Exploring the role of Information and Communication Technology and Open Government Data in creating awareness of employment opportunities: a case study involving South African youth

Vincent Masavah
University of South Africa, 49560085@mylife.unisa.ac.za

Ronell Van Der Merwe
University of South Africa, VDMerwer@unisa.ac.za

Judy van Biljon
University of South Africa, vbiljja@unisa.ac.za

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Vincent Masavah, Ronell Van Der Merwe, Judy Van Biljon

University of South Africa, Science Campus, Florida, Johannesburg, 1709, South Africa

Email: 49560085@mylife.unisa.ac.za; VDMerwer@unisa.ac.za; Vbiljja@unisa.ac.za

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ABSTRACT

The lack of youth employment opportunities in South Africa is exacerbated by inadequacies in governmental institutions, policies and access to Information and Communication Technologies (ICTs). These inadequacies can result in information deficiencies such as, unawareness of employment opportunities and employment requirements. Open government data (OGD) and ICT's are potential enablers in meeting some of the information needs related to finding employment opportunities but there is little theorization on the application of OGD. Therefore, this study aims to investigate *how the role of ICT and OGD in creating awareness of youth employment opportunities can be understood better by the application of the Choice Framework*. The Choice Framework (CF) is Kleine's analytical tool for investigating ICTs for development towards a contextualised understanding of the relationships among the framework's elements namely structure, agency, the dimension of choice and development outcomes. The research design is a single, exploratory case study; the data capturing was conducted in the Alexandra Township of the Gauteng Province in South Africa using semi-structured interviews. Data was collected from 34 participants (between the ages of 18 and 35) who are currently looking for employment. The data was analysed thematically using Atlas.ti V8 and then unpacked in terms of the constructors of the CF. The findings show most participants had access to ICT but limited awareness on OGD and several challenges in using OGD for finding employment related information were identified. The findings provide a theory based contextual understanding of the research problem including the challenges and recommendations towards overcoming said challenges of finding information on employment opportunities.

Keywords:

 youth unemployment, open government data (OGD), choice framework

INTRODUCTION

Unemployment in South Africa is not a new phenomenon. In 2012, van Aardt stated that the problem had been in existence for the preceding 40 years (van Aardt, 2012), but it is increasingly affecting the youth (Meyer, 2017). "A thief of hope" is how Cloete (2015, p. 513) describes youth unemployment in South Africa. President Cyril Ramaphosa (Presidency, 2021), in his Youth day speech, announced the full implementation of the Presidential Youth Employment Intervention, aimed at curbing youth unemployment. Burnett (2014, p. 200) summarizes the contested descriptions of youth unemployment in South Africa as a "time bomb", which is affecting the black population mostly, many of whom have poor social and living conditions (Ismail, 2017; Magruder, 2010). Erasmus and Breier (2009) noted that a major factor that has seen the South African economy not growing by 6% yearly (as planned) is the skills shortage and the situation is confirmed by Cudjoe and Yumei (2020) who found that 31% of employers are struggling to fill the vacant positions due to skills shortage. Access to information regarding employment opportunities is another factor identified in South Africa to have led to youth unemployment (Vulekamali, 2018; Yu, 2013). According to Johnson et al. (2020), the use of digital professional networking platforms is important in easing youth transition to the labour market. Although the youth have access to online social platforms they often do not know where to search for information on employment opportunities (Yu, 2013). What is needed on a practical level is access to reliable, accessible information on topics relating to employment, including employment opportunities. We argue that the concept of Open government data (OGD) offers potential for providing access to accessible, relevant, and reliable information on employment opportunities.

