is poor regulation within the mobile market industry and it adversely affects the implementation of policies that promote commercial interests. The same study confirms the earlier arguments that scattered settlement patterns, which are a creation of apartheid, make it hard to roll out broadband. Apart from the remote geographical locations, mobile communications companies also cite digital illiteracy as the other hindrance to investing in ICT infrastructure in rural communities. The foregoing observation is evident in Telkom's decision to discontinue digital services in marginalised rural communities (Gillward & Esselaer, 2004 cited in Boikaego et al., 2021). Such a decision negatively affected the rural citizens, as it excluded them from digitally participating in the social and economic affairs that affect their lives.

Digital democracy

Digital democracy, as defined by Van Dijk (2013), is the promotion and exercise of democracy from many perspectives via the use of digital media, in both online and offline political communication. Yeung (2017) attests that the Internet and other forms of new media are being hailed as the saviours of governance by and for the people, since they provide individuals with much more control over the creation and dissemination of information than what conventional mass media can do. Ofori and Asongu (2021) argue that the digital revolution has affected and altered almost every facet of human life. Thus, data marginalisation affects citizens' digital democracy in various ways. Where and when citizens are not free to participate digitally, their e-readiness (e-literacy and e-skills) resultantly hinders their capacity to fully engage in a digitally changed and smart society and reap the benefits thereof (Manda & Backhouse, 2016). In the view of Chan, Lau and Pan (2008), in nations where the average person has more experience of using the Internet, the citizens are more engaged. A study of industrialised nations like Singapore showed that there was a positive link between broadband availability, internet access and people's e-skills levels (Chan, Lau, & Pan, 2008). In poor nations, where e-readiness is low, lack of e-literacy and e-skills slows the speed of digital transformation (International Telecommunications Union, 2015). In South Africa, more digital interventions have been implemented in various urban municipalities than in rural municipalities to ensure that citizens have more access to digital devices thereby participating in the digital economy of the country.

Nexus between data marginalization and inclusive participation in Africa

Research in South Africa has shown the widening digital divide as a deterrent to inclusive digital participation by citizens from remote rural communities (Shava & Vyas Doorgapersad, 2023). As alluded to in the literature, data marginalisation hinders citizens from accessing reliable information on markets, economic opportunities, governance and key service delivery issues that affect their lives. The Marginalisation Groups Indicator Report by STATSSA (2022) shows the extent to which many rural communities are marginalised, as evidenced by limited access to basic services and largely the absence of ICTs that can help create entrepreneurship opportunities for vulnerable people.

Although the social security system attempts to close the data marginalisation gap in rural communities through the payment of social grants, the stipend is not enough to accomplish that. In this case, the quest for digital inclusion becomes complex, as citizens from impoverished backgrounds demand basic services and employment opportunities, which are basic necessities for a quality life. Arguably, if data marginalisation is not adequately addressed, the poverty gap will be widened further and this will especially have a detrimental impact on the youth who do not have the requisite skills to establish new entrepreneurship ventures.

We, therefore, argue that the South African government should strive to stimulate employment opportunities in marginalised communities. Doing so can improve the citizens' access to ICTs tools that can enable them to connect to future economic opportunities, including interacting with state entities, such as local municipalities regarding service provision issues. We further submit that data marginalisation takes citizens back to the 'dark ages', where communities largely rely on information disseminated through radio and television. In most cases, however, some poor citizens do not have radio and television sets.

For South Africa to achieve the ideals of the National Development Plan Vision 2030, the citizens must have adequate access to data to enable them to explore new ventures and understand how the state manages public affairs. In addition, when communities are digitally included, they can harness their energies to transform their lives. Eradicating data marginalisation can help South African communities escape cultural stereotypes and embrace change, as they will be able to use digital technologies to access information on markets, business opportunities and state departments.

Methodology

To understand how data marginalisation affects citizens in South African communities, the researchers employed a qualitative secondary data review approach, which entails employing previously acquired data from various secondary sources. As a result of the researchers' control over this material and the fact that other researchers will not have access to it, it can offer one a competitive advantage. Expansive literature sources, documents and peer-reviewed articles on data marginalisation and digital participation were used to collect data for this study. Therefore, these secondary sources were influential in providing comprehensive information for the researcher to derive meaningful conclusions. Thematic analysis was utilised to analyse data from secondary sources and draw themes in accordance with the study objectives.

