WITS UNIVERSITY

SURNAME: **Mnisi**	
INITIALS: **N**	STUDENT NUMBER: **959858**
E-MAIL ADDRESS: **ntombimnisi@yahoo.com**	
CONTACT NUMBER: **071 244 5384**	

RESEARCH TOPIC: **Free wifi giving a voice to the community: A case of the City of Johannesburg public wifi in Soweto**	
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Declaration

I declare that this work is my own unaided work. It is submitted for the degree of Masters of Arts at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any other degree or examination in any other university.

Ntombifuthi Mnisi, on the 15th of February 2019.

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1. INTRODUCTION

The research investigates whether or not access to free public wifi by members of disadvantaged communities can empower them to participate in discussions with a positive impact on their wellbeing as citizens. It investigates this using the idea of "voice", and asks whether the free public wifi enables members of those communities to receive information that is relevant to their needs, to engage in meaningful public debate regarding their wellbeing, and toexpress their needs to the local authorities. By voice is meant the ability of individuals to engage in public debate with other members of the community and government regarding issues pertaining to their wellbeing and obtaining feedback. There was an attempt to establish the extent of participation and public debate in the communities; and whether or not the free wifi provided by the City of Johannesburg has had impact on the community's perception of voice.

To assess the usage of the free wifi by the communities, I used a structured survey questionnaire as the main research instrument and also noted my observations during the time spent at the wifi zones through field notes.

The South African democratic system is still immature and 23 years on many of the people are impoverished and still lack access to basic services, such as running water and electricity. There is also the view that free access to the internet is no exception as a basic service (Tapia and Ortiz, 2008:260). Free access to the internet is deemed to be equivalent to basic services such as housing, education, healthcare, social welfare, transport, electricity and energy, water, refuse and waste removal (Tapia and Ortiz, 2008:260). They also argue that everyone should have access to the internet. According to Tapia and Ortiz (2008:260) the internet enables access to information, helps with education and can bridge the digital divide between countries without

universal internet access for citizens and other countries that are far ahead in the deployment of free wifi such as Estonia, France, Costa Rica, Finland, Greece and Spain where access to the internet has been declared a human right (Visitetononia.com, 2017 and Clinic, H., 2019). Tapia and Ortiz (2008:260) also argue that treating the internet as an essential service can destroy some of the sources and symptoms of "poverty and social exclusion". Schlozman, Verb and Brady (2011) stress the importance of the access to the internet by stating that "the internet has generated a great deal of discussions about its consequences for democratic equality". They even go a step further to state that "it changes everything" because of its characteristic ability to cut across, cultures, nations and social classes as noted by other observers (Schlozman *et al*., 2011). Concurring, Dahlgren (2005) states that many have expressed their hope in the internet's ability to positively impact democracy and assuage some of its problems, such as poverty alleviation, access to government services, freedom of expression and associated rights.

According to Statistics South Africa (2018) Soweto township has a population of 1,271,628 (355,331 households). The community's internet access patterns are as follows:

- 5,2% of the population accesses the internet from home;
- 20,4% accesses the internet using their cell phones;
- 4,2% accesses the internet at work;
- 13% accesses internet elsewhere; and
- A substantial 56,7% has no access to the internet.

Statistics South Africa neglects to postulate a percentage of internet users who access the internet through the city's public wifi. It is stated by Thakudi (2018) that in a study commissioned by BrightWave, the findings revealed that when it comes to "broadband penetration in South Africa's largest township, Soweto, is at 3% compared to 65% in Johannesburg's suburbs." It is reported that "19% of Africa is connected

to the internet, compared to 78% of Europe" (Internet For All - ONE., 2018).

At the World Economic Forum (WEF) 2017, WEF in collaboration with South Africa's Ministry for Telecommunications and Postal Services announced the launch of the *Internet for all* project Development (Reporter, A., 2017). The project is developed in support of the South African National Development Plan (NDP) and the Agenda for Sustainable Development (Reporter, A., 2017). The purpose of the project is to "bring millions of South Africans, including those in rural areas, onto the internet for the first time through new models of public-private collaboration." It is therefore no surprise that organisations such as BrightWave (and Project Isizwe) are at the forefront of bringing the internet to public places in low-income communities.

In this context, this research is considered important. It helps to determine the extent to which members of the community are able to access the internet and how they use it to advance their rights as citizens.

Below is a discussion on the roll-out of the City Wifi Project by the City of Joburg.

1.1 Background to the City of Joburg wifi roll-out by Brightwave

The City's service provider BrightWave (2017) notes that their organisation's intention is to "build infrastructure that allows for the delivery of high-speed broadband access and services that are available and affordable to the majority." BrightWave (2017) further explains that the organisation believes that "Knowledge and communication should be accessible to everyone. Technology empowers economic opportunity, and with technology comes the opportunity to not only be creative, but to have the ability to make yourself heard." It is important to highlight that BrightWave does not only focus on the provision of free wifi for

education, but "BrightWave also provides the internet to private residences, businesses and student residences across Soweto at highly subsidised rates."

The City of Joburg (particularly the Community Development (ComDev) Department) and BrightWave have collaborated to bring to realisation 1 000 free wifi zones in Johannesburg. According to BrightWave (2018) the organisation has successfully managed to install 400 free WiFi hotspots in Soweto, with more installations planned. These FIZs are installed "in public places such as hospitals, schools, restaurants, bars, malls, salons and shops across Diepkloof, Orlando East, Orlando West, Chiawelo, Pimville, Moletsane, Naledi, Emndeni, Dube, Molapo, Rockville, Jabulani, Mapetla."

The table below is used to further clarify the role of BrightWave (BrightWave, 2017).

Table 1: BrightWave

	BrightWave Technologies
Year launched	2015
City where wifi services are rolled-out	Johannesburg
Number of free wifi hotspots rolled-out in the city	1 000
Important note: This case study is based on the Free Wifi Zones rolled-out by BrightWave in Soweto, as part of the City of Joburg's wifi roll-out initiative.	

1.2 The City of Joburg's intention to bridge the digital divide in Soweto

According to the City of Joburg, the city has the following vision as noted by Stockigt (2018), "to bridge the digital divide by creating a smart city. To achieve this, they rolled-out free wifi hotspots, providing each Jozi resident with 300 MB of data per day, bus stations, at selected Rea Vaya bus stations, community centres, schools, libraries, clinics, government buildings and many more community sites." The 300 MB that one receives amounts to 9 gigabytes of data a month.

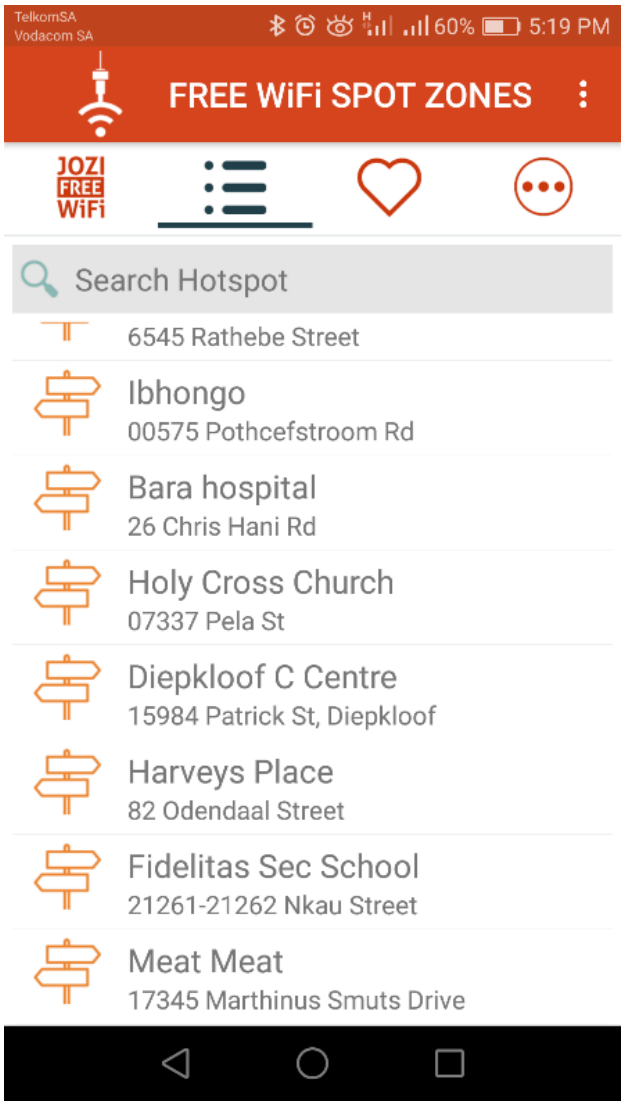


Figure 1: Screen shot of City of Joburg's Free Wifi app (Soweto wifi spot zones search)

This is in line with De Lanerolle's (2018) view that because South African municipalities are able to provide the marginalised households with "a minimum amount of 600 litres of water and 50 kilowatts of electricity for free" the municipalities should also apply this to the internet. De Lanerolle (2012:16) argues that having an internet connection at home makes a difference to the user's frequency to connect to the internet, as people with internet in their homes are able to connect to the internet more frequently (daily) than those who do not have access to the internet in their homes (less than monthly). The ultimate goal of the City is to offer free wifi to all residents, as this will enable the city to create systems to put in place e-government [2]strategies (Joburg.org.za, 2018). The roll-out of the free wifi forms an integral part of the city's e-government strategy (Joburg.org.za, 2018).

Having provided a clear background of the free wifi project and the internet access patterns in Soweto, the following sections elaborate on the aim of the research, the literature review and the theoretical frameworks the research is based on, the research methodology utilised to gather the findings, an analysis of the data gathered, conclusions of the study and future research proposed as a result of the study's findings.

[2] The rendering of government services and information to the public using electronic means.

2. CONCEPTUAL FRAMEWORK

The following are the definitions of key concepts that have been adopted in the study:

2.1 Free or public wifi

Kolte and Chiwande (2013:72) explain wifi as "a wireless local-area network (LAN) technology which could be used in short-range". Simply put, "this is internet access that can be accessed wirelessly within close proximity to the router" that is providing internet access (Kolte and Chiwande, 2013:72). The internet made available through free or public wifi is available to members of the public rather than being a private network.

In this study, the focus is on internet (public wifi) access that is provided by the City of Joburg free of charge to any member of the public in three Soweto communities. The Free Internet Zones (FIZ) are explained as "Public spaces where connectivity has been identified as crucial, these include high economic impact areas and educational sites" (Project Isizwe, 2017). Users have to be at the wifi zone in order to access the internet connection, as soon as one is about 300 meters from the wifi zone connectivity is lost.

2.2 Voice

OneWorld Network (2004:18) defines concept of voice in the context of development for communication as relating to free and unfettered expression from individuals and communities at the local level, that allows them to speak of "people's opinions and desires about policies that affect them." OneWorld Network (2004:18) further states that "the messages that are expressed are targeted at media and policy makers (the government) with the ability to reach the audiences and spark an interest with other enabling audiences both local and international, such as

supporters of the specific cause at the heart of a particular debate" (OneWorld Network, 2004:18). Tacchi, Watkins and Keerthirathne (2009) define voice as "the right to participate in decision making - in social, economic, cultural and political life - and as a crucial human and citizenship right". Tacchi *et al.* (2009) highlight that "the notion of voice carries with it the implication that the citizens are listened to, and therefore feedback is crucial for voice to be considered as existent". Tacchi (2012) states that "the important thing is not to so much to have a voice, but to have a voice that matters." Based on the public sphere discussion in the theoretical framework section, it can be inferred that voice is enabled by the citizens' access to the technology that empowers them to be part of the debates. The lack of access to communication tools is also argued to have a negative impact on voice, as it can result in the isolation of people in development and politics (OneWorld Network, 2004:18).

Carpentier (2007) has also enabled the researcher in the pursuit to clarify the term "voice" in the context of this research. He argues that there is variance between "participation in the media" and "participation through the media". According to Carpentier (2007:17) participation "*in* the media" speaks to the participation of non-professionals in the production of media output (this entails making *structural decisions*, these are decisions related to content and media). Participation in the media allows people to be involved in one of the many types of "micro-spheres" which are regarded as relevant to everyday life and bring the citizens' right to communicate to fruition (Carpentier, 2007:17). Micro-spheres are important as people are "allowed to learn and adopt a democratic and/or civic attitude, thus strengthening (the possible forms) of macro-participation." (Carpentier, 2007:17). Carpentier (2007:17) further defines participation "*through* the media" as a type of participation that "deals with the opportunities for extensive participation in public debate, and the realm of enabling and facilitating macro-participation (its stresses the vital role of citizens in public debate)". Carpentier's

(2007) definition of participation relates to that of public participation as defined by Project Isizwe (2017) previously noted and the definition of voice by Tacchi et al (2009) stated above.

With the above perspectives in mind, it is vital to consider what the term voice will refer to in the context of this research. Voice will speak to the ability of individuals to engage in public debate with other members of the community and government regarding issues that pertain to their wellbeing and receipt of feedback. The studyestablished the extent of participation and public debate in the communities, and whether the free wifi available in the form of the public wifi provided by the City of Joburg has had any impact on their perception of voice.

2.3 Media

The research focuses primarily on any form of media viewed by the community as crucial to the enablement of public debate such as social media, community media and national media. When speaking to media, Tufte and Mafelopulos (2009:12) argue the important role media access has to play in participatory communication. Given the current times where information should ideally be accessed at the click of a button with people able to access information at their fingertips, the role of media in redistributing communication remains crucial. Kumar (2011:3-4) in his study of development communication articulates that there are three prerequisites for development communication namely, the communication approach should be human and localised instead of it being intangible and at a high level; the communication links (such as media) should be trustworthy and finally, communication should be accessible to all. Kumar's third point is critical to this research, as it challenges the ability of development communication (communication enabling tools such as free wifi) to aid all community members to develop voice and not just the privileged who can afford to purchase their own data.

2.4 Communities

The concept of community/ies will be used loosely to mean people making use of the free wifi, who may or may not reside in Soweto where the free wifi has been rolled-out by the City of Joburg.

2.5 Participation in public debate

Rheingold (2008:101) states that individuals' public voice amassed in dialogue with the voices of other individuals is the core of public opinion. In the context of this research, participation in a public debate will be used to refer to instances where the participants comment on social media platforms and communicate amongst themselves, communicate with local government and other media platforms regarding issues that are of concern to them as the citizenry. For example, the research aspired to understand what issues the community members have brought to the attention of local government, how this was done and whether the community members were able to receive feedback from the government officials concerned.

3. AIM

The purpose of this research was to investigate the extent to which the availability of free wifi in a community can enable voice for that community. I have done this by administering a survey and observing users at three wifi zones in Soweto, namely Protea Point, Thokoza Park and Regina Mundi church through which I hope to show the extent to which the communities' "voice" may be enabled by access to the internet.

I looked at the level of participation of the community members by questioning whether free wifi has enabled them to participate and engage in public debate. I also looked at whether individuals in the community were enabled to access information that empowers them to engage in public debate, to make their needs publically known to their local government and lastly, to receive feedback from their local government.

Through the inquiries cited above, I aimed to assess the extent to which individuals were enabled to engage meaningfully with community members and government regarding issues pertaining to their wellbeing.

4. RATIONALE

My research is important as there is a continuous emergence of social media platforms and other digital communication platforms which have changed the manner in which people interact and the realms within which these discussions take place. An investigation into the internet as a public sphere enabled by the free wifi stands to enrich the existing knowledge in the field of media studies. It is vital to investigate whether the roll-out of free wifi in marginalised[3] communities such as Soweto has had an influence in the community's voice and if so, how. South Africa's democracy is nascent and the issue of public participation remains a topical one even in mature democracies such as the European Union (EU). The EU is still marred with concerns over its democratic deficit and what was considered a low degree of citizen participation in key political processes after 50 years of existence (Gripsrud, 2007:479).

Goldstuck (2017) reports that "the single most common use of the Internet among South African adults is communication, reported by almost a third (31%) of respondents, followed by social networking (24.9%) and information (23.7%), both reported by almost a quarter of respondents. Only then comes entertainment (22.1%)." The statistics provided by Goldstruck provide the indication that communication is the primary reason for internet usage and therefore there is value in learning what discussions are taking place in the community of Soweto and what the discussions reveal about the impact of the internet (free wifi) on voice.

Van Deursen and Helsper (2015) speaking to the benefits of internet usage highlight that there is value in learning "if specific digital engagements can be linked to outcomes in particular life realms." Hampton and Gupta (2008) also recommend further research, specifically

[3] By the term, marginalised communities in the context of this research I refer to a community, which was previously restricted from economic participation because of apartheid policies, which fostered racial exclusion and oppression.

in the field of municipal wifi roll-outs in places such as parks, arguing that the outcomes of the research could assist the built environment in balancing privacy, the safety of the users and other beneficial factors.

Dahlgren (2005:147) posed a question that is still relevant, especially to this particular research, by asserting that many researchers have an interest in learning whether "the internet will have or is having an impact on the public sphere and if indeed there is an impact, what are the attributes of the impact?" This question therefore aids in rationalising the importance and potential findings of this research.

With the previous studies conducted (noted in section 4) having been considered and their findings analysed, I believe that this research has value to add to the existing body of knowledge in the following manner:

While some of the studies were conducted in Soweto such as Topo and Kovar's, the studies are different. For example, Topo's studies free wifi usage with the aim to gain an understanding of why Johannesburg residents choose to use or not to use the Smart City service while Kovar sought to uncover whether the usage of free wifi contributed to consumers' purchasing intentions and return patterns of online purchases.

Many of the other studies are not based in South Africa and it is noteworthy to state that South Africa and Soweto with its rich history presents a unique perspective to study the proposed research problem. The focus of the study is relevant and highly topical in current times where civil society is taking action against the government and its structures, holding the people in power accountable. The internet as a public sphere has brought the debate to the fingertips of citizens and the Soweto residents who have an interest in participating in issues such as politics can use the internet for this purpose. The research sought to uncover whether this community uses the internet for common citizenry issues, personal development or simply for social purposes that have no

benefit to the advancement of issues of public interest. The research will test whether or not the proposal by the flagship free wifi provider, Project Isizwe "*free wifi to enhance public participation*" is a reflection of the status quo. Do the community members use the wifi as per the proposal, such as to engage with educational information which enables the community members to engage in public debate? Do government officials and the media respond to the concerns, suggestions and comments by the community, thereby providing an indication that they are being heard and thus implying the actuality of voice?

Gaining an understanding of what the community members use the wifi for presents an opportunity for further research. For example, there is a view that public wifi should be considered an essential service, but is this view in line with that of the public? The research provided a further opportunity to uncover more insights on the community's internet interactions.

The next section provides insights into the proposed research question and the research sub-questions.

5. RESEARCH QUESTIONS

The following research questions are posed in the study:

Primary research question

To what extent can the availability of free wifi in a community, enable a voice for that community?

Sub-questions

- Has the free wifi enabled community members to participate and engage in public debate?
- Has free wifi availability enabled individuals in the community access to information that empowers them to engage in public debate?
- Has free wifi allowed the community to make their needs publically known?
- Has free wifi enabled the community to express their needs to the local government and to receive feedback from local government?