OGD has been defined as a philosophy and increasingly a set of policies that promotes transparency, accountability and value creation by making government data available to all (OECD, 2019). With governments around the world making their data available to the public with the aim of benefiting society (Dawes, Vidiasova & Parkhimovich, 2016) and providing ICT tools to enable citizens to

access government information more easily (Al-Kubais, 2018). The growth of mobile phones in the continent, connecting individuals to other individuals, information, market and services (Beuermann, McKelvey and Vakis, 2012), present the possibility of using ICT's in accessing OGD. OGD has the potential to support the initiative but what is lacking on a theoretical level is a contextually grounded understanding of the possibility of using ICT and OGD for providing employment-related information in the South African context. This leads to the question guiding this research namely, *how can OGD be used in creating awareness of employment opportunities for South African youth?*

Given the focus on human development, we found the Choice Framework (Kleine, 2008, 2010) appropriate as a theoretical lens(see motivation for this decision in section 2.2). In the next section, we will provide a brief introduction to OGD, review literature on the use of ICT and OGD in creating awareness of youth employment opportunities and describe the Choice Framework (Kleine, 2008) as the theoretical framework this study has adopted. In section 3, we will describe the methodology, which explains the approach of data collection, analysis, and presentation. The fourth section of this study will present the findings and discussion. The paper will be concluded with the limitations, contribution and opportunities for future research.

LITERATURE REVIEW

Creating adequate employment opportunities for youth is a major challenge facing both rich and poor countries (Curtain, 2015). The population in Africa is the fastest-growing and it is also the most youthful in the world (Kararach et al., 2011). Mago (2014) observes that youth unemployment in Africa is estimated to be twice that of unemployed adults. Caporale and Gil-Alana (2018) posit that there is a scarcity of research papers analysing unemployment in the African continent. Caporale and Gil-Alana (Caporale et al., 2018) attribute the scarcity of research in this field to the limited availability and reliability of data. Different factors have contributed to unemployment in South Africa. These factors include the economic climate (Ajufo, 2013), gender (Jayachandran, 2020), access to information (Vulekamali, 2018), government policies (Glaser, 2018), the COVID-19 health pandemic (Cronje & Omarjee, 2020) as well as skills shortages and mismatches ((Glaser, 2018). The next section discusses the factors that influence access to employment information in South Africa.

Factors that influence access to employment information in South Africa

There are many factors influencing access to information on employment opportunities in South Africa. Some of the factors influencing access to information on employment opportunities in South Africa include governance, technology, and access to mobile phones. South Africa is among the first countries to promulgate the law of *Promotion of Access to Information Act* (PAIA) in the year 2000 (Berliner, 2017; Wamukoya, 2012). However, some government agencies have been reluctant to comply with the law, leading to several court cases by civil rights groups and the South African History Archive (SAHA) (Wamukoya, 2012). Daniels (2007) describes how the government enacted a bill on skills development act. The Act established successfully a single national regulatory body that consists of the National Skills Authority (NSA) and Sectoral Education and Training Authorities (SETA) was created. Implementing the labour market is one of the effective changes that SETA made (Daniels, 2007). Van Belle, Lämmerhirt, Iglesias, Mungai, Nuhu, Hlabano, and Chaudhary (2018) maintain that the role and importance of OGD in the African context cannot be overstated and recommend that buy-in, commitment and roll-out at national and local government levels need to be accelerated. Aker and Mbiti (2010) noted that mobile phones play a major role in accessing information. Moreover, social media narrows the gap between inequality and unemployment by providing a platform where everyone with access to a smartphone can access information on employment opportunities (Fieseler, Meckel, & Muller, 2014). This has been made possible by the growth of mobile phones in the continent (Beuermann, McKelvey and Vakis, 2012) and the generation born after 1980 who are perceived to be "Digital Natives" since they grew up using technology (Prensky, 2001). The role of access to relevant employment-related information and access to ICT is critical in informing and connecting the unemployed. The ideal OGD characteristics are access, redistribution, reuse, absence of technological restrictions, integrity, and non-discrimination against persons, groups, or fields of endeavour (Kitckin, 2014). Therefore, OGD has the potential for contributing to overcoming the existing knowledge gap by the provision of employment-related data, including information on scarce skills, and employment opportunities. The section will elaborate on this matter.