Discussion

This section discusses the challenges and opportunities of data marginalisation and how they impact on attempts to achieve inclusive digital participation in South Africa.

Inequitable access to vital information

To achieve digital inclusion in Africa, it is critical for countries to achieve the Sustainable Development Goals (SDGs). The digital revolution, as affirmed by Yolanda (2022), offers opportunities to reinvigorate the strategies that can be undertaken to develop African countries through the use of the most advanced digital technologies. In this case, African countries should strive to leverage digital inclusion to promote free interaction between governments and their citizens, as advocated by the United Nations Development Programme (UNDP) (Kouladoum, 2023). Thus, African governments should prioritise data provision and access to digital platforms.

Amid all these strategic desires, South African citizens from marginalised backgrounds can still be described as victims of data marginalisation, given that they hardly receive fruitful information on improving their economic well-being (Seadira & Heuva, 2021). For citizens in the marginalised rural communities of South Africa, accessibility to the web through the Internet of Things remains an obstacle, due to poverty and income inequality (Munyoka, 2022). This is a sad reality and it is prevalent in many other African countries, especially those that are faced with armed conflicts, such as South Sudan, Somalia, and the Democratic Republic of Congo.

Although inaccessibility to proper information is a challenge, a UNDP (2020) report showed that during the COVID-19 era, more than 100 countries, globally, target development in digital solutions. At the material time, 30 of these countries were undergoing digital transformation. This indicates the strides that were taken by some of these countries to try and mitigate the impact of digital/data marginalisation and, to a greater extent, promote the inclusion of citizens into the digital and mainstream economies. Based on this discussion, it is crucial to note that for Africa to make meaningful strides in curbing data marginalisation, there is need to adopt digital approaches to development that are associated with vast digital transformation. Citizen inclusion in digital transformation processes remains significant, as any digital decisions that the government adopt affect these very citizens in many ways. This promotes citizens' trust in the digital solutions that their governments would have adopted to revamp their economies and enhance living standards.

Digital infrastructure

In order to achieve digital inclusion in South Africa, the leaders should support digital infrastructure interventions in local government, where most of the digital services are likely to be rendered. Munyoka (2022) asserts that the absence of modern digital infrastructure in African countries is detrimental to the attainment of digital inclusion, thus, leaving citizens out of the wave of modern technology. A study conducted by Kouladaoum (2022) between 2000 and 2020 on 44 Sub-Saharan states revealed the dire absence of digital infrastructure, which

is a huge deterrent to all the attempts of ending digital marginalisation on the continent. The findings of this research identify the enhancement of investment in digital infrastructure and human capabilities as the key components of inclusive growth. On that note, African governments are duty-bound to champion and bankroll such an investment. It can be deduced from the analysis of the literature that if data marginalisation in the Global South were to be realised, governments should undertake massive digital infrastructure projects that support various stakeholders' digital projects.

Digital entrepreneurship

Several governments in the Global South are experiencing unemployment and socioeconomic disparities. Some countries prioritise addressing domestic problems ahead of the citizens' quest for digital inclusion. Although the South African government is implementing various local economic development programmes to empower citizens from impoverished backgrounds and attain inclusive growth (Ofori and Asongu 2021), data marginalisation continues to be a piercing thorn in the lives of many citizens. Consequently, Tchamyou et al. (2019) call for new employment opportunities to enable citizens to also participate in national wealth accumulation and development. This study noted that data marginalisation has not received adequate attention in South African rural spaces, where citizens rely on their own resources and capacities to remain connected to the web and the Internet of Things (IoT). This clearly demonstrates that the state has reneged on its responsibilities, thus, denying citizens the freedom to explore the digital world. It is, thus, clear that inequitable access to data hinders inclusive growth. According to Ejemeyoywi and Osabuohien (2018), lack of inclusive growth triggers further marginalisation of individuals and communities.