The next section will provide an overview of existing of literature in relation to the proposed study. The researcher presents various perspectives on the impact of technology on development (ICT4D), the impact of the internet public sphere and studies directly related to the implementation of free wifi.

6. LITERATURE REVIEW

6.1 The ability of ICTs such as the internet to empower citizens

ICTs play a critical role in connecting communities with the government, Gagliardone (2015:1) argues that "the exponential diffusion of mobile phones in Africa and their ability to interact with other media have created new avenues for individuals to interface with power". It is noted in section 1 that over 20% of internet users in Soweto access the internet using their cellphones.

According to de Lanerolle (2012:4) the top five reasons why people use the internet in South Africa are to:

- access information;
- socialise;
- study purposes;
- do their work or business; and
- seek employment opportunities.

Goldstuck (2017) also identities information, communication and socialising, as previously stated. It is noted that two out of every three users of the internet are black, with almost half of internet users being women and every two out of ten users living below the poverty line, while further stating that the internet community in South Africa is "becoming much more representative of the population as a whole" (De Lanerolle, 2012:8). According to de Lanerolle (2012:10) there are still certain people the internet is battling to reach. De Lanerolle states that these people are considered to be on the wrong side of South Africa's digital divide. De Lanerolle (2012:10) argues that those who are on the wrong side of the digital divide are the unemployed, disabled, uneducated, over 45 years of age and those who cannot express themselves in the English language without difficulty (reading and writing). Language, therefore, becomes a barrier to access, as English language literacy is considered necessary for internet use (De Lanerolle, 2012:10).

Papacharissi (2002:9) states that "the explosion of the internet may extend the role of the public in the social and political arena". Papacharissi is amongst the authors who hold the view that "the internet and related technologies" such as cellphones change the way in which people are able to express themselves and encourage citizen activity. While this is a common view, authors such as Gagliardone (2014), Tapia and Ortiz (2008) and Heeks (2002) highlight the importance of the gap between the assumptions of what ICTs can do and what happens in reality, this study being a case in point on the outcomes of the implementation of the ICTs such as free wifi. Van Deursen and Helsper (2015) define this as the second level digital divide "gaps in individuals' capacity to translate their internet access and use into favourable offline outcomes."

According to van Deursen *et al.* (2015:31) it is unwise to assume that those who are "digitally advantaged" will enjoy great spin-offs in all spheres of their lives, suggesting that offline benefits[4] should be viewed as potentially different factors. Van Deursen *et al.* (2015:31) suggest that "as a rule, internet use will confer greater benefits to internet users in life realms where the user has significant resources at his or her command". Van Deursen *et al.* (2015) are supported by Gagliardone (2015) who argues that there is a certain degree of competence that is necessary to first enable the users to be active and secondly to stay active on the platforms for example.

Gagliardone (2015) is of the view that access is not the only barrier to political participation, noting that studies have "highlighted how different forms of participation are encouraged or constrained, depending on the ways they resonate with political agendas". According to van Deursen *et al.* (2015:31) there are "gaps in offline outcomes" of internet usage among what they identified as "socio-demographic and

[4] These are benefits/spin-offs in the internet user's life because of having had internet access and utilising it. These spin offs can be advantages such as improved health and better lifestyle habits as a result of participation in online wellness and lifestyle forums.

socio-economic groups across multiple domains activity", this is referred to as the third-level digital divide.

Van Deursen *et al.* (2015:31) have devised an operational framework [5]for drawing curves of the third-level digital divide to assist in gauging the benefits of internet usage in multiple spheres of life for different sociodemographic groups. Although the model was specifically devised for a community where access to the internet is near universal (Netherlands), it remains relevant to this study, as Van Deursen *et al.* (2015:34) considers countries without universal internet access in the study stating that, "more intensive internet usage can lead to increased employment earnings". This view by Van Deursen *et al.* contributes to the pursuit of what the internet can do for voice in such a country and its communities.

According to Tapia and Ortiz (2008:257) there is a common view that if citizens are given access to the internet, those who have the skills to make use of the internet socially [6] and economically[7] are more empowered to obtain further government services and goods than the people who lack the skills coupled with the internet access.

[5] This is a model designed to enrich existing work in development studies on the outcomes of access to the internet by citizens (van Deursen et al. (2015)
[6] Social use refers to using the internet for political and civic engagement.
[7] Economic use refers to using the internet for education, jobs and earnings.

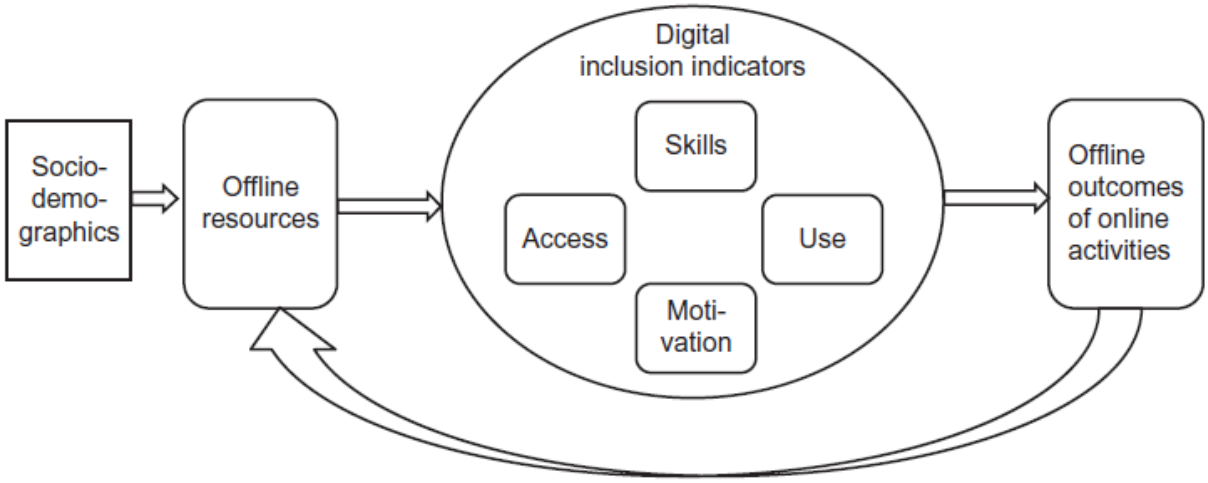


Figure 2: An Adapted Model for Replications of Inequalities in a Digital Society, van Deursen *et al.* (2015:33)

The purpose of the model above is to enrich existing work in development studies on the outcomes of access to the internet by citizens according to van Deursen *et al.* (2015:32). Seeking to justify the generalisations regarding the link between pathways from attitudes, access, skills, use and digital engagements to offline outcomes, van Deursen *et al.* (2015:32) advocate that even if two people have access to the same quality internet (bridging the first-level digital divide) with the necessary and adequate skills (bridging the second-level digital divide) they may not receive the same returns from their internet usage (this refers to the third-level digital divide). Van Deursen *et al.* (2015:32) state that their study focuses on "measuring the benefits that result from internet use across multiple life realms and how these benefits relate to membership in specific socio-demographic groups". The categories of internet are conceptualised and operationalised as (van Deursen *et al.*, 2015:35):

- *Economic uses* refer to the argument that the internet has the ability to increase employment earnings, advantages that relate to finding a job, being able to find goods and services at a cheaper price.
- *Social uses* enable those who are online to engage with people from different places and expand their social circles. It is argued that

communities are also empowered by social media to engage with one another. Van Deursen *et al.* (2015:35) also argued that people with bigger and diverse social circles tend to be more active in their country's politics and the affairs that affect them as citizens.

- *Educational uses* entail searching for information for educational purposes.
- *Political uses* this entails political participation and online voting.
- *Institutional uses* describing the use of the internet for contacting the government and searching "health activities" such as searching for medical information.

In relation to the model above, in an exploratory study conducted by van Deurson et al. (2015:45) in the Netherlands where they examined a set of "eight theoretically grounded theories of categories of outcomes from internet use", the researchers found that the lives of many Dutch people are impacted by the internet in the economic, social, political, and institutional fields.. Van Deurson *et al.* (2015:45) noted that to a certain extent the findings of their research indicate that access to and utilisation of the internet may result in the inequalities over and beyond the "intensity of internet use".

Fraser (2009) conducted a study that reflects on the failure of public wifi in the United States of America. According to Fraser (2009:162) public wifi was supposed to take connectivity to the next level in municipalities. Residents were meant to be enabled to connect to the internet sitting anywhere, in places such as on park benches, in their homes, in an office, or even in a car. The intention of certain municipalities was to offer access to wifi at no cost to the users. The intention was that local governments would install internet-connected parking meters, police squad cars, just to mention a few identified spots (Fraser, 2009:162).

The municipalities had hoped the marginalised would be able to access the internet for the first time and tourists would able to connect to the

internet anywhere. Fraser (2009:162) further states that over a hundred municipalities subscribed to this "dream", without noting when it began for the United States for over a hundred municipalities.I In 2007 the major public wifi projects collapsed, Fraser's study investigated the underlying reasons.

Fraser provides the table below as an example of several different business models municipalities could use when providing public wifi. The different business models include the owner, operator, and financier of the network, among other things according to Fraser (2009:162).

Operation \ Ownership	**Municipality**	**Single private actor**	**Multiple actors**
Municipality	Public utility	Hosted services	Public overlay
Single private actor	Wholesale	Franchise	Private overlay
Multiple actors	Wholesale open platform	Common carrier	Organic mesh

Figure 3: Ownership/operation matrix10 (Fraser, 2009:164)

Figure 3 highlights the Ownership/operation matrix10, with municipality ownership and operation on one end, which suggests that public wifi becomes a basic utility service such as public water service likely to occur in small cities. While the other end is "an organic network where residents and businesses add to the network and the municipality primarily provides incentives to expand the network and to install access points in municipal buildings" Fraser (2009:164).

In order for a free wifi service (such as the service interrogated in this study) to be successfully implemented and for it to be sustainable, Fraser suggests that it is vital for municipalities to decide who pays for the service ultimately. Fraser states that for example a municipality could provide public wifi as an unsubsidised service, partially subsidised, in

certain cases fully subsidised, or it can be somewhat supported or fully supported by advertising. It is further detailed that during the roll-out of the public wifi by most municipalities the agreements were structured as, wholesales, wholesale open platforms or franchises (Fraser, 2009:165). In addition to providing the structures of the arrangements, it is noted that municipalities often cooperated with one or more private operators who would run or own the network.

Fraser (2009:165) states that public wifi was supposed to solve what he describes as the "last mile problem[8] and typically it costs more per user than other legs of the network because the costs of running and maintaining that leg may be allocated to only one user, or at most a household or business". Some of the major public wifi municipal projects failed, cities such as Philadelphia, Chicago, San Francisco, and many others saw their private partners file to cancel contracts and some filed for bankruptcy (Fraser, 2009:170). The failure was attributed to supply and demand factors. On the supply side, the systems could not deliver what the advocates had promised and on the demand side certain users already had access to wired or wireless networks and while the ones who did not have access did not have a positive user experience; timing also had a role, as the municipalities had begun to roll-out public wifi networks in parallel with the private companies. As the rolled-out nationwide 3G data networks, this reduced the demand for public wifi, (Fraser, 2009: 170). An external factor that limited the roll-out of the public wifi was regulations as they limited the ability of wifi to account for citywide wireless internet access. Critical restrictions were imposed on the frequency and power output of unlicensed transmissions, for example with no knowledge the residents could plug in legitimate devices such as child monitors that could result in mayhem on a municipal network, due to certain signal transmissions (Fraser, 2009:170).

[8] The link between an individual user and the broader network.

In order for municipalities to be allowed public wifi access point installations by private ownership, there was still a challenge of coordination and other related expenses that would make it almost impossible to proceed with installations in privately owned buildings (Fraser, 2009:170). However Fraser (2009:176) remains optimistic, noting that with all its problems public wifi might be successful in some cases, highlighting that rolling-out public wifi in government buildings like libraries because "the ratio of expected users to the cost of installation in a single building exceeds that of a citywide deployment". Also noting other suitable public spaces such as schools, high-trafficked public parks as well as courthouses (Fraser, 2009:177). Fraser (2009:177) is of the view that a number of rural municipalities have found success when rolling-out public wifi in their area and offers the framework to evaluate the success or failure of a wifi project. Firstly, many rural areas do not have access to high-speed internet widely available; secondly, households and small business customers may not have access to alternatives/other networks such as "cable companies, telephone companies, or even 3G wireless providers" and that may result in public wifi with its limitations, being attractive and efficient. In conclusion, Fraser (2009: 177) states that the US municipalities were unable to build the networks as promised, and this meant that they could not meet the expectations of the users, as they had little reason to visit the public wifi spots to only access limited networks they delivered, attesting to Schlozman's *et al.* (2011) view that "there is a difference between having internet access at home and elsewhere".

Tapia and Ortiz (2008:257) also argue that slow and unreliable service of the municipal wifi in the US was a contributing factor to the wifi project failure. Public wifi did not deliver a citywide network due to what emerged as technical and regulatory limitations, therefore this resulted in the municipalities not being encouraged to roll-out costly networks which were also limited. Tapia and Ortiz (2008:257) further argued that "the development of a formal, national-level telecommunications policy in the United States is being outpaced by

technological change". The targeted users often also have wifi access in their homes, at their places of work, at coffee shops, hotels, airports and in some of the government's buildings, the users who needed wireless access outside areas noted make use of private cellular companies which offer what is considered as high-speed 3G wireless data networks, through more suitable technologies for extensive coverage due to technical and regulatory differences and "as a result, the major public wifi projects were destined for failure" (Fraser, 2009:177).

Keeping with the theme of measuring the success of development initiatives, Heeks (2002) explores whether or not information systems (IS) implemented in developing countries succeed or fail by first categorising what is deemed as either failure or success. Heeks's study contributes to the current research as it is necessary to understand what success looks like from an information system implementation point of view and how the current research can contribute to future research as findings may bring to light information which can aid in the classifying of the city's free wifi roll-out. According to Heeks (2002:2) there are three categories one can employ in categorising technology, namely, total failure, partial failure and success.

Classification	
Total failure	An IS initiative that was abandoned immediately after implementation or one that never saw implementation
Partial failure	An IS initiative where the main goals of implementation are not achieved or where there are notable undesired outcomes
Success	An initiative whose stakeholders are happy that they have achieved its main goals and have not encountered notable undesired outcomes

Table 2: Three categories for classifying technology (Heeks, 2002)

Going further, Heeks (2002:4) states that regrettably, failure is more prevalent than success in IS initiatives in developing countries. Bringing Heeks' classification to free wifi in Soweto, one can measure the success based on Project Isizwe's (2017) definition of public participation noted in section 6.2 and the operationalised definition of voice in the context of this study.

Voice is an obligation for ICT4D (Tacchi, 2012). Tacchi's (2012) research explores the issue of participatory development and open ICT4D, while ultimately discussing issues concerning voice and "thinking about voice as a process and voice as value." Tacchi (2012) experiments with participatory/open content creation in relation to voice and openness as well as the challenges of listening before drawing conclusions regarding opening up ICT4D research.

According to Tacchi (2012) even though issues such as economics and markets are at the top of the international development agenda, the idea of participation, inclusion and engagement have made inroads into it, arguing that when it comes to ICT4D there has been a shift in focus from the digital divide to "digital inclusion, entitlement and engagement." Tacchi (2012) notes that critics of participation in mainstream development paint an unpleasant picture regarding the existing concerns about participation and empowerment, democratic governance and rights-based approaches to development" are simply reorganising earlier notions of participation, which Tacchi notes as lacking "close attention to the underlying causes and power effects of poverty and inequality." Going further to state that certain critics believe that the "ideal participation" must be assessed to identify whether it can be utilised for the purpose of enabling the poor to participate meaningfully in the decisions that affect them, as there is proof that the works of participation can result in people attaining a sense of belonging and control over their lives, participation can also strengthen the "legitimacy of the government".

Tacchi (2012) goes further to argue that media researchers should open up to theorising media as practice, proposing three benefits for advocating this:

- It challenges and moves beyond the functionalist approach of some media research;
- It acknowledges the complexity and variability of practice; and
- It explores the relationships between media practices, and between these and non-media practices.

Ultimately, it aims to widen the focus of media research in order to be able to think about media's consequences on social life more broadly.

Tacchi (2012) also calls for similar decentering of research in the field of ICT, highlighting that ICT4D should focus on open social arrangements instead of ICT itself. This view is motivated by similar concerns as stated above regarding media research to move away from functionalist understandings of ICT, recognising complexity and variation and considering the impact of ICT on other social and development processes on a broader scale and the need for ICT development to take into account the specific contexts and wider development goals for appropriate solution design.

In the section above a clear distinction is made between what the implementers of information communication technology argue it can do for people and their development versus what happens in reality, how one can measure the success or failure of the information technologies is also elaborated on and studies that relate to the failure of a previous wifi implementation initiative have also been discussed. Now that the technological aspect has been discussed (speaking to the digital divide and the means to bridge it) the next step is to assess the impact of the internet on voice, as it is key to the study to uncover what free wifi can do for voice.

The next section focuses on studies that comprehensively critique the internet, how it has been used and the purposes for which it is utilised

with the aim to understand how it can ultimately contribute to the community's voice.

6.2 The internet as a public common and the gaps between what the internet can do for citizen's voice and reality

Polat (2005) first critiques the role of the internet as an information source, looking at the internet as providing more information. Although the internet enables access to information and dissemination of information to many users at one go, the availability of information, such as political information does not equate with people making use of the information. He therefore, suggests, that there are a minimum of five limitations to the potential of the internet's contribution to a more informed society. The first limitation addressed is the assumption that with increased access to the internet and the availability of information, one can, therefore, assume an informed society, however what is neglected by this assumption is that information available on the internet requires processing on the part of the user for it to have meaning, arguing that "without such processing, information is no more than raw data" (Polat, 2005). Not neglecting each individual's cognitive ability to process and understand the information presented, as he argues that improvements in the media, such as the internet, do not change the cognitive limits of the person and can actually hamper the individual's judgement ability due to excess information. However, he also suggests coping mechanisms for excess information such as "developing coping and filtering habits."

Polat (2005: 438) states that the second limitation linked to the internet is the quantitative increase on a certain topic not the range and assortment of arguments or even the richness of the thematic aspect of the information – linking this to the media gatekeeping processes. Further noting that the argument against the notion of the existence of gatekeeping, these arguments are perceived as untrue, as "search engines also operate systematically to favour some websites (hence information

sources) against others" (Polat, 2005: 438). He notes that users are guilty of accessing traditional mediated news sites rather than a radical new source of unmediated information or even communication amongst citizens and their appointed officials, further fuelling the argument that the potential of the internet to offer alternative sources of information as limited. The third limitation of the internet's contribution to a more informed society is attributed to unequal distribution, as it is argued that the internet is more likely to advantage those who are perceived as already advantaged when using income, skills and access to political links as yardsticks, as these are vital predictors of participation highlighted by Polat. Due to the fact that the internet and the infrastructure required to provide internet, this favours developed areas and not the rural, simplifying the notion, he states that the lack of physical access to the technology is a barrier to a society that is more informed. The fourth limitation is the various motivations for people's use of the internet, for example it has been noted that those who with a higher educational background are more likely to use the internet in a manner that is instrumental than those with a lower educational background, as the group with a lower education background tends to be more inclined to use the internet only for entertainment purposes. The fifth limitation of the internet is that it may lead to social fragmentation. It is argued by Polat (2005) that when compared to traditional media, the internet promotes audience fragmentation which could result in an increasing breakdown of individual agendas and lower volumes of shared knowledge within the community. He also critiques the role of the internet as an information source, addressing the view that more information will lead to more participation. It is vital to understand whether there is theoretical and empirical evidence that there is a positive correlation between levels of information and political participation by the citizenry (Polat, 2005:441).