Open government data as a means to access information on employment opportunities

Anshari, Almunawar and Lim (2018) define OGD as data produced and controlled by the government or government entities. OGD has two main characteristics, namely Government Data and Open Data (Ubaldi, 2013). Open data is the process of democratising data for individuals or organisations to use freely (Jetzek et al., 2013; McAuley et al., 2010). Conversely, government data is information or data commissioned by government or government agencies (Ubaldi, 2013). In September 2011, eight countries signed an Open Government Partnership (OGP) (Kassen, 2014). The countries that signed the agreement include Brazil, Indonesia, Mexico, Norway, the Philippines, South Africa, the United Kingdom, and the United States. In Africa growth of OGD has been slow since its launch in September 2011 (Afful-Dadzie & Afful-Dadzie, 2017; Kassen, 2014; Manolea & Cretu, 2013). OGP is a voluntary, international initiative that aims to secure government commitment to its citizenry by fighting corruption, empowering citizens, promoting transparency and good governance (Manolea & Cretu, 2013).

Some of the benefits derived from OGD include; political, social, and economical (Davies et al., 2016; Janssen et al., 2012; Zuiderwijk et al., 2014). OGD can generate income by commercialising government data (Ubaldi, 2013). Policies and programmes of OGD continue to grow, to support governance framework in the political sphere (OECD, 2015). Moreover, leveraging the social benefit of OGD can develop a government that is efficient, effective and innovative in service delivery and its public operation sector (Ubaldi, 2013). Moreover, as noted by Aker and Mbiti (Aker & Mbiti, 2010), the growth of mobile phones has reduced the cost of communication, bringing tangible economic benefits, improving agricultural and labour market efficiency. However, there are barriers to using OGD, the technological barriers include data accessibility and quality along with the need for metadata including data definitions, provenance, and usage information (Hossain et al., 2016). The legal barriers include data ownership, privacy and information security. The economic barriers include the cost to host, update and maintain the data sets (Zeleti, Ojo and Curry, 2016) and the institutional barrier is categorized by the organisation's managerial willingness and policies in opening their data (Hossain et al., 2016).

Hassan and Twinomurinzi (2018) conducted a systematic literature review of Open Government Data research to identify the challenges, opportunities and gaps. Their review conclusion was that OGD is an emerging research area with no existing theoretical frameworks. Wirtz, Weyerer and Rösch (2018) researched the antecedents of Open Government Data from the technology acceptance and motivation perspective, the study was conducted in Germany. Ruijer and Meijer (2020) studied Open

government data as an innovation process based on a living lab experiment conducted in the Netherlands. In summary, the topic of OGD has been researched in-depth but the focus has been on the economic value. The studies we could find that focused on the human aspect were not conducted in a developing country context. Bentley and Chib (2016) explored the broader concept of open development and advocate debating and deconstructing the principles and limits of open development research for transformation within a common definitional frame. Therefore, we selected the choice framework (CF) that theorizes human development as freedom of choice as the theoretical lens for this study.

CHOICE FRAMEWORK

The CF (see Figure 1) was developed in the field of ICT4D and applied to human development (Attwood & May, 2015). The CF focuses extensively on addressing social structure, individual agency, the degree of empowerment, and the outcome (Attwood & May, 2015; Noruwana et al., 2018) and analyses the development outcomes by describing the systemic relationships between agency, structure, and choice, (Kleine, 2008). Amartya Sen's capability approach (Sen, 1999) offers a way of thinking about development as focused on improving individual freedom, not economic growth. The development outcomes are made up of primary and secondary choices where the individual choices (which will vary according to the structures and the agency of the individual) will lead to secondary outcomes (Kleine, 2010).