While socioeconomic disparities are the main cause of digital disparities in South Africa (Shava & Vyas Doorgapersad, 2023), contemporary research shows that citizens can escape data marginalisation by embracing digital entrepreneurship, which researchers like Elia et al. (2020), view as the solution to some social ills. A study conducted in South Africa by Gazzola et al. (2017) showed that data marginalised citizens can be supported to engage in digital entrepreneurship (d-commerce). This will enable them to access broader information on markets, products and services, while capacitating them to make sound business decisions that reduce costs and enhance profits. As Gazzola et al. (2017) further indicates, empowering poor citizens to embrace modern ICTs helps them to escape from their cultural 'shells', which are made up of sociocultural, legal, political, economic and technological environment obstacles (Naranjo-Zolotov et al., 2019).

Based on the foregoing assertions, the government of South Africa is expected to be at the forefront of investing in digital projects in the most marginalised communities. This is fundamental for empowering local small businesses and ensuring inclusive growth. Leveraging access to digital technology requires the government to establish digital infrastructure and foster collaborations with technology champions, thereby establishing digital solutions and projects for the benefit of local communities. By so doing, data marginalisation will be reduced, as citizens become connected to the Internet and use it to network with potential investors, while advertising their businesses and skills to relevant stakeholders. We argue that the development of small businesses in South Africa can solve data marginalisation through employment generation. The government can also capacitate citizens in vulnerable communities by funding small business ventures.

Citizen digital empowerment

To eradicate data marginalisation in South Africa, the government must embark on citizen digital empowerment, which not only offers basic access to information and services, but also focuses on human capital development. As affirmed by Piranne-jad & Janssen (2017), citizens should not only become end users, but they should also be solution providers in the process of making a significant impact on the ecosystems in which they expect to excel.

Research indicates how the digital divide in South Africa affects citizens and contributes to further marginalisation in terms of ICT development and the use of modern digital devices (Munyoka, 2022; Sharma et al., 2022). Studies done in low-income countries by James (2020) and Simons et al. (2020) showed that in Africa social class-based data marginalisation is real. Without doubt, the digital divide robs the citizens of the right to enjoy ICT services, yet some governments are reluctant to promote digital inclusion and establish digital networks and infrastructure. As noted by Sasaki (2017), digital inclusion can be leveraged to promote political participation processes that can balance power relations in communities. Tianru (2020) argues that leveraging digital services, including availing open government data, can promote digital inclusion. As such, all stakeholders must collaborate with governments in developing digital projects in communities, which is critical in ensuring inclusivity in the digital spaces.

A study by Helberger et al. (2018) confirms that citizens are now highly active on online platforms and this is an opportunity for the government of South Africa to promote digital inclusion, especially in poor rural

communities. This will enable marginalised communities to contribute their ideas to the economy by using various digital services. To achieve digital inclusion, therefore, there is need for a radical shift in leveraging citizens' access to data to support economic ventures and create jobs for local citizens. Job creation enables formerly unemployed individual to earn income, thus, empowering them to purchase data and modern digital devices on their own. African governments are well-positioned to promote human capability programmes that render development, while creating room for the private sector and other stakeholders to develop significant digital programmes and investments aimed at curbing data marginalisation in South African communities.

Conclusions and Recommendations

The paper attempts to unpack how data marginalisation affects inclusive digital participation. It further examines the opportunities and challenges that data marginalisation can trigger in South Africa. The data that were yielded through the analysis of documents showed that the African digital economy ignores many voices. Governments have the mandate to leverage technology development as a tool for holistic development in the distressed and most marginalised environments. One of the fundamental roles of the South African government is to ensuring digital inclusion, which can also help to achieve SDG 9 (Innovation and Infrastructure) in Africa. The study noted that investment in digital infrastructure is critical in the quest for digital inclusion in South Africa. The promotion of digital entrepreneurship to reenergise and reinvigorate traditional businesses is fundamental in uplifting citizens' projects in marginalised communities. This can be achieved by providing entrepreneurs with access to tools for navigating the Internet of Things, where modern business and networking opportunities are available. To realise this benefit, there is need to prioritise capacitating citizens with digital literacy, which in which is fundamental for digital inclusion in the social, economic and political affairs of African states. It is also important for governments to create conditions that attract foreign direct investment to support digital development projects that can promote the digital inclusion of the citizens. By embracing digital tools, citizens can move away from the 'dark' agenda of technological impoverishment and head towards exploring digital spaces that bring new business opportunities in South Africa. These digital spaces also expose citizens to different cultures, job markets and national government platforms

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