Polat argues against the view that there is a connection between political participation and the level information the individual's access. Users who are more knowledgeable about current affairs and the latest

information on politics may potentially participate more because they understand and are able to connect the political situation to the consequences for their lives. While on the other side they could be more negatively impacted by the political information and it may lead to them withdrawing rather than participating. He also notes that it has been argued that information availability regarding politics for a particular public does not affect the participation levels of that public. Polat questions the internet's ability to improve and qualitatively alter the existing communication systems, or if it only creates a quantitative increase. Exploring two aspects the internet's abilities impacts communication, firstly whether the internet affects communication capacity? And secondly, if this is indeed the case, how does this affect levels and the methods of political participation? Polat (2005:443) argues that the internet and its communication capacity is linked to its ability to provide what is viewed as convenient, affordable and innovative communication methods. These methods are considered to be more attractive to certain people, such as the youth, those who are immobile due to factors such as health related reasons, age or a lack of social skills. It is noted by Polat (2005:443) that for one to understand the ability of the internet to increase communication capacity, it is first important to comprehend the various types of communication as each of the forms of communication supports a different model of democracy and a different understanding of political participation. Polat (2005:443) introduces Weare's typology of communication and demonstrates how the internet promotes each of the four different forms of communication, namely conversation, information aggregation, broadcast and group dialogue.

- *Conversatio*n is defined as one-to-one dialogue such as face-to-face or telephone conversation. The internet empowers people to communicate swiftly and at their own choice of time, such as using email, this means that there are no restrictions concerning office hours.

- *Information aggregation,* the internet supports the collection of information from a large number of people by a single agency online polls, for example.
- *Broadcast* this is communication which is from one centre to many, such as television, the internet is credited with converting the user from a passive consumer of information, as users are now also producers of content.
- *Group dialogue,* this is an interaction between a great number of senders and receivers. It is argued to be the most difficult form of communication as it requires "sustaining large numbers of links and high levels of coordination". Online discussion groups and online chat rooms are examples of contribution of the internet to group dialogue as a type of communication.

According to Polat (2005:444), not all the forms of communication are equally affected by the internet. Noting that the impact of the internet on the first two forms of communication is likely to be of a quantitative nature as opposed to qualitative, as it is based on the internet's ability to improve the communication's convenience. However, the negative impact of the internet on the value of dialogue does not go unstated, he suggests that the virtual forms of political and social communication are not adequate as a substitute for traditional face-to-face social interactions in local communities. Concluding the discussion on the exploration on whether the internet affects communication capacity, Polat (2005:445) notes that the internet increases the communication capacity, in an imbalanced way, as it supports some forms of communication more than others. He then continues to explore the capability of the internet to increase communication capacity and political participation. Polat proposes that the potential of communication of the internet is highest in the area of group dialogue, however when compared to the use of the internet for harnessing participation modes that are based on group discussion and debate its ability is limited. Yet, it seems that those who are in politics prefer

using the internet for the purpose of information aggregation whereby stakeholders use online voting, surveys and polls, and they also use email between the public and the representatives (Polat, 2005:445).

It is noteworthy to state that Schlozman *et al.* (2011), conducted their study with the specific interest in establishing whether the internet can encourage "equal citizen voice in politics". There is a general consensus amongst scientists who research the impact of the internet in the issue of politics (citizen participation in a democracy) and they are cautious of its impact on existing patterns of behaviour (Schlozman *et al.*, 2011). For example, if people are not interested in participating in existing public commons for the discussion issues of public concern, their behaviour may stay the same even when they have internet access. Polat (2005:438) also supports the view that a large number of people use the internet to pursue their offline habits. Schlozman *et al.* (2011:122) go further and state that "the internet tends to reflect and reinforce the patterns of behaviour of that world and constitutes politics as usual conducted mostly by familiar parties, candidates, interest groups and new media".

Mahlouly (2013:2) reviews the public sphere theory in the context of the digital era, highlights what is perceived to be parameters which are likely to influence the way consumers and the citizens express their subjectivities and influence their political reality in the twenty-first-century. Mahlouly does this by considering the latest criticism of virtual public spaces, looking at it from the emergence of publicity and public opinion perspective, in the context of the eighteenth century and proceeds to highlight the similarities of the historical environment versus the current digital revolution.

According to Mahlouly (2013:3) mainstream media still maintains an impartial power over the distribution of discourse, singling out political and cultural discourses. However, the arrival of the internet, with it in turn, social media, has provided consumers of information the chance to

be both information producers and influencers of their cultural environment. It is therefore due to this ability of the internet that Mahlouly (2013:3) is of the view that "the digital revolution empowers citizens with more freedom of expressions and more influence on their cultural and political environment", while, other authors have argued that "digital collaborative media are also driven by economic interests, which affects the quality of online social interactions. Additionally, aside from corporate interests likely to affect future sociological patterns, online interactions are potentially shaped by technological infrastructures." Mahlouly (2013:4) highlights that according to previous research into the application of communication technology (such as photography and television) prior to the emergence of the internet it has been previously proven that communication technologies are applied in such a way that they reproduce power relationships. Mahlouly states that the application of these technologies reflect individuals' socio economic environment, concurring with authors such as Deursen *et al.* (2015). According to Mahlouly (2013:4) this has led some scholars to the conclusion that usage of technology is hardly for a specific duty or social practice regardless of its characteristics, and thereby internet users are free to create their own social reality. Mahlouly (2013:5) further states that it has been precisely argued that "freedom of expression is dependent on the way social platforms are designed." Going further to state that because users are limited by the infrastructure design of the platforms, these limit the user's opportunity to perform their social reality, secondly these platforms are conditioned by economic interests, which means that many users are enabled to create and share content thereby enabling commercial transactions, thereby increasing the likelihood of the quality of social interactions and the citizens' ability to engage in rational debate concerning public matters.

Mahlouly (2013:18) concludes that the economic parameters that are likely to impact the technological design of today's communication devices are comparable to the commercial and political interests that indirectly motivate the emergence of the bourgeois public sphere.

Another similar aspect to the online (virtual) public sphere and the normative public sphere is the emancipation of individuals' subjectivities, as everyone is regarded as a contributor to the collection of discourses, thereby demonstrating their own identity in a social movement, similar to the normative public sphere. According to Mahlouly (2013:2) "the most significant difference between the emergence of the bourgeois public sphere and the liberalisation of online public discourses lies in the intellectual leadership."
The ability of the internet to contribute to a more informed, politically active individual and society has been critically considered above. We have also been warned of the internet reproducing power relationships through generations reflecting individuals' socio-economic environment and lastly the various uses of public wifi such as work and the provision of third place for users to connect to the internet have also been discussed, to deviate from the narrow pursuit of ICT and development communication scholars. Therefore one is able to argue that the current research study does not reproduce existing clichés of development communication research which paint only a glowing picture of the communication technologies' impact on the voice of the citizenry.

The next section focuses on studies directly related to "free/public wifi" and the internet as a tool for social inclusion concluding the literature review of this study.

6.3 Studies directly related to "free/public wifi" and the internet as a tool for social inclusion

It is important to highlight that most of the studies reviewed are vested in the field of ICT. Authors such as Wells and Lewis (2006), Powell (2010), Sambasivan and Aoki (2017) are amongst many authors within the ICT field who have conducted studies relating to the internet and public spaces. The subject of public spaces and free wifi has also been explored by researchers in the field of media and journalism.

Hampton, Livio and Sessions (2010) in their study explore how technological advancement such as free wifi access in public spaces influences how people maintain social networks, access information and how the use of public spaces may advance or hinder existing social trends. The aim of the study was to investigate "the impact of wireless internet use on urban public spaces, wifi users, and others who inhabit these spaces". Their study explored how "public wifi is related to processes of social interaction, privatism, and democratic participation".

The methodology used in the study is qualitative; the researchers used observation as their research instrument. They studied "parks, plazas, and markets in four North American cities and surveys of laptop users in those sites". Findings of their research revealed that "wifi use within urban spaces affords interactions with existing acquaintances that are more diverse than those associated with mobile phone use". These researchers also came to the conclusion that "urban public spaces are not a public realm for wifi users, the activities in which they engage do contribute to broader participation in the public sphere."

Papacharissi (2002) studies the ability of the internet and its surrounding technologies to truly revolutionise the political sphere or whether these technologies will have an effect on the existing patterns of political activity. She asks "will these technologies extend our political capacities or limit democracy – or alternatively do a little bit of both?" An important point raised by Papacharissi (2002:11) is one that is critical to the findings of this study, she argues that there should not be a confusion on the concept of a public "space" with that of a public "sphere". Alluding to a clear distinction, she states that as a "public space the internet provides yet another forum for political deliberation. As a public sphere, the internet could facilitate discussion that promotes a democratic exchange of ideas and opinions." Therefore she chose to examine the online discussions taking place through the internet as well as their contribution to democracy, focusing on American democracy.

In the attempt to answer the question stated above Papacharissi (2002:12) endeavoured to question whether the internet can indeed be considered a public sphere, by exploring if the internet can promote rational discourse, thereby resulting in the ideal public sphere? Whether the internet can reflect the co-existence of various public spheres online? Whether through the discussions taking place via the internet encourage democracy? And "will the revolutionary potential of the internet be ultimately absorbed by a mass commercial culture?" After exploring various literature sources, Papacharissi (2002:18) concludes that the internet is able to enhance the public sphere, in a way that doesn't equal past experience of the discourse, arguing that if the internet does become a public sphere it will be one that is different, and it will improve democracy and dialogue, in a way that has not yet been experienced, "the content, diversity, and impact of political discussion need to be considered carefully before we conclude whether online discourse enhances democracy."

Dahlgren (2005) begins his argument for research into the internet, public spheres and political communication by asserting that the topic of the internet and the public sphere is one that now occupies a permanent place in research. As a point of departure for the study, Dahlgren (2005) presents a brief explanation of the key elements in the public sphere notion, followed by a discussion on the perceived current challenges encountered by democracy through the public sphere paradigm.

Dahlgren (2005:148) argues that the public sphere is constituted on "three constitutive dimensions", namely structural, representation and interaction.

- The *structural dimension* entails the formal institutional features such as media organisations and the legal framework which defines the freedom and constraints on communication. This is the dimension that channels attention to traditional issues of

democracy such as freedom of speech, access and the dynamic of inclusion and exclusion. Dahlgren (2005:149) alludes that in a society where democracy is not functioning well, it is unlikely that it will enable a vigorous public sphere. When it comes to the internet, according to Dahlgren (2005) the structural dimension is fixated with the way in which the communicative spaces relevant for democracy are broadly configured, as such factors may have an impact on the accessibility of the internet.

- The second dimension, which is the *representational dimension* focuses on the media output, such as mass media and targeted media (Dahlgren, 2005). This dimension presents the challenges regarding the purpose of media output for political communication, as stated by Dahlgren (2005). Where questions such as the accuracy, fairness, wholeness, agenda-setting and ideological tendencies amongst others are addressed (Dahlgren, 2005).
- The *interaction dimension* has to do with two aspects, firstly "the citizen's encounters with democracy" and the interaction occurring between the citizens, this can be anything from a dialogue to a meeting with a large number of people (Dahlgren, 2005).

According to Dahlgren (2005) with the arrival of the internet civic interaction makes a big leap, taking discussions online, and thereby accentuating the sprawling character of the public sphere. According to Dahlgren (2005:149) "Interaction actually consists of two aspects. First, it has to do with the citizen's encounters with the media – the communicative processes of making sense, interpreting, and using the output. The second aspect of interaction is that between citizens themselves, which can include anything from two-person conversations to large meetings." Dahlgren (2005:150) concludes the discussion of the three dimensions by stating that these three dimensions are the point of departure for an analytical pursuit to examine the public sphere of a given society or reviewing the contribution of certain communication technology.

Dahlgren (2005) also tackles some current issues of democracy, namely the destabilisation of political communication and multi-sector online public sphere. Providing information on ways that the traditional systems of political communication in Western democracies are being destabilised by changes in late modern society, Dahlgren (2005:150) notes challenges such as the growing cynicism and disengagement of citizens; the growing number of political activists and mediators with professionals such as spin-doctors sometimes being in more decisive roles than journalists. The changing formats of media output together with the growing number of media outlets and channels, blurring the distinction between journalism and non-journalism. According to Dahlgren (2005:150) the extent to which new ICTs are enhancing democracy is unclear. However, the destabilisation is able to extend political communication through horizontal civic communication and vertical communication amongst citizens. The internet is argued to be integrating with an established system of political communication while also being utilised to oppose established power structures, (Dahlgren, 2005:151). Dahlgren (2005:151) argues that research has proven access to the internet with political motivation of those living in open and democratic societies being able to enjoy viable possibilities for civic interaction but the internet does not promise to be a quick fix for democracy.

Hampton and Gupta (2008) looked at "how wireless internet use in public and semi-public spaces has an influence on social life", by adding to the debate the element of whether or not free wifi may influence the structure of a community. The study was conducted in Boston and Seattle in the United States and the researchers used observation as their qualitative research instrument. The study didn't look at free wifi in the context of public wifi provided in public space for public usage but ubiquitous access, wifi accessed in places such as coffee shops where wifi is accessible. Conclusions of the study uncovered that there are differing wifi uses and the uses provide contrasting outcomes for the community, citing that "Two types of practices, typified in the

behaviours of ‘true mobiles’ and ‘place-makers,’ that offer divergent futures for how the deployment of ubiquitous Muni wifi may influence the structure of social networks and social relationships in public spaces.”

Distinguishing between what they define as “true mobiles” and “place-makers” Hampton and Gupta (2008) state that the true mobiles advanced the trend of using the internet at a third place (away from work and home). However they were not observed taking on the opportunity of interacting with others, they rather put-up barriers in the physical and sociological form. The true mobiles are also documented as using the public spaces for the purposes such as work with regards to their use of cellphones the true mobiles used the internet to connect with “people-in-any-place” and not “people-in-place”. True mobiles also spend their time at the wifi zones in an effort to be away from their family or the other parties at home. Place-makers, on the other hand prefer public wifi for the social interactions it affords them as their primary reason is not to work but rather to interact with others, strangers even. Place- makers use the wifi zone/area to connect “place-based interactions”, this is called “glocalisation” differentiating themselves by using the public place for interactions that are not private, Hampton and Gupta (2008:20-21).

Further noting that in their study, they found more true mobiles in paid observation spaces such as coffee shops (where one would have to purchase something such as a cup of coffee to access the wifi) than the place- makers that were found in completely free wifi places. However, Hampton and Gupta (2008:22) note that they did not observe an instance where the presence of free wifi created “the presence of one-to-one relationship”. Hampton and Gupta (2008:22) highlighted a critical observation, stating that the environment where wifi is paid for was more conducive for users classified as true mobiles as opposed to those who were classified as place-makers; a second observation is that the environments that are viewed as favourable for place-maker can also be

adjusted to create discomfort, for example, a coffee shop could remove all plug/power points, limiting the wifi access at peak time and creating inconvenience for the usage of toilets amongst other examples. Hampton and Gupta (2008:23) also categorically state that nothing stops the government wifi providers from also employing the strategies previously mentioned.

Tapia and Ortiz's (2008) study investigates the United States cities' claims that a municipal network wirelesses have the ability to bridge the digital divide and "employ a discourse analysis to examine the digital divide language" the 24 municipal networks investigated utilise. Tapia and Ortiz (2008) highlight the underlying assumptions of municipal officials who promise citizens universal wireless accessibility. Using discourse analysis Tapia and Ortiz (2008:265-262) focused on access to the ontological and epistemological statements behind a project, makingan assumption that "discourse analysis enables us to reveal the hidden motivations behind a text or behind the choice of a particular method of research to interpret that text". Tapia and Ortiz (2008) collected data to create a dynamic and growing database of municipal wifi in the US. According to Tapia and Ortiz's (2008:267) findings regarding the literature relating to the digital divide, these authors were able to identify proof that supports most authors' belief in their view that providing access to the internet alone does not resolve the challenge of social exclusion in the information society, however, access, together with changes in education and training, culture, and economic stability bears the potential to bridge the digital divide.

Schlozman *et al.* (2011:121) focus their research on the role played by the internet by providing what they refer to as "equal voice" for each citizen in issues of politics. The study addresses issues of the previous exclusion of African American people and women in politics and also highlight that in the current American society some are still excluded from participation due to their age, immigrant status and incarceration. Taking this background into consideration they question the internet's

ability (as the great equaliser) to allow all the citizens access into the public commons and enable political participation thereby granting all citizens equal voice. Schlozman *et al.* (2011) believe in the potential of the internet and more recent forms of online activity, such as blogs to eradicate inequalities of political voice in comparison to traditional forms of political participation. Their study asks questions such as whether or not the internet brought new people into the political realm; if the internet provides accurate political information; whether it encourages understanding between people with different views; creates community? And lastly what is its implication for democracy? (Schlozman *et al.*, 2011:121). Arguing that most of the users use the internet for nonpolitical activities, stating that these can be anything "from finding directions to viewing pornography to keeping up with others via a social networking site" (Schlozman *et al.*, 2011:121).

Ylipulli, Suopajärvi, Ojala, Kostakos and Kukka (2014) also conducted a study related to free wifi in public spaces. In their study they focus on "the appropriation process of two public computing infrastructures in the City of Oulu, Finland, a municipal wifi network and large interactive displays". The study investigated and analysed the adoption of pubic wifi and public display technology in public spaces using ethnographic methods to collect data. The findings revealed that "the adoption of the interactive public displays has been slow due to several factors, such as the unfamiliarity of the technology and its questionable utility; in addition, people are concerned about engaging with public displays in public settings" (Ylipulli *et al.*,2014:156). In conclusion Ylipulli *et al.* (2014:156) highlight the issues which "public computing infrastructures, municipal wifi network and large interactive displays" designers should take into account when deploying these technologies in urban spaces in the future.

Forlano (2008) delves into what the American media had captioned "Anytime, Anywhere" to reframe the debates which were happening at the time about the public wifi. In the study Forlano quotes many other

studies[9] that have focused on the topic of public wifi and states that these studies were focused on documenting the development of city wifi networks in the United States and Europe, noting that these studies were fixated on technical, economic use of wifi in public spaces and policy aspects of the wifi networks. What these studies should have focused on according to Forlano is exploring media representations of free wifi as a technological enabler. Forlano uses various methods namely content analysis, participant observation, a focus group, a survey and interviews to bring the point across that the beloved phrase of "anytime, anywhere" by the media does not give a true analysis of the current situation, as one would suppose it to mean that the users could have convenience, freedom and a widespread number of FIZs.