Agency comprises ten tangible resources: social, material, geographical, health, information, financial, natural, cultural, and educational resources (Coelho & Segatto, 2013; Kleine, 2010). Notably, the term resource is used instead of capital and assets. Resources in CF is interpreted as individual agency-based capability inputs, together with structure-based capability inputs, this can be converted into capabilities (Kleine, 2008).
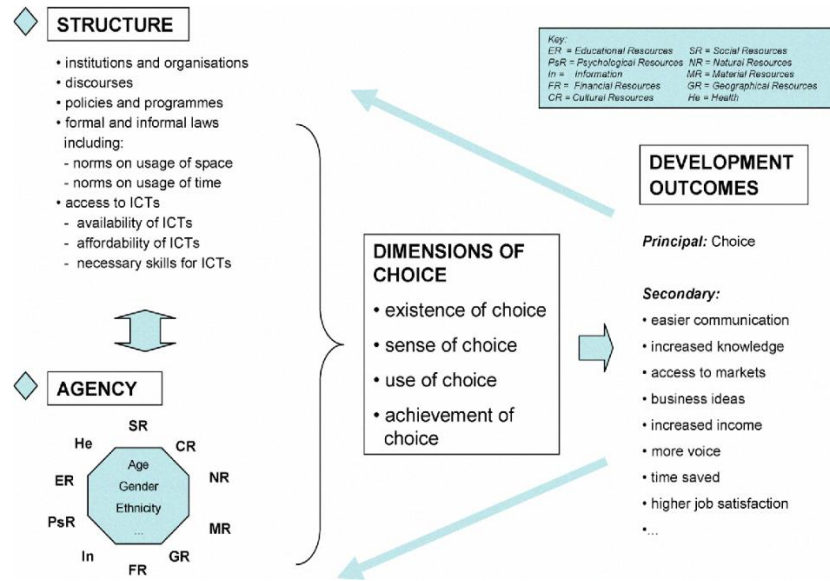
Figure 1: Choice Framework Model source (Kleine, 2010)

The structure of CF includes the rules, laws, formal and informal norms, and policies that influence the agency. Other structures include access to ICT, and institution and organizations (Kleine, 2010). Structures that support individual agency are mentioned both in the empowerment framework suggested by Alsop and Heinsohn (2005) and the Sustainable Livelihood Framework (Kleine, 2008). Structures in this study consist of institution and organization, ICT access and rules, law, informal and formal norms and policies (Hatakka et al., 2016; Kleine, 2008, 2010; Tshivhase et al., 2016).

Dimensions of choice are referred to as "degrees of empowerment" (Alsop & Heinsohn, 2005). First, it refers to the existence of choice, the different possibilities that exist, and the principles to attain the combination of their resource portfolio and the structural conditions that would allow an individual. (Kleine, 2008, 2010). Secondly, dimension of choice is the sense of choice identified by Kleine (2009) based on the results of the fieldwork experience in ICT and development. The "use of choice" is determined by whether or not an individual made use of the choice or not and finally the "achievement of choice" attributes to whether the outcome will match the choice being expressed (Kleine, 2008, 2010).

In summary, the interrelated structure and agency influence the dimension of choice that determines the development outcomes. The development outcomes then impact the structure and agency of the system, which depicts the connectedness of the components.

METHODOLOGY

The study adopted a qualitative data analysis approach, using a single case study. Yin (2018) defines a case study as the empirical method used to understand a contemporary phenomenon extensively in its environment. This study focused on Alexandra Township, in the Gauteng province of South Africa.

Data capturing

The sampling strategy included purposeful and snowballing sampling as advocated by Savoury (2019) for when the criteria for key participants have been established The snowballing sampling strategy is the process of recruiting participants based on referrals of participants who have been interviewed by the researcher (Vashistha et al., 2015). The researcher and a research assistant visited Alexandra Township with a friend who is familiar with the area. The friend introduced the researcher and research assistant to some of the unemployed youth in the area with the request to participate in the study. Snowballing was applied by requesting that the interviewee to refer the interviewers to an unemployed friend or "chomi", as they would say in Alexandra Township, once the interview concluded. We interviewed 34 participants in Alexandra Township, including 15 males and 19 females. The area is predominantly black, and as a result, the data collected show 33 black participants and one coloured participant. The age group categories of the participant were as follows 18-24 (17 participants), 25-30 (14 participants), and 30-34 (3 participants).