A study that could be more closely linked with my study is that of Topo (2015) where the researcher explores Johannesburg's free wifi to understand what makes people use or not use the provided Smart City services (namely, government e-service websites and government city wifi). Topo (2015) holds an interpretive perspective and employs qualitative methods to conduct the study. Data was collected through semi-structured face-to-face interviews. A finding that is relevant to this study, noted by Topo (2015) is that access to the services such as e-services is impacted on by the skills/ability to access, skills, technologies and services that are required for digitally connected living. Topo points out that in the South African context with the country's history of inequalities (such as the previous (pre-democracy) education system which was based on racial discrimination on the people because of the race) this can pose an obstacle to access.

Kovar (2016) also contributed to the discussion on free wifi. His study was aimed at understanding the impact of public wifi on consumers' purchase intentions and likelihood to return their purchases through

[9] Namely, Bar & Galperin, 2004; Bar & Galperin, 2006; Gillett, 2006; W. Lehr et al., 2004; Longford, 2005; Medosch, 2006; Sandvig, 2004; Werbin, 2006

theuse of public wifi. Using quantitative methods, using self-administered questionnaires to collect data, the findings revealed that "the four access variables, namely - material, mental, usage and skills access - have an influence on the intention to use free wifi which, in turn, have an influence on the likelihood to return or purchase something. Implications for marketers and businesses is that they have to consider the digital divide when marketing to consumers in South Africa and that offering free wifi at a commercial place have positive implications for both customers and businesses".

6.4 A wifi project providing free internet to encourage community participation

The City of Tshwane's service provider, Project Isizwe's wifi project is considered as the flagship free wifi project in South Africa (Project Isizwe, 2017). Information cited about Project Isizwe assisted this study in laying a solid foundation for this research project. I have also cited the aspirations of the project below, as these aspirations aided me when assessing the possible impact of free wifi on voice.

Project Isizwe (2017) identifies itself as a "non-profit organisation which aims to bring the internet to people across South Africa, by facilitating the roll-out of free wifi for public spaces in low-income communities. The core focus of the organisation is on connectedness for the purpose of education. Working closely with the public sector in deploying high-quality free wifi networks at the lowest possible cost". Project Isizwe believes that the best means of addressing inequality is through the deployment of government-funded free wifi throughout public spaces in low-income communities. Each citizen should be within walking distance of free wifi. Project Isizwe (2017) highlights that they have "built the largest public free wifi network on the African continent", with the aim to enable "sustainable free internet access in low-income communities across South Africa". Project Isizwe is in support of the view that the internet is a human right and has stated

that access to the internet can aid in bridging the digital divide (Project Isizwe, 2017).

Project Isizwe (2017:3) in their proposal for "free wifi to enhance public participation" is of the opinion that public participation is essential for community development. In making its argument about the provision of free wifi to enhance public participation, Project Isizwe (2017:4) uses an example of the current South African government's interventions to involve the community in legal and government matters as mandated in the Constitution of the Republic of South Africa (1996). Project Isizwe highlights that "Parliament and provincial legislatures have common mechanisms to ensure that the public has the ability to engage in law making through education, outreach and information dissemination. The ability to propose, comment or criticise in both written (petitions) as well as oral (pre-hearings and hearings) form."

The mechanisms previously noted bear the following limitations according to Project Isizwe (2017:4):

- Residents are often not at home when the appointed community development workers visit them to solicit their input;
- Citizens have to travel to the places where the hearings are held, and this poses a problem as there is a cost implication;
- The educational levels of the community members are often not sufficient for them to sign petitions and understand legislation; and
- The citizens are not aware of hearings and opportunities created for them as citizens to voice out opinions and needs.

Project Isizwe (2017:6) proposes that the solution to involving the public/community participation is through access to free wifi. If the South African government is to install free wifi in the homes of citizens, there will be "radical digitalisation of participation" (Project Isizwe,

2017:6). Meaning that the community will have access to the internet in order to acquire knowledge on their own by learning the legislation and crucially, their rights as citizens of South Africa. An example that proposes solutions to the limitations noted above is that the citizens will have the ability to "download the schedule of hearings, petitions and will know when community workers will be in their area to distribute or collect information" (Project Isizwe, 2017:6).

Project Isizwe's proposal has aided me to provide context of the City of Johannesburg's free wifi project and how free wifi can bring about a positive change in the country.

With the above studies considered, it is clear that my study has a place in research, as my study will uncover findings that will contribute to enhancing understanding of how communities operationalise voice, and if they do so using the free wifi as an enabler, focusing on the community of Soweto as a case study.

7. THEORETICAL FRAMEWORK

As a starting point for the discussion of free wifi and voice, I have chosen the following theories as important theoretical frameworks. The theories have been carefully selected as they will allow for different levels of analysis for voice, at a macro level (is the free wifi providing the platform for public debate?) and at a micro level (does the community use the free wifi for the purpose of public debate and to engage with the relevant stakeholders?). The public sphere theory is a theory at the macro level as it speaks to the realm where public debate takes place the participation and C4D are at a specific (micro) level and are viewed as more practical as they highlight specific actions development communication practitioners view as enabling participation and voice.

Table 3: Main themes of theoretical framework

Theory	Proposition
Public Sphere	• All citizens should have access to public debate spaces • No influence of the state • Enables the formation of public opinion • Citizens discuss matters of general interest • Not a market place • Social status is irrelevant
Participation theories	• Power redistribution (the marginalised communities should be able to exchange views and influence decision-making) • Public participation is an integral part of democracy • Platforms for community engagement should be created
Communication for development (C4D)	• Promotes participation and social change • A tool that strengthens dialogue with the stakeholders of a development project • Aims for sustainable impact • Is sensitive to local culture • Communication is bottom up and inclusive

Common thread

- All citizens should have access to some form of public debate/ engagement platform.
- Citizens should be enabled to participate in debates that pertain to their wellbeing.
- Have an impact on voice and terminate isolation.

7.1 Public Sphere theory

According to Adut (2012:238) the public sphere can both enhance and derail liberal democracy. Papacharissi (2002:10) describes the term "public" as one that is closely linked to the concept of democracy and the principles that require that citizens participate in common citizenry issues.

Before delving deeper into the theory of the public sphere it is necessary to further explore what is a public? Dahlgren (2005:149) makes reference to authors such as Dewey (1954) and the originator of the public sphere theory Habermas when defining states that "publics exist as discursive interactional processes; atomised individuals, consuming media in their homes do not comprise a public." as it is vital not to neglect that democracy rests with citizens who participate in conversations with one another (Dalgren, 2005:149).

According to Warner (2002) a public constitutes of the following:

- *It is self-organised*
  It is argued that a public is a space of discourse organised by the debate itself only. "It exists by virtue of being addressed." Warner (2002:414).
- *It is a relation amongst strangers*
  In the context of a public, it is argued that strangers can be treated as belonging to one world, as strangehood is viewed as "the necessary medium to commonality" (Warner, 200:417).
- *The address of a public speech is both personal and impersonal*
  Warner argues that we should view a public speech in two ways, as addressed to us and as addressed to a stranger, this has a benefit of providing social relevance to thought and life (Warner, 200:418
- *It is constituted through mere attention*
  According to Warner (2002:419) due to the fact that a public exists by virtue of address, it needs to a certain degree or estimate of the

attention of its members. “The cognitive quality of that attention is less important than the mere fact of active uptake” Warner (2002:419) highlights.

- *A social space created by the reflexive circulation of discourse*
  It is argued that “no single text can create a public. Nor can a single voice, a single genre, even a single medium” (Warner, 2002:420). Warner argues that it takes a series of texts over time in order for a public to exist, since it is perceived as a continuous space of “encounter for discourse” (Warner, 2002:420).
- *Publics act historically according to the temporality of their circulation*
  According to Warner (2002:420) publics have a continuous life, arguing that it is in the manner through which text circulate and are responsible for further representation that is convincing of the public’s activity and duration. Warner perceives the internet and other recent media as having an impact on changing the public sphere.
- *A poetic world in the making*
  “Public discourse must characterise the world in which it attempts to circulate, and it must attempt to realise that world through address.” (Warner, 2002:420).

Now that the term public has been interrogated in detail, it is important to delve further into the public sphere theory. The notion of the public sphere is a relevant theory to interrogate in this study, as it is one that is considered to be at the centre of participatory approaches (Communication for Governance & Accountability Program (CommGAP, 2017)).

Defining the public sphere – “The basic blue print”

Habermas (1989:30) noting his disinclination for illustrations, provides the illustration below of the bourgeois public sphere. The purposes of

the illustration is to Habermas (1984:49) define the public sphere to mean "first of all realm of our social life in which something approaching public opinion can be formed. Access is guaranteed to all citizens. A portion of the public sphere comes into being in every conversation in which private individuals assemble to form a public body".

Private Realm		Sphere of Public Authority
Civil society (realm of commodity exchange and social labour)	Public sphere in the political realm	State (realm of the "police")
Conjugal family's internal space (bourgeois intellectuals)	Public sphere in the world of letters (clubs, press) (market of culture products) "Town"	Court (courtly-noble society)

Figure 4: An illustration of the bourgeois public sphere, Habermas (1989:30)

Schlozman *et al*. (2011) argue that in the ideal public sphere the discussions are "open, civil and essential to a democracy". According to Habermas (1989:105) "citizens act as a public when they deal with matters of public interest without being subject to coercion." Goede and Neuwirth (2014:546) highlight that the study of the public sphere "centres on the concept of participatory democracy and how public opinion becomes political action". Goede and Neuwirth (2014:546) further the debate of the public sphere by stating that there are certain elements on which the public sphere depends namely,

- "Universal access or the approximation of universal access to the public sphere;
- A degree of autonomy or freedom of coercion;

- The denunciation of hierarchy, putting everybody on the same level;
- The rule of law; and
- The quality of participation and a commitment to logic."

Authors such as Adut (2012), Schlozman *et al.* (2017) concur on the above elements identified by Goede and Neuwirth (2014:546). With Papacharissi (2002) putting an emphasis on rational public debate and its role in the ultimate agreement and decision making amongst the public.

7.1.1 Historical foundations: Institutions of the public sphere

To understand this notion, it is vital to discuss the historical foundations thereof (CommGAP, 2017). It is argued that the meaning of this notion has been linked to "historical circumstances and technical developments" (CommGAP, 2017). For example, originally it was linked to a physical meeting place, this has changed due to advancement in media and communication technology. It is further argued that the notion of the public sphere has changed from a "location" to a "communication network", (CommGAP, 2017). Schlozman *et al.* (2011) state that the concept of the public sphere can be compared to the Greek Agora. It is stated that the public sphere can be defined as a public space that allows all citizens access and discussions regarding the political discourse and rational debates to take place. During these discussions the citizens have the ability to influence citizenry issues such as public policy "where they inform each other about relevant facts and share and debate their preferences" Schlozman *et al.* (2011). The historical public sphere, tied to a location, such as the Ancient Greece (the Agora), European Monarchies (the Royal Court), salons, tribal gatherings and church congregations.

7.1.2 Political functions of the public sphere

According to Habermas (1989:57) the political function of the public sphere "arose in Great Britain at the turn of the eighteenth century." People who had the desire to influence the decisions of state authority took up it upon themselves to make their needs/views known to the critical public so that these needs/views could be legitimised before this new forum. Habermas notes that this is what gave birth to modern parliament.

7.1.3 The transformation of the public sphere

Habermas (1984) noted that "the public sphere is considered to be in decline due to what he terms "refeudalisation" of power, whereby "the public" now includes powerful organisations that institutionally exert their influence on the public sphere". According to Papacharissi (2002:10) promoters of the internet as a public sphere and an important pillar of democracy are of the view that "the alleged decline in the public sphere lamented by academics, politico and several members of the public will be halted by the democratising effects of the internet and its surrounding technologies."

7.1.4 The concept of public opinion

The public sphere is considered "an integral part of democracy, a social space in which private citizens can engage in debates pertinent to public interest, without influence from the state" (Habermas, 1984). Tufte and Mafelopulos (2009:112) argue that voice and visibility are crucial components of participatory communication in a "mediated public sphere". Habermas (1984) views the success of the public sphere as dependent on "robust, rational and critical debate which is universally accessible by autonomous members of the public".

Simon (2011) in her work in which she aims to "examine Habermas's account of the transformation of the public sphere in modern society", states that it is important to always understand that any effort to contribute to "a systematic account the nature of the public sphere" is without a doubt "unavoidably controversial". True to Simon's (2011) deduction of the public sphere and its controversial nature, Fraser (2013:57) begins her critique of Habermas's account by stating that Habermas' account is one that is "not wholly satisfactory". Fraser (2013:54) notes that the concept of public sphere holds both political and theoretical importance, and provides the definition of a public sphere as "the public of private individuals who join in the debate on issues bearing on state authority". Going further, Fraser highlights that the public sphere's importance is laden in its ability to act as a vehicle for "societal integration". Fraser (2013:57) further describes Habermas's account as "designating a theatre in modern societies in which political participation is enacted through the medium of talk." Fraser pronounces that within this "theatre space" citizens are able to debate on issues such as common affairs and that according to the initial writings by Habermas concerning the public sphere as separate from the state, the official economy and as by no means an arena for buying and selling, rather one for discursive relations. Fraser in her critic of Habermas's view of the public sphere notes that the original public sphere was founded on social exclusions such as that of women. Papacharissi (2002:11) concurs with the views of Fraser by arguing that in its original form, the public sphere was not democratic, as it did not include women and those who were of a lower social class. Due to the exclusions counter publics were formed, which meant that the public sphere was not one/single sphere, and the idea of a single sphere is exactly that, an ideal, as the first assumption noted by Fraser (2013:57). Delving deeper into the issue of a public sphere, Papacharissi (2002:11) also agrees with Fraser that a government which focuses on all the issues of various groups has not yet materialised, therefore there are still multiple public spheres which do not hold equal power and privilege. Fraser (2013:57) goes on to argue that Habermas's account bears with it another assumption that Fraser is

not in agreement with, namely that dialogue should be about what is viewed as a common good, meaning that dialogue about issues of private interest should be restricted, ignoring social inequity as a feasible prospect. For example, if women are not allowed to participate in public debate no effort should be made to address the inequality and that in order for a public sphere to be democratic, there is a necessity for a separation of the state and civil society.

Papacharissi (2002:11) highlights that Habermas is not without company, as there are some critics who took a defensive position in his account, stating that Habermas' vision of the public sphere was one that "outlines a stoic pursuit of an almost impossible rationality".

7.1.5 The internet as a public sphere

The elements of the public sphere have been discussed in detail above, one then has to understand how the internet fares as a proposed modern "public sphere".

Polat (2005:435) states that "the relation between the internet, political participation and democracy has been attracting a growing interest among political scientists as well as communication and media scholars." Dahlgren (2005) notes that there are two contending perspectives in the debate regarding the role of the internet in the public sphere. The first view posits that even though there are interesting changes in the functioning of democracy, little can be attributed to being a result of the internet. Dahlgren details that the reason for the insignificant contribution of the internet to democracy is due to its minimal impact on the "mobilisation of citizens to participate, nor has it altered the way that politics get done." Mahlouly (2013:10) states that one of the most noteworthy differences between Habermas's bourgeois public sphere theory and the modern online spaces is that the "factors likely to affect the rationality of social interactions, as well as the sustainability of public opinion in a digital world, might reside in the fact that the online

public sphere provides every citizen with the opportunity to express himself publicly."

According to Polat (2005:449) in order to evaluate the extent to which the internet can be viewed a public sphere, the internet ought to be evaluated against the characteristics of the public sphere theory.

All citizens should have access to public debate spaces

Polat (2005:449) states that as a prerequisite of the public sphere, all citizens should be able to be members of the public sphere and participate in deliberations to ensure a diversity of viewpoints. It is noted by Polat (2005:449) that the internet is not universally accessed by the public, as this is the case in the South African context. Polat (2005:449) highlights that the use of the internet is mostly limited to people who already have access to rational critical public debate and who are already better off and therefore if the political discussions are moved to a virtual space this leads to the exclusion of those without access to the space. According to Mahlouly (2013:11) a wider range of the citizens' opinions can be expressed as a result of online public platforms and if moderated by "professionals of public expression" the quality of the public sphere need not be compromised. Mahlouly (2013) neglects the challenge of access and states that while on the side, other critics of the virtual public sphere have argued that the quality of the public sphere is "subject to the diversity of participants contributing to the debate" Mahlouly (2013:11). Papacharissi (2002:2) highlights that many authors hold the view that "speedy and cheap access to information provided by the internet promotes active citizenship." However, Papacharissi (2002:26) also argues that the internet as a virtual public sphere is 'exclusive, elitist and far from ideal', concurring with Polat's views. Polat (2005:449) captures the essence of the argument against viewing the internet as accessible by stating that "without a solid policy commitment to provide access to everyone, the internet is but an illusion of openness and universality".

Not a market place

According to Polat (2005:449) "the internet is already colonised by commercial interests largely because of its potential for advertising revenue." As it has been suggested that the internet has been characterised by the production of content that is argued to be commercially oriented media with little focus on the advancement of social welfare or democratic practice (Polat, 2005:449). Another key element of the internet's commercialisation noted by Polat (2005:450) is that even if there is no direct content moderation during online discussions, websites supported by corporates are likely to steer away from content that is perceived as controversial and harsh criticism that may repel potential and current sponsors and in cases where governments provide a virtual space for political deliberation among citizens "such deliberative forums do not capture Habermas's vision of rational critical debate independent from administrative power".

No influence of the state

According to Polat (2005:446) democracy necessitates the existence of a public sphere that is free of governmental and commercial interests, a public sphere which enables rational critical debate.

Social status is irrelevant

Mahlouly (2013:18) when "applying theory to the digital and connective culture of the twenty-first century shows that one of the most significant differences between the emergence of the bourgeois public sphere and the liberalisation of online discourses lies in the intellectual leadership." In the times of bourgeois public sphere publicity and public opinion were led by members of the bourgeois elite in the period that preceded the French Revolution, every citizen now has access to the public scene (Mahlouly, 2013:18).

Enables the formation of public opinion and citizens to discuss matters of general interest

It is argued that the internet provides the prospect to easily find and interact with people who have similar concerns, (Polat, 2005:450). According to Polat (2005:449) "the internet lacks the unity and the rational accord that is fundamental for the public sphere." It is argued that the people who usually participate in online discussions are usually like-minded, thereby attracting people who want to focus on such topics (Polat, 2005:450). Papacharissi (2002: 19) not moving away from Polat's argument, alludes that the internet merely extends our communication channels, without altering the discourse itself as it adapts to the existing political engagements. Mahlouly (2013:18) highlights a similarity between the normative and the virtual public sphere, citing the liberation of individuals' subjectivities as all users of the internet are potential contributors to political discourse. Concluding that the internet is contributing to sustainable political discussions that are vital for a "representative democracy" (Mahlouly, 2013:2).

Concluding the discussion of the potential of the internet as a virtual public sphere, Polat (2005) argues that the internet is limited due to its unequal distribution, highly fragmented structure and increasing commercialisation (Polat, 2005:449).

This is not a complete account of the public sphere theory, however, it is comprehensive to the extent that it will enable the researcher to draw conclusions in relation to the internet and thereby free wifi's ability to enhance for the voice of a community. The public sphere is key in the manifestation of public debate in a democratic society such as South Africa. Public participation theories follow to link the public debate to the availability and access to the public sphere for the citizens.

7.2 Participation theories

7.2.1 Ladder of citizen participation - conceptualising participation as power

Project Isizwe's (2017) definition of public participation is noted as "an open, accountable process through which individuals and groups within selected communities can exchange views and influence decision-making". Babu (2005:242) views participation in the development context as a process that enables all community or organisational members to participate in and have an influence on decisions related to development activities that will affect them. It is argued by Babu (2005:241) that participation emerged in development from the 1960s, noting that it began to attract attention in the field of development as the capacity of state-led development initiatives begun to be questioned.

According to Miroshnikova (2014:11), Sherry Arnstein's ladder of citizen Participation created in 1969 still captivates many practitioners and scholars all over the world, as well as the questions of power raised by Arnstein. According to Connor (1988:249), Arnstein concentrated on the redistribution of power as a non-negotiable for meaningful citizen participation.

Arnstein (1969:216) proposed the typology discussed in this section as her pursuit to encourage in-depth discussions on citizen participation, developed through her work in the field of urban planning in the United States. Defining citizen participation, Arnstein (1969:216) states that it is through citizen power, characterising it as a categorical term for citizen power, whereby power is redistributed and the marginalised "have-nots" who are presently excluded from the political and economic processes are deliberately included in the future. Providing its short description as "the means by which they (have-nots) can induce significant social reform which enables them to share in the benefits of

the affluent society" (Arnstein, 1969:216). Further noting that, the fundamental point of citizen participation is that there needs to be a redistribution of power, otherwise the process of participation becomes frustrating for the have-nots, while also enabling the powerholders to argue that they have considered the views of the have-nots as well, and therefore the present situation remains as only some benefit. Now that a clear definition of participation in the perception of Arnstein (1969) has been provided, the types of participation can now be explained.

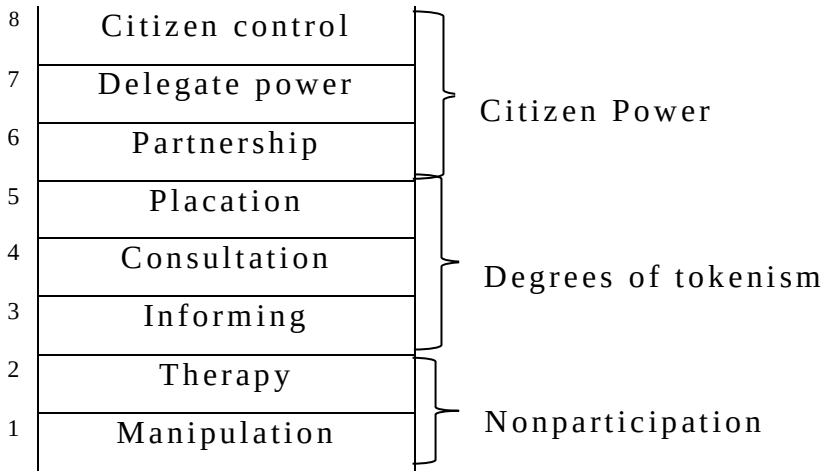


Figure 5: Eight Rungs on a Ladder of Citizen Participation, Arnstein (1969:217)

The Eight Rungs on a Ladder of Citizen Participation (types of participation and non-participation) are explained by Arnstein (1969:217) as follows:

(1)Manipulation and (2) Therapy

This is what is described as citizen non-participation, whereby the real objective of contact with the have-nots is to allow power holders the opportunity to ""educate" and "cure" the participants" and not to enable the have-nots to participate in planning and conducting programmes (Arnstein, 1969:217).

Rungs 3 and 4 below are argued to progress to a level entitled as "tokenism", whereby the have-nots are enabled "to hear and to have a voice" (Arnstein, 1969:217).

(3)Informing and (4) Consultation

Citizens, if granted power by those who hold it, may be able to hear and be heard at this level. However, this does not imply that they are guaranteed that their opinions will be regarded by those in power (Arnstein, 1969:217).

If citizen participation is restricted to these levels there is no assurance that the status quo will change as there is no follow-through, this being referred to as tokenism (Arnstein, 1969:217).

(5)Placation

This level is merely higher than the previous as the have-nots are enabled to contribute and advise. However, those in power still hold the final decision (Arnstein, 1969:217).

Continuing further up the ladder, the citizen's power has incremental degrees of decision making influence.

(6)Partnership

In the Partnership rung, citizens are enabled to enter into partnerships that allow them the power to negotiate with powerholders.

(7)Delegated Power and (8) Citizen Control

At this level, the have-nots gain the majority of the "decision-making seats" or even full control.

According to Collins and Ison (2006) the metaphor of the ladder above has become a continuous part of academic enquiry, noting that it has not only been limited to academic enquiry, it has however also held a permanent place in policy and practice. On the practice side it has been an instrument for designing, critique, implementation and evaluation of participatory processes. However, Arnstein (1969:217) openly states that her proposed typology as per the above discussion is not without flaws as it lacks an analysis of the most important roadblocks necessary for achieving genuine levels of participation. The roadblocks are proposed

to include racism, paternalism and resistance to power redistribution on the side of the power holder. On the side of the have-nots, these roadblocks include insufficiency of the marginalised community's political socioeconomic infrastructure and knowledge base, the challenge of having to organise a representative, as well as accountable citizen group ineffectiveness, alienation, and distrust. Noting another discontent with the typology, Arnstein (1969:217) states that although there are nine rungs noted in the model, in reality during a real programme and when dealing with people, it is possible to have around 150 rungs with an unclear distinction among them. Some of the characteristics used to describe the rungs occurring in other rungs. Babu (2015) suggests that "the citizen participation-rungs on a ladder analogy suggest no logical progression from one level to another, one building to another."

Collins and Ison (2006) argue that Arnstein assumes for participation to be hierarchical and citizens to be aspiring for control held up at the top of the ladder. This assumption is viewed by Collins and Ison (2006) as one that does not always align with participants' reasons for engaging in decision-making processes. Therefore it bares the implication that if the participation process is to be measured, if citizens fail to attain full control, the participation process is an automatic failure or delegitimisation, regardless of whether the citizens that are involved in the participation process are satisfied with whatever level has been attained.

One could argue that this view by Collins and Ison (2006) of satisfaction by the marginalised in a participation process is not comprehensive, as there is a possibility that the marginalised, due to their lack of knowledge and desperation to be a part of decision-making process could settle for tokenism, not knowing there is more to the process than merely stating your views. This is further supported by Tufte and Mafelopulos (2009:4) who argue that one's perspective of participation is vital, further discussed in the sections to follow. The second criticism stated

below is more acceptable, as it considers the nature of the challenge and weighs it against the type of participation necessary.

A second criticism by Collins and Ison (2006) is that there is a direct relationship between non-participation and citizen control which implies that the policy problem remains unchanged and "only the approach of the actors varying from level to level", arguing that various gradations are determined in between. Collins and Ison (2006) further state that this is contrary to the exclusivity of many policy challenges, and suggest that these challenges often require different levels and types of participation. Stating that although there are instances where the types of participation do not equate to citizen control, they are equally valid in the context of the nature of the policy problems being addressed. This view could be argued to be true in some instances of participation, as one such process which took place in South Africa in 2018, namely government public hearings on land expropriation. Although the citizens did not hold complete power, they were granted the opportunity to state their views and these would be taken into consideration when the decision-makers come to a decision on how the process should unfold.

According to Collins and Ison (2006) the third element of critique relates to the "roles and responsibilities of the individuals, communities and authorities involved in participation", arguing against the proposition that the "roles and responsibilities change only in relation to changing levels of power". Collins and Ison (2006) argue that as a consequence of the participation process, the roles of the of individuals may be altered, therefore it is not valid to argue that in order for roles to change they have to be linked to a particular rung, changing the level of power. "These areas of concern about Arnstein's conceptualisation of citizen engagement all point towards an appreciation of participation as more complex than perhaps suggested by the metaphor of the ladder." (Collins and Ison, 2006). Alluding to their unique concerns regarding the ladder, outside of what other critics have also raised as concerns, Collins and Ison (2006) indicate that "ladders do not exist in free space. They are

defined by their usefulness in relation to something else." Highlighting that at a conceptual level Arnstein's theory does not provide a context in which the ladder should be utilised and provides minimal insights as to how participation could be advanced as a collective process amongst all of the stakeholders involved in the development process (or programme).

7.2.2 Support for citizen participation

According to Schlozman *et al.* (2011) when citizens are "politically active" they are able to communicate their needs and their preferences to their government officials. One could argue that therefore this provides a link between participation and voice, as voice infers the principle of democracy that all issues of public concern and needs of citizens will be heard by government officials and they should be acknowledged through a response. However, it is vital to note that not only the "politically active" citizens deserve to be heard by the government, as by virtue of the other people being citizens, but they also ought to have their views taken into consideration by the government (Living and Lunt, 2013). Schlozman *et al.* (2011) highlight that "all factors that foster political participation have roots in socioeconomic circumstances." Schlozman *et al.* (2011:122) are also of the view that through the use of the internet ordinary citizens are able to come together and discuss issues that are of importance to them without having to go through interactions with public officials to facilitate political participation, they are empowered to create a community by deliberating and harnessing trust. Not to be left out of the discussion, Project Isizwe (2017) proposes the following benefits of public participation (without the provision of an adequate description or suggesting a form of measuring of each of the benefits) "Increased level of information in the Community; Better identification of needs for the Community; Improved service delivery; Community empowerment; Better wealth distribution; Greater community solidarity and Greater tolerance of diversity".

It is vital that the citizens have voice, even the marginalised, as public participation is viewed to be an integral part of democracy (Creighton, 2005:14). Beierle and Crayford (2002) concluded that including the public in decision-making, produces decisions that are in line with the values of the public and assists in “resolving conflict, building trust; and educating and informing the public about the environment”. Concurring, Miroshnikova (2014:52) states that people want to be a part of the decisionmaking process and that they are less likely to accept a solution that does not come from them. Livingstone and Lunt (2013) are of the opinion that "the will of the people, (this can be expressed through representation, consent and participation) plays a central role in legitimising a democracy”. Phillips (1991:23) had also published work that concurred with Livingstone and Lunt, where it is stated that consent is viewed as a point of departure for modern theories of democracy.

According to Tufte and Mafelopulos (2009:4) there is no general agreement on the definition of participation in the field of development communication, this is why the term varies depending on the perspective applied. Explaining that some researchers apply a *social movement perspective*, where participation entails mobilising people to combat “unjust hierarchies of knowledge, power and economic distribution”; and a *project-based perspective*, this entails defining participation through the reach and inclusion of appropriate individuals or groups in the design and roll-out of a development project (Tufte and Mafelopulos, 2009:4). Participation is said to produce outcomes “on at least three levels, namely the individual psycho-social level, the life skills level (emphasising the acquirement of competencies) and institutional level or the level of community development”.
The following guiding principles (not exhaustive) have been identified by Tufte and Mafelopulos (2009:10) as some of the most important or fundamental principles in participatory communication.

Dialogue

At the heart of participatory communication lies free and open dialogue (Tufte and Mafelopulos, 2009:10). They go on to suggest a definition of dialogue as "the encounter between men in order to speak their word, they must first reclaim the right and prevent the continuation of this act of exclusion." As dialogue is defined above, an important aspect to highlight from the definition is that which implies feedback, as dialogues require those participating in it to speak and receive feedback. One can argue that the role of the media in participatory spaces is essential, as media has the potential to enable dialogue (Mafelopulos, 2009:13).

Voice

Tufte and Mafelopulos (2009:13) state that it is of utmost importance that it is determined whether media can contribute to giving communities a voice and the extent of the voice by asking the question whether or not the status quo of the media environment is one that stimulates dialogue and processes of empowerment. From this then one can deduce that in order for voice to be prevalent, community members ought to be given the opportunity to engage in media platforms, as dialogue is necessary and media cannot communicate on issues affecting the community without allowing the community to voice out its views. Tufte and Mafelopulos (2009:12) highlight that media access has an important role in participatory communication approaches.

Tacchi (2012) defines voice as "the right to participate in decision making across social, economic, cultural and political spheres and as a crucial human and citizenship right a critical component in our understanding of what constitutes poverty" and operationalised the term as "the right to communication and participation in processes that affect one's life". Tacchi (2012) distinguishes between voice as a value and voice as a process. Highlighting that when we consider voice as more than just a means to an end, rather as one of the ends of development, it becomes clearer regarding the wider context in which voice should take

place and the possibility of voice working and being more effective in development (Tacchi, 2012). However, voice as value refers to the frameworks for categorising human life, as well as resources themselves that value voice. Voice requires mutual registration, by means of listening and we therefore can argue that voice requires recognition (Tacchi, 2012).

Claasson and Nicholson (2013:861) state that the political inequalities of voice are important for democracy, arguing that citizens actions to communicate to government officials in order to generate the necessary pressure for the government to respond and not only to alert the government about needs and preferences. Political voice inequities refer to the fact that political leaders often look to those who are considered as interest groups to gauge opinion on issues. This therefore, results in voice inequality, resulting in a distorted policy making process. Making a comparison between inactive members and interest groups, Claasson and Nicholson (2013:864) state that statements of interest group members are seen to be more extreme due to the group's attraction of "likeminded partisan and ideologies". Another issue highlighted by Claasson and Nicholson (2013:881) is that the active members do not hold the same opinions as members who are not an interest group. In the South African context, one can argue that the issue of political voice inequality is a factor, as for example, many people rely on political parties to address issues of service delivery. Citizens would rely on the political party to deliver the necessary services as stated by the members of the ruling political party. Claasson and Nicholson (2013:864) note that the policies implemented by the government tend to reflect the needs and preferences of those who are an active public, therefore it is important to consider the existence of political voice inadequacies as interest groups are seen as representative of the issues encountered by the broader public in the eyes of the government officials.

Tufte and Mafelopulos (2009:13) also delve into the concern of whether the marginalised are granted voice, time and space to utter their worries

as well as define their problems, hatch solutions and implement these solutions. This element of voice brings with it the implication that voice enables and empowers individuals to take control of their future by participating in discussions and decision-making processes which will have an impact on communities within which individuals live.

Tufte and Mafelopulos (2009:11) are of the view that strengthening and supporting community media can secure the marginalised groups' access to a platform to communicate concerns, participate in public debate and be part of the problem-solving. According to the OneWorld Network (2004:18) the purpose of voice in communication for development (C4D) is to facilitate "broad" participation which could be interpreted as inclusive "participation in democratic processes, governance and cultural diversity". Voice is argued to be a significant foundation of C4D because C4D is centred on allowing the people to express or voice out their concerns and perspectives in development.

Liberating Pedagogy

Tufte and Mafelopulos (2009:11) explain this concept by first providing the description of a catalyst, whom they describe as a person or media (can be internal or external) that facilitates dialogue, such as a television programme or a community radio station, with the aim to not only offer a solution to a predefined question but rather to provide a platform for dialogue through which "collective problem identification and solution would take place"- this is labelled as the liberating pedagogy. Going further, Tufte and Mafelopulos (2009:11) highlight that in order for this phenomenon to materialise, four pillars are essential on which to communicate, love, humility, faith and hope, the resultant being the formation of mutual trust. Once mutual trust is achieved we can then go on to say that it will accomplish action-oriented awareness-raising.

Action-Reflection-Action

According to Tufte and Mafelopulos (2009:11) although participatory communication places a huge emphasis on dialogue, it is also focused heavily on action.

One can see the connection between the Information Communication and Technology for Development (ICT4D) theory and the important role technology can play in enabling public participation. “The vision of using new technology to pursue better lives for humankind has always existed” Tufte and Mafelopulos (2009:9). These authors also highlight that Berlot Bretch’s radio theory where he views radio (which was a new technology at a time) as “a dialogical instrument for change” in many ways the instigator for theory and practice of what is now known as participatory communication, which includes the internet. Carpentier (2007:105) also concurs with Tufte and Mafelopulos stating that Bretch’s radio theory positioned radio as a communication tool. According to Tufte and Mafelopulos (2009:9), two core visions are inherent in Brecht’s work that are still relevant in today’s world, namely that “technologies possess the potential to improve the lives of many people by giving them a voice”, and second, Bretch’s work was the foundation for educational principles that make up “many of today’s participatory communication models – dialogical communication”.

ICT is viewed as an enabler (National Development Plan, 2017:190), as previously stated. It is further detailed in the National Development Plan (2017:190) that ICT’s most valued contribution is to harnessing communication and information flows which in turn result in improvements in productivity, although ICT can contribute to creating opportunities for manufacturing, rendering of services and job creation. According to the NDP (2017:190) “By 2030, ICT will underpin the development of a dynamic and connected information society and a vibrant knowledge economy that is more inclusive and prosperous. A seamless information infrastructure will be universally available and

accessible and will meet the needs of citizens, business and the public sector, providing access to the creation and consumption of a wide range of converged services required for effective economic and social participation – at a cost and quality at least equal to South Africa's main peers and competitors. Within this vision, the underlying ICT infrastructure and institutions will be the core of a widespread digital communications system. This ecosystem of digital networks, services, applications, content and devices, firmly integrated in the economic and social fabric, will:

- connect public administration and the active citizen;
- promote economic growth;
- development and competitiveness;
- drive the creation of decent work;
- underpin nation building and strengthen social cohesion; and
- support local, national and regional integration.

Public services and educational and information products will be accessible to all, and will build on the information, education and entertainment role envisaged for public broadcasting".

Carpentier (2007:105) notes that the development of the internet will see the emergence of a new world of communication and as an enabler of a "structural increase of the level of media participation". One can argue that this has begun manifesting through the trends in the interactions on social media platforms.

OneWorld Network (2004:18) argued that because ICT has improved the ability of communication to reach many, communication can now reach audiences at all levels, for example, people in a marginalised community as well as those who are not marginalised. Going further, the OneWorld Network (2004:18) states that with the introduction of ICT the benefit of people's voices being heard by other audiences and communicators has also been one of the positives of ICT. However, it is vital not to

ignore the fact that there are people ICTs have not reached and who are unable to participate such as women, as the "International Telecommunications Union reports that the proportion of women using the internet is 12% lower than the proportion of men. This gender gap widens to 32.9% in the least developed countries. And even when a woman gets on a phone or is online, she might face additional hostility" (Chakravorti, 2018).

Tacchi (2012) argues that the notion of participation requires close attention in order to understand whether it has the ability to enable the marginalised to meaningfully participate in the decisions that affect them. Participation has also been critiqued for being viewed as top-down and passive, as well as "a means to an end, than an end." Critics have argued that the notion of participation has lost meaning, and can be seen as a buzzword rather than really making an impact in the lives of the marginalised and "can regain something of its transformative power when rights and issues of power are brought back into the frame and issues of agency, citizenship and governance take centre stage." (Tacchi, 2012). According to Tacchi (2012) like participation, the related notion of voice is limited in practice although it is a key concern in development. "It is widely recognised that development needs to be designed by the poor and that poverty, as defined by the poor, reaches beyond income and expenditure" (Tacchi, 2012).

Having interrogated the various theories of participation and public sphere, critiques and proponents, the next theory for review is communication for development.

7.3 Communication for development (C4D)

The Swiss Agency for Development and Cooperation (SDC) (2016) defined Communication for Development (C4D) as "a tool for social and

political change". Going further, C4D is highlighted as having the ability to promote participation and social change through the utilisation of instruments and methods such as interpersonal communication, community media and modern information technologies.