The semi-structured interviews were conducted between December 2019 and March 2020 using questions informed by the CF. The interviews were audio recorded on a smart mobile phone and later transcribed into a Microsoft Word document. Thematic Analysis was conducted according to the six steps suggested by Braun and Clarke (2006), and the components used in CF informed the selection of the themes. The study complied with research ethics in accordance with the University of South Africa (UNISA) Ethics Committee. Consent to conduct the interviews was sought from participants prior to the interviews. Participants were informed of the voluntary nature of the study and the interview.

FINDINGS AND DISCUSSIONS

Considering the CF as a theoretical lens, we used the concepts in theory as the themes. Therefore, the constructs of development outcomes, structure, agency, and degree of empowerment, as constructs of CF shown in Figure 1, were analyzed and are presented in Sections 5.1 to 5.4.

Agency

As mentioned in Section 2, the agency depends on ten tangible resources: social, material, geographical, health, information, financial, natural, cultural, and educational resources. The ten resources identified in this study are discussed as follows:

Material resource, the data we collected found, participants had smartphones, laptops, and desktop computers as material resources to access ICT. 82% of the participants interviewed had a smartphone to access the internet. All the participants interviewed in the study had access to the cyber café where they could access the internet, printing, and scanning services. The data collected also show some participants had both a smartphone and a desktop computer or a laptop.

For *financial resources,* the participants interviewed were unemployed and relied financially on friends, family, and government grants, as indicated by Participant no. 10, who also had a child, responded by saying;

"No, I'd say I get like such financial resources from friends or from my partner like when   I say "Oh, I need data for such and such" like they're the people who understand…"

On *information resource*, the data collected found information was received either by way of the internet or "social contact" (word of mouth). Participant no. 8, who got information by way of accessing the internet through a smartphone device, says;

"Yes, we do have access to internet. We do have our own mobile phones but with the internet we usually prefer Telkom. Telkom is very cheap……."

However, other participants received information through word of mouth from friends, family, neighbours, and community organisations such as churches. For example, Participant no. 3 says;

"Yes. So you'll find that you'll join uh uh uh a social club which really is not your thing but you will still join it just to try and get information"

On ***educational resources***, the data collected indicate 68% of the participant interviewed had matric (final year of secondary school) and below, 21% a certificate, and 9% a diploma. One participant preferred not to say.

Social resources, information about employment opportunities were obtained from family, friends, neighbours, and contact peers. Social resources echo the sentiments discussed on information received by word of mouth.

Health resource, the code represents the participant's perceptions based on whether their health had directly contributed to how they access ICT and OGD or any other information on employment opportunities. Only one participant noted that she was short-sighted. Participant 11 shared her sentiments as quoted below and believes there are more people with similar challenges.

"About my short sight. I think there's a lot of people that are experiencing the same thing..."

Geographical resources, participants noted that Alexandra township did not have enough opportunities in skills development training. Participant no. 11 was quoted as saying;

    "One of the disadvantages I'll start there, is in Alexandra we don't have uh a lot of training facilities. Yes, we do have them but some there just a few of them, and even the training itself's…"

Cultural resources, this code is influenced by age, ethnicity/race and gender. All 34 participants had been affected at least with one of these subcodes. For example, some participants noted that they could not be employed because they did not speak certain languages. Participant no. 31 was influenced by gender;

"So yeah, ayoma ko ama (in the) sites. They'll tell you they're looking for men. They are a specific kind of job where they'll say men only"