The Development Cooperation warns against viewing C4D as a *nice to have*, but rather as an essential tool that strengthens dialogue with the development project beneficiaries, partners and the authorities with the aim to improve the local ownership of development projects and thereby generate what is viewed as a sustainable impact. C4D can be used in development projects to disseminate information, influence, persuade, raise awareness, motivate, mobilise, educate, entertain, empower, recognise, debate and change. C4D is said to be better viewed as an approach with characteristics and not in isolation, as an activity (Swiss Agency for Development and Cooperation (SDC), 2016:12).

C4D is viewed as an approach with the following characteristics:

C4D is based on dialogue - It is argued to be "the most appropriate word to summarise the concept" of C4D, as C4D endeavours to establish an exchange with the participants at the same level. Important to highlight is that C4D is tasked with enabling development beneficiaries to take charge of their development by creating spaces (virtual/physical) that are convenient for this outcome.

C4D supports social change - C4D aims to enable development with the aim to positively drive social change.

C4D is sensitive to local culture - To maximise the impact of C4D it is viewed as necessary to involve the local languages and communication mediums.

OneWorld Network (2004:6) explains the C4D concept as one which is focused around two components of the Swiss Agency for Development and Cooperation's (SDC) ICT4D conceptual framework. The first concept is that of Voice, this concept is largely expanded on in this paper and will form the basis for the methodological framework and many elements of this research and its conclusions, the second concept is that of network and communication. As with other theories of development

communication, the C4D theory is also concerned with the issue of access and thereby also includes the concept (OneWorld Network, 2004:18).

C4D is guided by the following principles (OneWorld Network, 2004:18).

- "Participatory in all aspects (both content production and dissemination);
- Communication originates from the subjects of the communication itself;
- Communication is not at its inception mediated, translated or editorialised by external parties. Other parties only serve the redistribution purpose;
- Communication is bottom-up and inclusive".

The main aim of C4D is that people communicate for themselves about themselves and thereby giving them voice (OneWorld Network, 2004:18). It is further highlighted that the C4D concept is about the people's capacity to tap into the communication tools which are at their reach with the aim of making themselves seen, extinguishing the aspect of isolation and taking pride in who they are.

OneWorld Network (2004:14) proposes that, C4D has an impact on voice due to its ability to terminate isolation, reach (policymakers, media and other stakeholders), enable cultural expression and enable solidarity.

8. RESEARCH METHODOLOGY

The research methodology detailed in the section below was used to answer the research question.

8.1 Research paradigm

Shannon-Baker (2016:319) argues that recently scholars have noted the need to incorporate clear discussion regarding their paradigm in empirical research, highlighting that the conceptualisation thereof ultimately affects the use of the research and that paradigms guide the researcher and that the researcher can use a paradigm to ground their research.

This research will follow a transformative-emancipation paradigm. Shannon-Baker (2016:326) states that this paradigm is characterised by its use in research related to "disabilities and deafness communities, HIV/AIDS, violence prevention and participation in governing structures". Further stating that the transformative-emancipation paradigm necessitates paying attention to power privilege and voice in the entire research process (Shannon-Baker, 2016:326). Shannon-Baker (2016:326) also highlights that many studies utilising this paradigm focus on inequalities and voice, as well as recommending the utilisation of the triangulation rationale for using mixed methods research guided by the paradigm. Concurring with Shannon-Baker, Jackson, Pukys, Castro, Hermosura, Mendez, Vohra-Gupta, Padilla and Morales (2018:111) state that the "transformative paradigm is suitable for research that incorporates a social justice orientation and advocacy for marginalised community's voices".

Another recommendation by Shannon-Baker (2016:327) is that researchers who adopt this paradigm ought to have robust appreciation of the community, its history and be well connected or integrated within the community. The researcher is a resident of the Soweto community,

and therefore has a good understanding of the community and the community media, such as Jozi fm and Soweto TV.

8.2 Research design

Shannon-Baker (2016:318) states that "overall, within the transformative-emancipatory perspective, it is important to frame all decisions, data collection, analysis, and reporting within the social and historical contexts of the community."

This research is based on case study research, the researcher sought to report on the extent to which availability of free wifi in a community enables voice for that community, therefore the researcher has chosen the City of Johannesburg's Soweto free wifi roll-out as the particular case to be studied. It is important to reiterate that the researcher chose the City of Johannesburg as the researcher is based in Soweto and as a resident of Soweto there is an interest to learn about the impact of free wifi in the community, if any. This therefore clarifies why Project Isizwe (as a flagship) is not the chosen case for the study.

In light of the above the researcher conducted the research as detailed in the sections below.

8. 3 Research method

Data collection methods

The researcher has opted for a mixed methods research study, with the quantitative (questionnaire) and qualitative (observation) as the data collection methods. As previously stated, Shannon-Baker (2016:326) has encouraged researchers guided by the transformative-emancipation paradigm to use a mixed method approach where necessary as it allows for triangulation. According to Potter (2012:161) mixed methods research can be defined as "the collection or analysis of both quantitative

and qualitative data in a single study in which the data are collected concurrently or sequentially, are given priority, and involve the integration of the data at one or more stages in the research process." Using a structured survey in Appendix A (in the form of a checklist questionnaire) and field notes (Appendix B) as the main research instruments.

According to Neuman (2014:48) surveys are used to learn about the participants' opinions and/or beliefs. The reason the researcher has chosen to use a survey instead of interviews is because the research was conducted in a public setting, the researcher was better positioned to ask wifi users to take 30 minutes of their time to complete the survey rather than 60 minutes to discuss the interview questions. Also it is important to note that most of the free wifi zones do not allow for or offer places to sit, there are no benches, if any there are very few and often there is little shade. It was therefore more conducive to have a questionnaire that could be easily completed, without too much of an inconvenience for the participants.

Kothari (2004:100) notes that questionnaires, amongst other things, can free the researcher from the bias of the interviewer. Questionnaires can enable the researcher to test the research instrument in the form of a pilot study, due to the ability of the researcher to identify weaknesses and potential areas of improvement to the survey technique. In the process of administering the questionnaire, the researcher found Kothari's view to be a true reflection of how the research process unfolds, as the researcher had to slightly adjust the flow of the questions after administering the first set of questionnaires, due to the fact that most of the respondents had not completed one of the follow-up questions.

The process the researcher has followed is that of a triangular method. The researcher had considered noted the possibility of not having enough respondents or wifi users who would be willing to complete the

questionnaires. This was concerning to the researcher due to the purpose for which people go to the wifi hotspots to access and then proceed to do whatever else they had planned to do. Due to this concern the researcher also decided to conduct field work in the form of observation while at the wifi hotspots to strengthen the data collected through the questionnaires. The data collected through observation was used to triangulate the data collected through the survey (Wanger, Kawulich and Garner, 2012:152).

Another important factor of observation is that the researcher was able to understand what is important to the participants. According to Neuman (2006:383) a field researcher observes usual events and the everyday activities that happen in a natural setting and this is done in addition to any occurrences that are unusual. Neunman (2006:383) argues that during observation the researcher:

- is directly involved with those who are being studied and experiences the daily processes of life in that field setting;
- the researcher is able to understand the insider's point of view, still maintaining the distance of an outsider and continuing to carry the analytical perspective;
- sees events holistically as well as in their individual social contexts; is empathetic and does not only record what is perceived as "cold objective facts"; and
- pays attention to both explicit and tacit aspects of culture; notices ongoing social culture without imposing on their own "outside point of view", amongst other traits of an observer.

I opted to take on the role of a participant observer, prior to asking the users to answer the questionnaire, I had to explain the reasons for collecting data and the people at the wifi hotspots were aware of my presence at the wifi hotspot and the reason why I was there.

Below is an example of the observation guide I prepared to aid in the observation process:

The type of the observation guide used in the research is the **event sampling guide**. According to Kawulich (2012:155) an event sampling guide aids in capturing certain events in a social setting. This is vital, as I was pursuing data that could help in understanding what happens at the wifi hotspots. Learning whether there are vital voice-enabling conversations that take place at wifi hotspots amongst citizens, how are the community members using the free wifi amongst other things. I have also included a field to account for the number of females and people with obvious disabilities to the field notes. These fields assisted me in understanding if the wifi infrastructure is equally accessible to females and males and similarly it was vital to also understand how the disabled community members access the wifi. The numbers recorded on the field notes only account for the wifi users who were eligible to participate in the study in terms of age, those who appeared to be 18 and above, as per the ethics clearance approval for the project. During the time spent at the wifi zones I took notes while wifi users were completing the questionnaire. I took time to write direct observation notes away from the field, relying on the jotted field notes.

Description of fields

Time	**User/participant description**	**Action carried out at wifizone**
The time slot/duration of observation(as per schedule created below)	• The participant's gender • Estimated age • What the participant wore • Other features worth noting	• The participants device for accessing the internet • What the participant did while at the wifi zone • Engagements with other users • How much time was spent at the wifi zone

Example of field notes

Date: 08/06/2018 Wifi zone: Regina Mundi Church

Activity: Morning wifi users

The number of females identified at the hotspot: 2

People with obvious disabilities: 0

Weather: 22 degrees

Time	**User description**	**Action carried out at wifizone**
09:00 am	Arrival of two males (Approximate Age of 19-21)	Using cellphones to access data. Not talking to each other, both looking at phones and performing some activities.
09:15	Arrival of school pupils in school uniform	The pupils sit down and take out their cellphones and lunch boxes and share sandwiches.

Other observations:

1. There are school pupils at the wifi hotspot during school hours.

The fields notes used in the above example enabled the researcher to make assumptions about the demographics of the wifi users, the time spent at the wifi zone, the interactions with other users (if any) and the actions carried out. The reason why certain features are noted in field notes is because these are the features that can help the reader understand the age, returning users and justify the amount of time spent at the wifi zone, for example a scholar spending a short time at the wifi zone on their way to school in the morning. In the example provided above it is noted that there are scholars at the wifi zones during school hours instead of being at school. The reason the “Other observations” section has been added on the observation is to aid the reader to have a clear picture of the occurrences at the wifi zones.

Sites for collecting data

Initially I had intended to first map out the 400 City of Johannesburg free wifi hotspots in Soweto, followed by a random selection of the wifi hotspots in order to further strengthen the validity and reliability of the data collected. However, at the proposal stage of the research study I had arranged an interview with the City of Johannesburg's wifi provider to understand where the active hotspots are amongst other background questions. Unfortunately, the provider was not forthcoming with the information and alluded that some of the information would jeopardise the competitive advantage of the organisation if disclosed. The information on the city's wifi app was inaccurate, as it is showing inactive wifi hotspots as active, the researcher could not rely solely on it. Appendix C provides the list of interview question posed to the BrightWave representative for the purpose of further understating the wifi provision process. Appendix C also provides the follow-up questions posed to the organisation in order to best plan the data collection process, for example questions such as what time is the peak hour for wifi usage put to the service provider? However the provider was unable to offer this information as it could compromise some of the organisation's confidential information.

Failing to obtain BrightWave's Soweto wifi roll-out reports meant that I could not identify what could be considered more suitable locations to administer the survey. A suitable location could have been due to factors such as the number of people who visit the wifi zones. The best times (for example lunchtime) to be at the wifi zone is one of the factors that could have aided me to enhance the data collection by visiting the wifi spot during peak usage times as there would be more users to complete the research questionnaire. The wifi hotspots were the field sites for this research study, a field site is defined by Neuman (2006:385) as "context with which events or activities occur, a socially defined territory with shifting boundaries."

Without sufficient credible information guiding the selection process of the wifi hotspots, the researcher used her own discretion in choosing the wifi zones to use as the main places to collect the data. The researcher chose free wifi zones where the data would be collected based on factors such the prospective users' intention for being at free wifi zone, for an example the spaces where people are most likely to be at leisure, rather than a library or clinic where people might not appreciate being interrupted. The researcher also considered the degree to which she researcher felt safe and comfortable to spend time at the free wifi zone, with the alarming gender based violence, the researcher was not comfortable in some of the unfamiliar areas of the township. As per the findings detailed in this research crime is one of the major challenges the community is grappling with. During the proposal stage the researcher had identified three of the 400 free wifi zones in Soweto where the questionnaire was to be administered, namely the Thokoza Park, Hector Peterson Museum and Tladi Park. However, during the process of starting to collect data I had to change the wifi hotspots selected due the fact that there were safety concerns at the wifi hotspots.

The research was conducted at Ibhongo Primary School, Thokoza Park, Regina Mundi and Protea Point Shopping complex.

The researcher had intended to increase the number of wifi hotspots selected, however when interacting with community members it was revealed to the researcher that some of the wifi hotspots had become inactive, such as all the Rea Vaya Bus hotspots were no longer functional. It was also brought to the attention of the researcher that there had been gunpoint robberies at some of the wifi hotspots such as the wifi hotspots that was at Ibhongo primary school. It was argued by community members that robbers had come to the wifi hotspots and took all the users' devices such as cellphones, laptops and tablets. Following the incident the residents claim that the wifi hotspot became inactive. However it is unclear to the researcher whether the two events are related or purely coincidental. Therefore the researcher had to remove the

Ibhongo school from the identified research wifi zones sample, after the first attempt at collecting data at the wifi zone.

The researcher had a period of two months to collect data, mainly on weekends as the researcher is employed on a fulltime basis. The researcher followed a structured process when conducting the research. The researcher began collecting data on 8 May 2018 to 8 July 2018. A total number of 90 hours were spent by the researcher collecting data. The researcher mainly collected the data on weekends, however, during the first week of collecting data, the researcher also collected data during the week, thus enabling the researcher to gain an understating of what takes place at the wifi hotspots during the week, the researcher was enabled to do a comparison of what day and time most residents visit the various wifi hotspots.

The table below provides details on how the researcher structured the research data collection process (Table 3: Data collection time plan (Time distribution) and Table 4: Questionnaire administration).

Table 4: Data collection time plan (Time distribution)

Mornings	Noon	Afternoon
09:00 – 12:00	12:00 – 18:00	13:00 – 17:00
8 days	6 days	8 days
24 hours	42 hours	24 hours
Total of 22 Days **90 Hours**		

Table 5: Questionnaire administration

Day	Date	Wifi hospot	Day of the week	Time/ period	People ASKED to complete questionnaire	People who AGREED to complete the questionnaire	People who ALREADY completed questionnaire
1	8 May	Protea Point	Tuesday	13:00 – 17:00	50	27	Not Applicable (first data collection)
2	9 May	Protea Point	Wednesday	9:00 – 12:00	35	10	5

Day	Date	Wifi hospot	Day of the week	Time/ period	People ASKED to complete questionnaire	People who AGREED to complete the questionnaire	People who ALREADY completed questionnaire
3	10 May	Ibhongo School	Thursday	12:00 – 12:15	0	0	Not Applicable (wifi zone disconnected)
3	10 May	Regina Mundi	Thursday	12:30 – 18:00	44	20	Not Applicable (first data collection)
4	11 May	Regina Mundi	Friday	09:00 – 12:00	46	19	8
5	12 May	Thokoza Park	Saturday	12:00 – 18:00	77	47	Not Applicable (first data collection)
6	13 May	Thokoza Park	Sunday	13:00 – 17:00	30	11	4
7	19 May	Protea Point	Saturday	12:00 – 18:00	21	15	0
8	20 May	Protea Point	Sunday	12:00 – 18:00	30	11	3

Day	Date	Wifi hospot	Day of the week	Time/ period	People ASKED to complete questionnaire	People who AGREED to complete the questionnaire	People who ALREADY completed questionnaire
9	26 May	Thokoza Park	Saturday	09:00 – 12:00	21	10	5
10	27 May	Thokoza Park	Sunday	12:00 – 18:00	32	10	10
11	2 June	Regina Mundi	Saturday	09:00 – 12:00	20	15	5
12	3 June	Regina Mundi	Sunday	13:00 – 17:00	23	5	4
13	9 Jun e	Protea Point	Saturday	09:00 – 12:00	25	3	7
14	10 June	Protea Point	Sunday	13:00 – 17:00	20	4	9
15	16 June	Regina Mundi	Saturday	12:00 – 18:00	15	3	8
16	17 June	Regina Mundi	Sunday	13:00 – 17:00	18	7	10

Day	Date	Wifi hospot	Day of the week	Time/ period	People ASKED to complete questionnaire	People who AGREED to complete the questionnaire	People who ALREADY completed questionnaire
17	23 June	Thokoza Park	Saturday	09:00 – 12:00	20	4	10
18	24 June	Thokoza Park	Sunday	09:00 – 12:00	25	13	12
19	30 June	Regina Mundi	Saturday	13:00 – 17:00	33	14	17
20	1 July	Regina Mundi	Sunday	13:00 – 17:00	20	5	15
21	7 July	Thokoza Park	Saturday	13:00 – 17:00	30	3	27
22	8 July	Thokoza Park	Sunday	09:00 – 12:00	20	2	10

Total of 454 people asked to complete the survey

(Total people asked to complete 623 – 169 already completed questionnaires=Total number of people approached)

Day	Date	Wifi hospot	Day of the week	Time/ period	People ASKED to complete questionnaire	People who AGREED to complete the questionnaire	People who ALREADY completed questionnaire
Total of 258 UNIQUE responses							

8.4 **Sampling strategy**

In this study, I utilised non-probability sampling as the sampling technique. This means that I used my subjective judgment to select the sample rather that a random sample selection (Neuman, 2006).

In order for me to be able to identify wifi users, I needed to be at the free wifi zones where the users are located. I spent time looking out for those who would come to the wifi zones with their electronic gadgets and then continued to engage these users requesting the users to complete the survey.

The research was conducted at three of the 400 free wifi zones in Soweto, as previously mentioned. The positive aspect of the free wifi zones is that the users had to be at locations in order to access the wifi and thereby aiding me to identify possible participants.

Due to the nature of the research and the data sought, convenience sampling (where the researcher selects the respondents because they are conveniently accessible (Neuman, 2006:221)) was utilised. In order to collect data I relied on the public wifi users who were willing and available to take time out and complete the questionnaire. As previously indicated above, 258 wifi users of the 454 wifi users were willing to complete the questionnaire during the period of 8 May to 8 July 2018. It is vital to note that there were more users at the wifi hotspots, many of which were underage. These users have not been accounted for in this research study, as this group was not relevant and not part of the sample group sought by the researcher. However, when documenting the field notes I included a comprehensive account of most of the people who were 1observed, this enabled me to paint a clear picture of the events that took place at the wifi zones during the observation period.

I endeavoured to get a cross section sample, as I first solicited to obtain input from wifi users with special needs, such as the obvious wheelchair

users. Unfortunately there were no wifi users with obvious disabilities at the wifi hotspots. As an alternative, I endeavoured to approach women who were present at the free wifi zones. The obvious observation was that there were also fewer women at the wifi hotspots than men, more details on this is elaborated on in sections to follow.