Natural resources, due to heavy rainfall in the Alexandra township and its weak physical structure, poor conditions can hinder one from leaving one's place to travel in search of opportunities. Moreover, it affects participants leaving the house to access resources such as Wi-Fi hotspots provided by the municipality. Participant no. 27 said;

    "… other place that has Wi-Fi, but it's winter so I cannot just go there and it's not like you're gonna go and sit inside – you sit …"

Psychological resource, the participants had traits such as willingness to learn, hardworking, etc., which motivates them. Participant no. 5 had this to say;

"Okay, I'm keen to learn new things. So if you're willing to teach me then I will be able to learn"

To summarise the discussion on agency: Information was disseminated either through word of mouth or the internet using social media platforms such as Facebook, Instagram, or LinkedIn. Regarding material resources, 82% of the participants had a smartphone to access ICT and OGD over the internet. This could have been attributed to the cost of mobile phones becoming cheaper than before due to innovation and competition (Noruwana et al., 2018). Those who did not have a smartphone would access the internet in the cyber café. However, participants had challenges accessing OGD. These challenges include the cost of data and cyber café, network issues caused by heavy rains, and lack of information regarding OGD. The financial resource the participants are experiencing is attributed to youth unemployment in South Africa. The social resource, where information about employment opportunities, shared through word of mouth, could be attributed to the spirit of Ubuntu. The spirit of Ubuntu in African culture embodies the values of humility, reciprocity and benevolence (Abubakre, Faik and Mkansi, 2021) where resources are shared without expecting anything back in return (Lutz, 2009). As noted, 53% of the total population in Alexandra township are unskilled, and 10% of the population comprises 20-year-olds who have no form of education (, 2014). This lack of education clearly impacts human resources and present a huge challenge to the youth of Alexandra, also affecting their income level.

Structures

In Section 4.1, the discussion was about agency formed by the structures in which it operates. Access to ICT and institutions and organisations form part of elements in these structures (Kleine, 2010). In Alexandra Township, the findings indicate that participants had access to ICT. The three factors associated with access to ICT are availability, affordability, and ICT skills, and access to ICT is determined by availability and affordability. As a result, non-affordability and a lack of awareness have hampered the use of ICTs in Alexandra Township. The use of ICTs is further hampered by a lack of adequate ICT skills and technical competencies.

The availability of cyber café, smartphones, laptops, and desktop computers has given participants access to ICT and its services. Cyber café services include scanning, printing, and using the internet

to send emails and browsing information. 82% of the participants interviewed had a smartphone to access the internet. Moreover, some participants had both a smartphone and a laptop or desktop computer. At least all the participants interviewed had access to the cyber café in the area.

Participants had difficulty supporting themselves financially since they were unemployed. The participants noted ICT services become costly, struggling to afford them. For example, Participant 29 quoted below complained about the cost of printing.

"Yeah I know at the internet café its seven Rands ($0.50) per page"

68% of the participants interviewed have matric and below. Although this cannot be linked directly to a lack of ICT skills, some participants think there is a correlation. Participant 33 remarked:

"Meanwhile, let me start with schools. I think schools should provide internet access
for children at an early age. Children should know how to use these things; children
should know how to coz you get a job now you need computer access. I might lie on
the interview – they ask me if I know how to use this and this, and I'd say yes".

The data we collected shows that most participants do not know government institutions and organisations such as SETA, which provide skills needed in the country. Some of the answers we received from Participant no. 16 and 20, respectively, when we asked if they know what SETAs are;

"Well I heard but I haven't gone through"

"I don't know about SETA"

Our findings indicate that participants had access to ICT. However, they experienced challenges on affordability and skills to use ICT. The data we collected also revealed that the interviewed participants did not know the government institutions and organisations that offer or list skills that the country requires. Participants interviewed were given information regarding the skills South Africa is looking for and government institutions such as SETA that offer these skills to support the awareness of employment opportunities.