Table 6: Sample of known City wifi hotspots in Soweto and status

Wifi hotspot	Wifi availability Status	
	Active	Inactive
Ibhongo Primary school		X
Kliptown Museum		X
Mandela House	X	
Orlando Police Station	X	
Rea Vaya bus stop Hector Pieterson Museum		X
Rea Vaya bus stop Orlando Stadium		X
Regina Mundi church	X	
Soweto Hotel on Freedom Square	X	
Thokoza Park Station		X

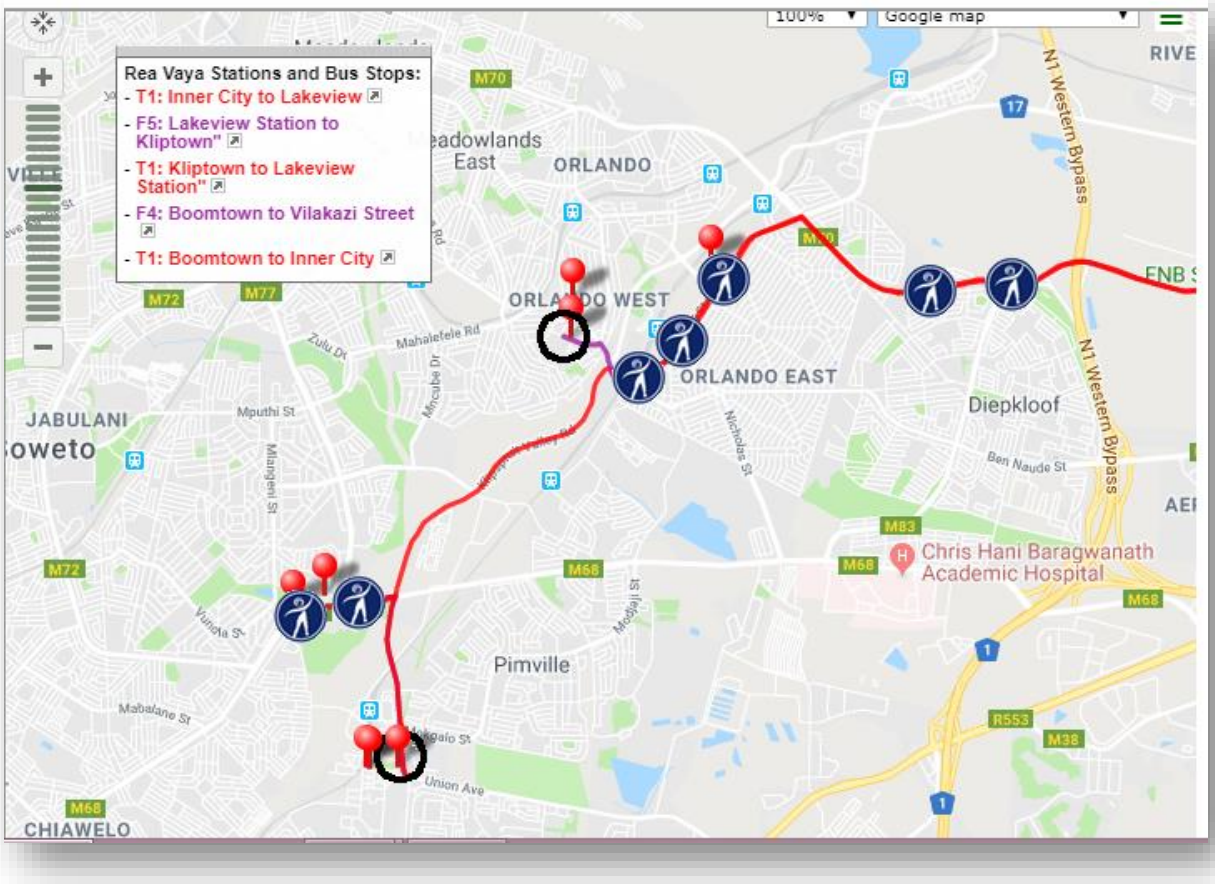


Figure 6: Rea Vaya Bus Soweto Route (Reavaya, 2018)

Figure 6 shows the Rea Vaya Bus route to the city (Johannesburg) from the township. The city as indicated in section 1.2 had envisaged that users would be able to connect at the bus stops. Only four of these major bus stop had access to free wifi connection at the time of data collection.

8.5 Data analysis

The researcher has utilised a combination of data analysis methods as there were two data sets, field notes and questionnaires. The field notes were coded according to a thematic analysis and the survey was coded using Microsoft excel with the exclusion of the open ended questions which produced qualitative data and were therefore also coded using a data coding software (ATLAS.ti).

8.5.1 Analysing field notes using a thematic analysis

The field notes were coded using ATLAS.ti following thematic analysis, the codes produced through the coding process ultimately enabled the researcher to see how the respondent's feedback formed patterns which were then interpreted. When using a thematic analysis a researcher identifies and analyses themes. This enables the researcher to identify patterns that form when analysing the data (Kawulich and Holland, 2012:231).

According to Kawulich and Holland (2012:231) "**a good code has five elements**: a label or name; a definition of what the code concerns; a description of how to know when the coded theme occurs; a description of qualifications or exclusions to the identification of that code; and a listing of examples, both positive and negative, to avoid confusion of codes". Below are the codes utilised to develop themes:

Label	**Definition**	**Theme identification**	**Inclusion or exclusion of code**	**Examples (Positive(PE)/Negative(NE))**
Access	When users share a device versus own device	*Digital divide*	Included if users are observed sharing of device to access the internet.	- PE: User using own device to access the internet - NE: Users share digital device
	The users' ability to use the internet effectively	*Environment and accessibility*	A code is included if the users are able to successfully connect the internet using the free wifi.	- PE: Wifi user able to connect to the internet without help - NE: Wifi user needs assistance connecting to the internet
	Wifi offline/online	*Connectivity*	Code assigned based on wifi	- PE: Wifi connection connected - NE: Wifi connection disconnected

Label	Definition	Theme identification	Inclusion or exclusion of code	Examples (Positive(PE)/Negative(NE))
			connection availability.	
	Refers to the safety of users while accessing the wifi	*Safety of wifi users*	Code assigned if users indicated that crime was a concern or crime was experienced.	- PE: User feels safe - NE: Users were exposed to or fear crime
Access	Relates to access to the facilities by the disabled	*Disability Friendly*	Included where possible exclusion or inclusion of users was noted	- PE: Visible effort to make the wifi inclusive for users with special needs - NE: No visible signs to include persons with disabilities
	The average time spent by users during each session	*Time spent at wifi zone*	Time spent by users observed by the researcher to indicate the length of the wifi access sessions	- PE and NE: Users seen utilising devices to access the wifi, average time spent estimation

Label	Definition	Theme identification	Inclusion or exclusion of code	Examples (Positive(PE)/Negative(NE))
Access	The stability and reliability of the wifi network (ICT)	*Wifi reliability and speed*	The network coverage as experienced by users during their time spent at the wifi zones	- PE: Users are satisfied with the wifi service and speed - NE: Users are displeased with the wifi access
	Relates to the ability of women to access technology at the same level and ratio as men	*Accessibility to females*	Included where possible exclusion or inclusion was noted	- PE: Users indicate comfort at the wifi zone - NE: Users indicate signs of discomfort or isolate themselves from other users
	Compromising the health of the users when accessing the internet	*Health*	Users exposed to possible health risks while accessing the internet	- PE: Users smoking far from other users - NE: Users exposing other users to second-hand smoke

Label	Definition	Theme identification	Inclusion or exclusion of code	Examples (Positive(PE)/Negative(NE))
	Children under the age of 18 accessing the wifi without adult supervision	*Unsupervised access to internet content*	Users access the internet without supervision from adults	- PE: Young wifi users utilising the internet with adult supervision - NE: Young wifi users utilising the internet without adult supervision
Usage	Communicating with friends and engaging with the other people for various reasons	*Connecting with family and friends*	A code is assigned if the users who use the internet to engage with the other people for social reasons.	- PE: Using the internet to communicate with friends and family in other countries - NE: Not knowing how to access commination platform and social media platforms
	Using the free wifi in order to access sports updates, watch sports, the latest music, download	*Entertainment*	These internet engagements involve users viewing soccer games, scores, movies, reading	- PE: Users viewing soccer games, game scores, movies, reading up on the latest celebrity news amongst other things.

Label	Definition	Theme identification	Inclusion or exclusion of code	Examples (Positive(PE)/Negative(NE))
	songs and music albums as well as view and down music videos.		up on the latest celebrity news amongst other things	- NE: User posting offensive content and sharing/endorsing offensive content online
Usage	Using the internet with the aim to improve one's current financial situation	*Economical usage*	A code is assigned if usage relates to education, jobs and ways to improve earnings	- PE: Using the internet to look for work opportunities, further education studies and improve earnings - NE: Using the internet for entertainment by those who are unemployed
	Information gateways to gain access to solicited information and unfiltered content due to	*Information gateways*	The respondents listed these sites as the sources for local and international current affairs	- PE: Using free wifi to access search engines, such as searching on a particular topic on google. - NE: Access news sites, where certain news content is already

Label	Definition	Theme identification	Inclusion or exclusion of code	Examples (Positive(PE)/Negative(NE))
	specific site's settings		These are the information search engines utilised by the respondents in order to gain access to more information which interests them.	predetermined by the editors of the new sites
Usage	Accessing the internet in order to keep in contact and updated with friends and family on social media sites.	*Social media*	The code is included if users use social media purely for pleasure and relaxation purposes.	- PE: Viewing content, commenting, posting and other accessing other forms of content on their social media sites. - NE: Using social media for business and marketing purposes (noted under economic usage)

Label	Definition	Theme identification	Inclusion or exclusion of code	Examples (Positive(PE)/Negative(NE))
Usage	Using the internet to access sites where one can look for lifestyle related information, such as religion or weight loss guides	*Lifestyle*	These are sites the respondents have listed for personal improvement or spiritual purposes, not for economic usage.	- PE: Looking up cooking recipes to make dinner - NE: looking up recipes to bake for a church bake sale
	Using the internet to conduct research or for e-learning purposes	*Education*	Respondents indicated that they use the internet to visit University websites and other educational sites to better themselves.	- PE: Using the internet to do homework - NE: Using the internet to bully or violate the rights of fellow students

Label	Definition	Theme identification	Inclusion or exclusion of code	Examples (Positive(PE)/Negative(NE))
	Questions the type of content available to and accessed by users under the age of 18	*Age appropriate content*	Young users (below the age of 18) accessing content that is not suitable for the group such as pornographic content	- PE: Users accessing content for school - NE: Users accessing unsuitable content for the age group
Communication with other members of the community and the media	Users meeting at the hotspot on their way to somewhere else or to meet others along the journey	*Wifi hotspot as a meeting space*	When users are using the wifi zone as a meeting space	- PE: People waiting friends and family at the wifi zone while accessing the wifi - NE: People waiting at the wifi zone and not utilising the free wifi
	Users spending time at the wifi zone, talking to each other while	*Users' interact*	Coded when users meet other users at wifi zone and engage with them	- PE: Users talking about the an upcoming political party rally and their expectations regarding the discourse

Label	Definition	Theme identification	Inclusion or exclusion of code	Examples (Positive(PE)/Negative(NE))
	accessing the internet		while accessing the internet	- NE: Users talking about an upcoming birthday party
	Users utilising the wifi to access media content and connect with the media	*Media*	Users accessing current affairs content, online media comments and contacting the media	- PE: Calling the media using Voice Over Internet Protocol (VIOP) - NE: Using the media platform for hate speech
	Engaging with other community members on community related issues	*Political*	Using the internet to tackle prevailing issues that affect the quality of life of the community such as crime	- PE: Calling community meetings to discuss lack of water - NE: Usage start unrests in the community

8.5.2 Analysing survey results using Microsoft Excel

Leahy (2008) provides guidance on analysing data from a survey using Excel through a five step process. The researcher followed the five steps when analysing the data collected through surveys, namely “creating an Excel database, coding the data, entering the data into the Excel spreadsheet, cleaning and analysing the data” (Leahy,2008).

8.6 Limitations of the study

The researcher has identified the following limitations:

8.6.1 limitations of observation

Male and female researchers have been argued to gain access to different information, due to the fact that they have access to different people, settings, and bodies of knowledge. Participant observation is conducted by a biased human serving as the data collection instrument; it is vital for the researcher to understand how his/her gender, sexuality, ethnicity, class, and theoretical approach may affect observation, analysis, and interpretation, (DeWalt and DeWalt, 2002).

The researcher made a conscious effort to look at the events unfolding at the wifi zone with a fresh outlook. For example, not viewing every male at the wifi zone as an abuser or inconvenience to female users.

8.6.2 limitations of a survey

Possible disturbances, as the questionnaire was administered in a public setting. As the data was collected in a public setting, the weather had an effect on the number of people who were at the wifi hotspots, on cold days most of the users were in a rush, they had no desire to be at the wifi hotspots longer than they needed to be. This had an impact on the number of respondents. The research attempted to garner more

responses on a warmer day to compensate for days where users had no desire to be outdoors for too long.

Not all respondents sought clarity where they didn't understand the question. As English is not the first language for all respondents, the researcher had committed to making the questionnaire simple and also took time to clarify the questions where required by respondents. There is a possibility remains that not all respondents sought clarity evenwhere it was desirable.

The response rate per question. In certain questions the response rate was lower than the 50% of the total responses received for the survey, therefore had it not been for the triangulation process the researcher would have battled to draw plausible conclusions.

8.6.3 Limitations of case studies

The study is a case study (a single case) of the free wifi project which limits the researcher's ability to generalise research findings. Authors such as Yin (1993), Simons (2009) and Stake (2005) illuminate the possible negatives in conducting case study research as well as generalising findings from case study research in one study. Citing the fact that on many occasions case study researchers have been "sloppy and allowed equivocal evidence or biased views to influence the direction of findings and conclusions" (Yin, 1993).

The researcher aimed to be very detailed in the account of how the research process unfolded, in order to provide the readers with a clear understanding of how the researcher came to the conclusions and findings.

8.6.4 Time constraints

As previously stated the researcher had a period of only two months to collect the data. Although the research collected the data at the selected wifi zones until a saturation point, the researcher could not collect any more data as the wifi users began to identify the research and immediately declared that they have completed the questionnaire. It is possible that some of the users had not participated in the research. However given the cold winter weather closer to the end of the data collection process, the researcher was pleased with the amount of data gathered, as fewer users were visiting the wifi zones.

8.6.5 Difficulties around verification of responses

There were inconsistencies in the manner in which the subjects responded to the research questions. For an example in certain instances respondents who responded to the initial question, provided a response to the follow-up question based on the initial question.

8.7 Ethical considerations

The following ethical considerations were noted and mitigated by the researcher in order to ensure that the research met the ethical standards set by the University and those relevant research bodies the researcher ought to have complied with:
Kawulich (2005) argues that it is vital for a researcher to advise the community of the purpose for observing activities, namely to document these activities. For this purpose the researcher informed the community members with whom interactions were had of the research goals and objectives and how the researcher intended to use the information documented. However it is also argued by Kawulich (2012:151) that when a researcher is conducting observation in a public setting and observing public activities, there is no need for any formal permission.

According to Kawulich (2005) the researcher has another ethical responsibility to keep the identity of the participants anonymous in the final report and field notes in order to prevent their identification, this is in case the field notes are summoned for inspection. Further noting that people must be described in ways that community members will not be able to identify the participants (Kawulich, 2005). The researcher has not disclosed any information that may allude to the identities of the individuals who were observed and those who are respondents in the research through the completion of the research questionnaire.

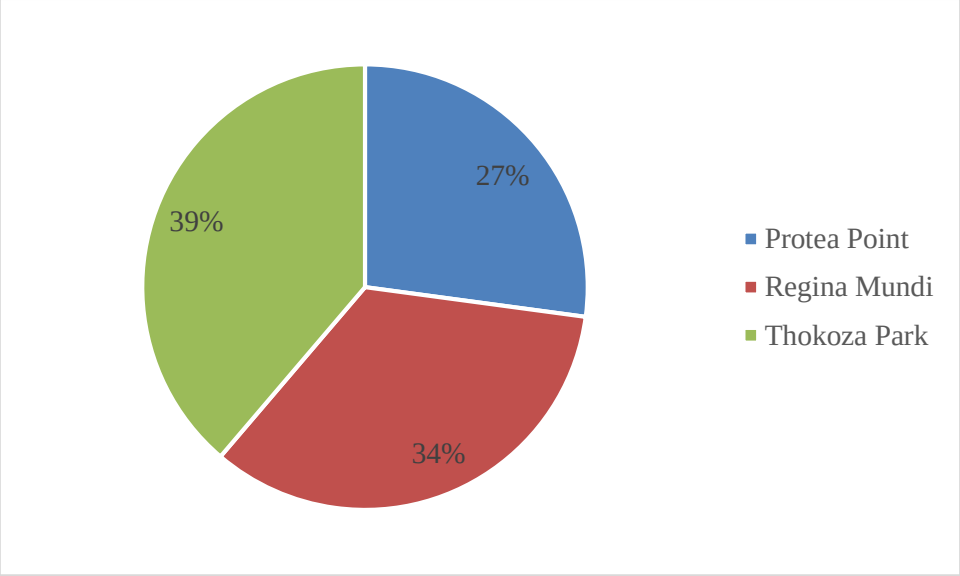
9. RESULTS

The following section provides details on the responses garnered for each question and the response rate.

9.1 Questionnaire results

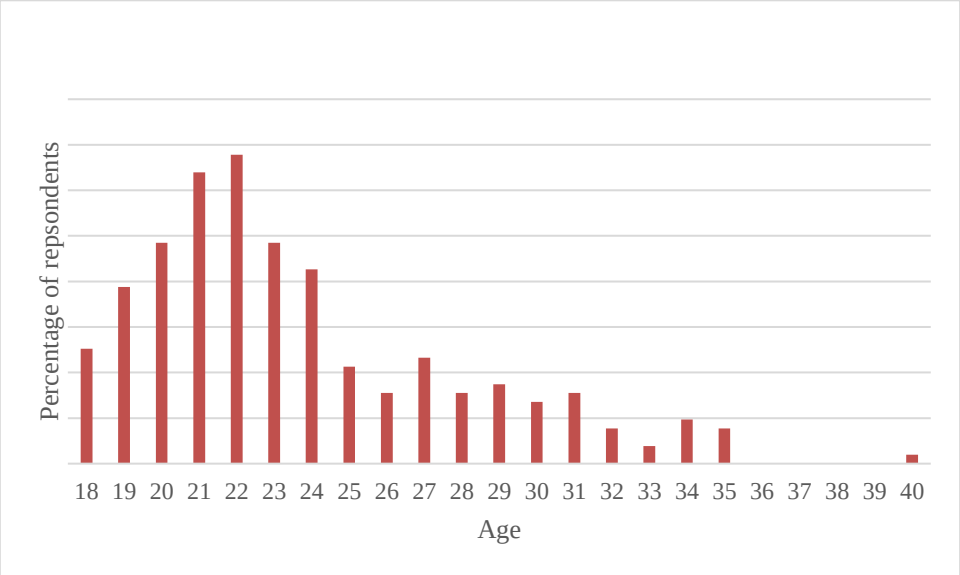
Background questions (Questions 1- 8)

Place where the questionnaire was administered



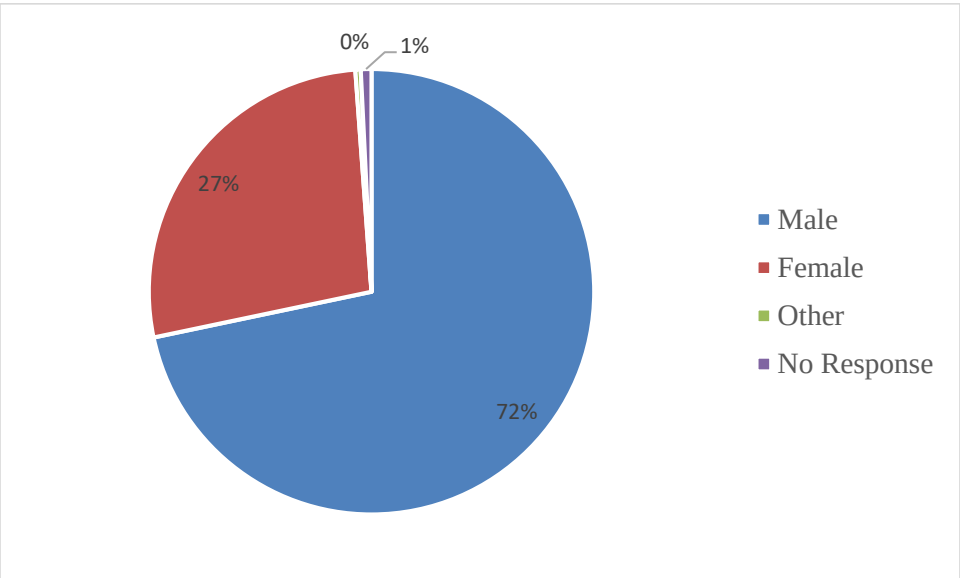
The chart above shows where the largest number of survey responses were captured. This is indicative of where the community members are frequently accessing the wifi. This question garnered a 100% response rate. It is visible that a large number of the responses were collected at Thokoza Park. The responses received at the wifi zones are relatively evenly balanced.