Dimension of choice

In CF, refer to Figure 1, individual choices in the agency can operate in a given structure to reach the degree of enabling, such as the existence of choice, sense of choice, use of choice, and achievement choice (Kleine, 2010). Participants had the choice to "use of ICTs" to access information on

employment opportunities (that includes OGD and other online platforms) or use alternative sources. The alternative was "social contact" where information was received through friends, family and community members as discussed in Section 4.1. The "ICT and OGD use" can be supported by Participant no. 24's response below;

"I have a group on Facebook, it's called Soweto jobs. So there most of the people most
of the people they find jobs. You'd see someone posting that they applied in that same
group someone posted uhm a post about a certain government post, then they applied
and then they were called and are now working"

In summary, the data collected indicate there is access to ICT. Access to ICT is attributed to the availability of smartphones, laptops, desktop computers, printers, and scanners. 82% of participants interviewed had a smartphone. This could be attributed to the cost of mobile phones being cheaper than before due to innovation and competition. On the other hand, the motivation behind the use of "social contact" as the dimension of choice has been attributed to the spirit of Ubuntu in African culture, where resources are shared without expecting anything back in return (Lutz, 2009).

Development outcome

In the context of this research on access to ICT and OGD, the results may be measured by what people value the most in their life (Kleine, 2010). The findings show that all the participants had access to ICT. However, many participants had financial challenges they, thus could not fully utilize the benefits of ICT. Regarding OGD, participants were unaware of OGD information to support employment opportunities and awareness of critical and scarce skills. Some participants were using OGD data, but they did not know they were using OGD data. The development outcome of the study was "improved use of ICT to create OGD awareness". Participants gave suggestions about how to be made aware of the information on OGD. Some participants suggested advertisements can be done on television, social media, and hanging of posters on street poles. For example, Participant no. 7 and 5 quoted, respectively:

"Yes. I think now it's difficult to go around door-to-door advertising the I
think the only way is to bring out posters"

"I think if they can try to advertise them on TV, Social Medias, on the streets"

To improve skills and access to ICT, the participant had various suggestions. For example, participant no. 31 response was focused more on the church infrastructure to provide the internet and space for accessing ICT as quoted:

"But even the church naangetuu(our) gets they also many contributors to estreaming (streaming) and they have much access to the eInternet (internet) and the resources of using the Internet. So, they could always help, especially the youth. How can a youth member of your church suffer while wena (you) have all the resources to assist to the…"?

The development outcomes of the study include primary and secondary choices. The primary choice was to access OGD. The research and research assistants presented the participants with links that show critical and scarce skills list the country needs together with government organisation websites such as SETA for them to be made aware of where to acquire some of the skills the country is seeking. This supports earlier findings that the lack of information about OGD to support employment opportunities is attributed to the youth not knowing where to find information (Vulekamali, 2018; Yu, 2013). Some of the participants had access to OGD through social media links. Secondary choices in this study include easier communication, access to markets (jobs), and time saved. The links shared by the researcher and research assistants gave participants access to markets and easy communication with potential employers. Moreover, access to ICT and OGD saved participants travel time and cost to search for information.

Figure 2 demonstrates the adapted CF components to summarise the findings of this study.
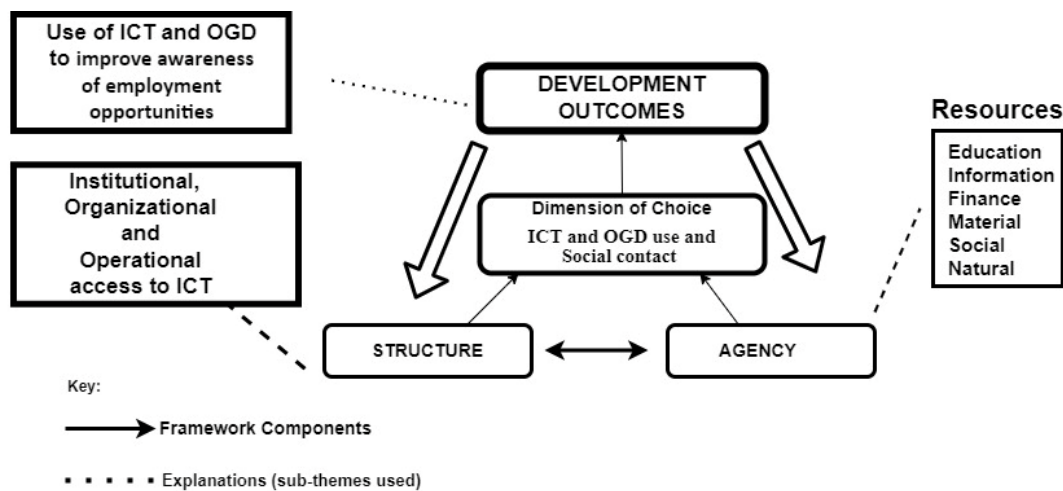

Figure 2: Adaptation of the Choice Framework for OGD

The development outcome is to *use the ICT and OGD to improve awareness of employment opportunities* among the youth in Alexandra Township. In CF, the agency of an individual operates within a given structure such as the existence of choice, sense of choice, use of choice and achievement of choice. In this case, both "ICT and OGD use" and "Social contact" were options of choice. The "ICT and OGD use" was demonstrated by the use of mobile phones to access government information portals, where the "Social contact" was evident from the sharing of information by word of mouth and the Internet.

Agency in this study was mostly influenced by the following resources (based on the comments): education, information, finance, material, social and natural resources. Our findings confirm that the lack of computer literacy teaching in schools and the community is an issue. Information resource was either by word of mouth or through the internet. The financial constraints became evident when the participant could not access some of the services of ICT due to the cost associated with it. Mobile phones, computers and laptops are some of the material resources the participants own. Social resource was influenced by community interaction and the ability to share information among themselves. The impact of natural resources become evident when participants cannot access facilities due to weather, as some of the participants mentioned that during winter, they find it hard to leave the house to access Wi-Fi hotspots.

Agency is formed by the structures in which the individual operates, therefore institutional and organisational access to ICT are included as part of the structure element in this study. Participants were not aware of institutions and organisations that provide critical information. The availability, affordability and ICT skills are some of the factors that are affecting access to ICT and thus agency. The framework in Figure 4 is presented as a point of departure in theorizing the application of OGD for development outcomes to be verified by more research in other contexts.

CONCLUSION

Concerning our research question, namely *how can OGD be used in creating awareness of employment opportunities for South African youth,* we note that ICT is a prerequisite to accessing OGD but not a barrier since our finding indicate that all the participants had access to ICTs. However, participants had challenges relating to the cost of data and internet access and access to ICT infrastructure. The majority, namely 87% of the participants, were unaware of the OGD concept,

some even while using OGD. The participants' recommendations towards improving OGD awareness include advertisements on poles, in malls in the area, career expos at schools for learners to be informed, and community-based organizations to engage with the youth in the area.

The findings showed that the use of OGD has the potential to enhance positive empowerment outcomes in creating awareness of youth employment opportunities when well utilized. The growth of mobile phone technology and access to cyber cafés in the Alexandra Township has contributed to access to ICT and OGD. However, promoting and awareness of OGD and reducing the cost of accessing the internet is essential for growing the use of OGD for finding youth employment opportunities in South African. The study made both practical and theoretical contributions. The practical contribution includes insights into the challenges of gaining access to OGD, raising awareness of marketable skills, skills shortages, and gaining access to employment opportunities. The study's theoretical contribution is the use of the CF to unpack the use of OGD in supporting awareness of employment opportunities, thereby gaining an improved understanding of participants' choices and thus their development outcomes. Future studies are needed to evaluate these findings in other contexts and include additional stakeholders like government institutions.

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