Age



This question garnered a 98% response rate. The average age of a typical municipal wifi user according the data recorded is between ages 20 and 24 years (20 years at 10%, 21 years at 13%, 22 years at 14%, 23 years at 10% and 24 years at 9%). With the age group of users surveyed spanning from the ages of 18 to 40 years. This suggests that young adults are the ones who mainly make use of the service, with the elderly not accessing the wifi service.

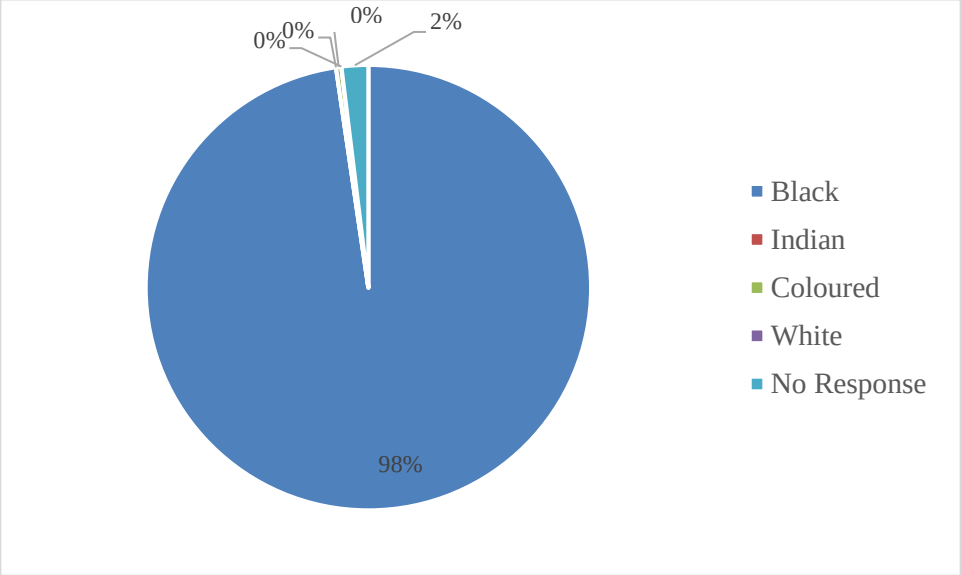
Gender



The chart above shows the difference between the number of females and males who were surveyed. This is reflective of the gender ratio of the wifi

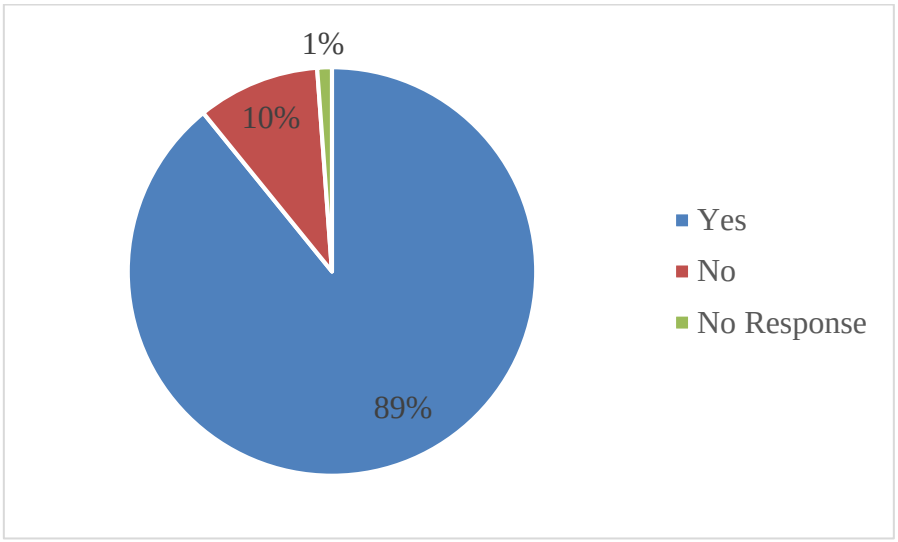
users accessing the internet noted by the researcher during the data collection period. Only one person responded as "other". There is an imbalance between the number of females and males accessing the wifi service. Males who accessed the wifi service during the survey period accounted for 45% more users when compared to the females. According to the information garnered through the survey 99% respondents completed the question.

Race



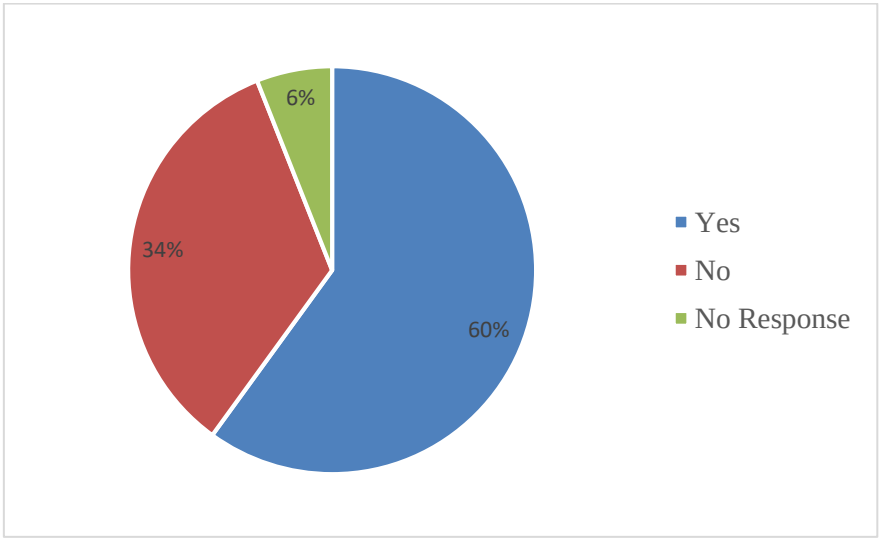
The majority of the respondents have indicated their race as Black. The question was completed by 98% of the respondents. As per the previous question, only 1 person responded as Coloured. The data gathered is representative of the Soweto community which is predominantly Black.

1. Are you a resident of Soweto?



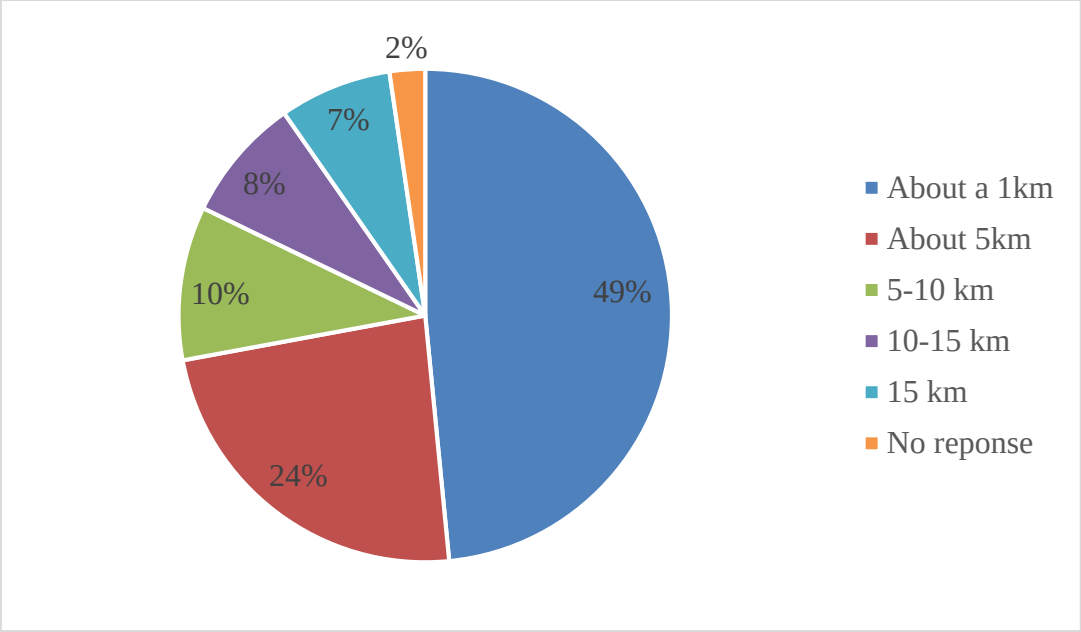
This question garnered a 99% response rate. The chart above illustrates that 89% of the survey respondents are indeed Soweto residents. The sample can be accepted as representative of the views of the Soweto residents as they make up a large majority of the respondents. A small percentage (10%) of the users are not Soweto residents which suggests that they were either visiting or merely working in Soweto. The views noted in the questions to follow can therefore be considered to be representative of Soweto residents.

2. Is this the nearest wifi connection zone to where you stay?



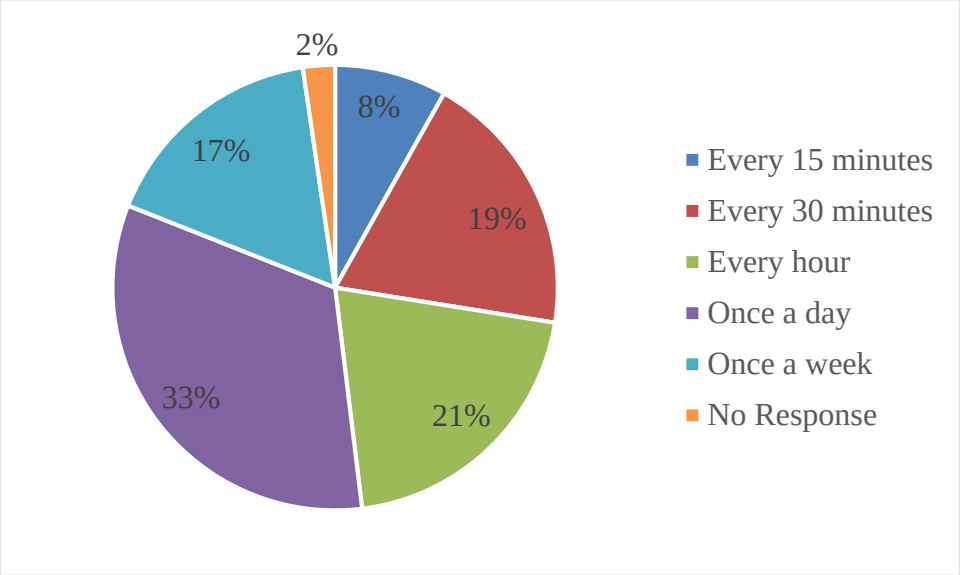
About 34% of the respondents indicated that this is not the nearest wifi zone in to their homes. This indicates that the respondents preferred the particular wifi zone for whatever reason known to them. It is also possible that nearest wifi zone nearest to them had become inactive. With 60% of users having indicated that this is the nearest wifi to where they stay, this shows that the wifi zones are within reach.

3. How far is it from your home?



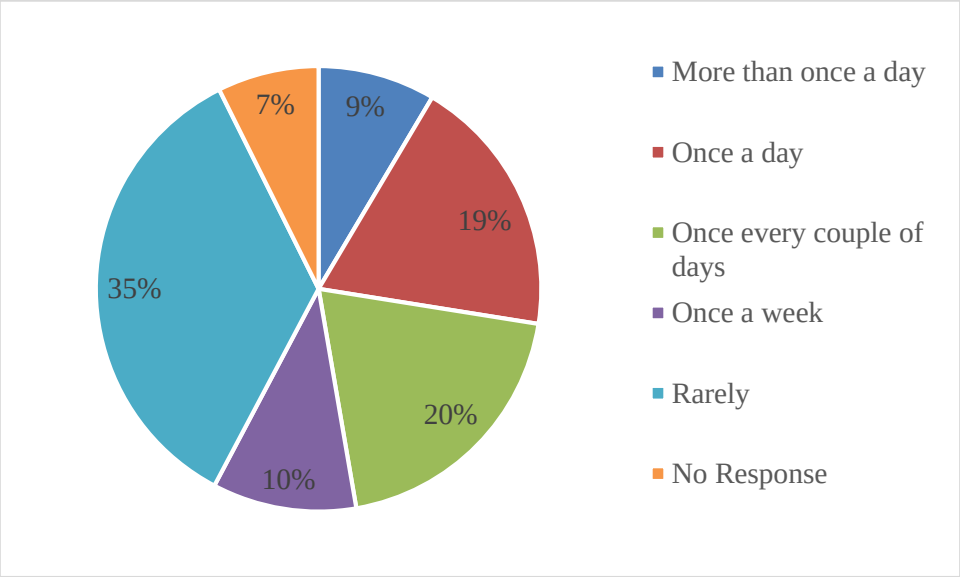
The respondents who travel 10 - 15 kilometres account for 15% of the survey respondents. As previously stated some wifi zones such as the Ibhongo School are no longer functional, it may also be closer to school or the users place of work, these are possible reasons why users may travel distances of 15 kilometres and possibly more to access the wifi. A larger number of responses (49%) have to travel about 1km to get to the wifi zone, further alluding to reachability. It is clear from the chart above that while some users reside near the wifi zones, there are those users who have to travel long distances to reach the nearest wifi zone.

4. How often do you go onto the internet?



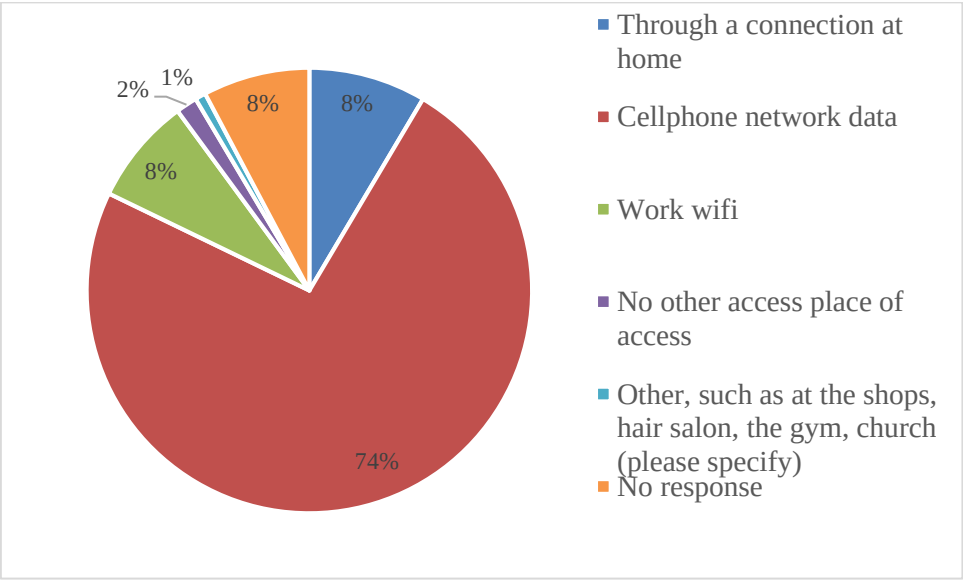
According to the responses provided 17% of the respondents gain access to the internet once a week. The infrequent access to the internet could be due to the factors such as inability to purchase internet bundles or relying solely on wifi zones, while having to travel long distances to reach the nearest wifi zone. The limited usage could also be linked to various reasons such as the cost of network data. Respondents who are on the internet at least once a day account for 33% of the responses.

5. How often do you go on the internet using the city's free wifi?



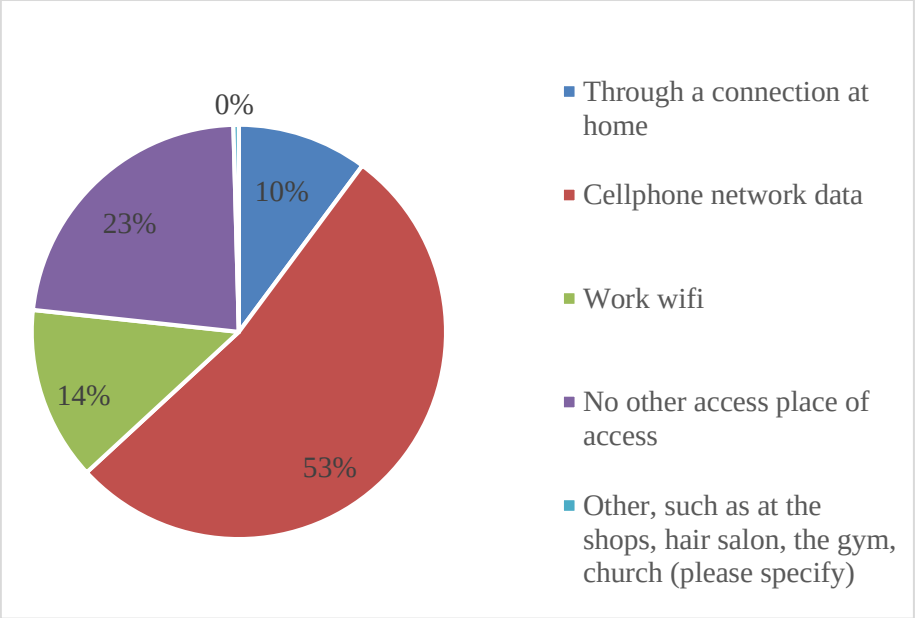
The daily users of the city's free wifi, which could be considered frequent users account for 28% of the responses. With 35% stating that they hardly ever use the city's free wifi. There are users (9%) who use the wifito access the internet more than once a day. The findings suggest that there are users who do not prefer using the free wifi, as they may have a connection elsewhere.

6. Where else do you access the internet?



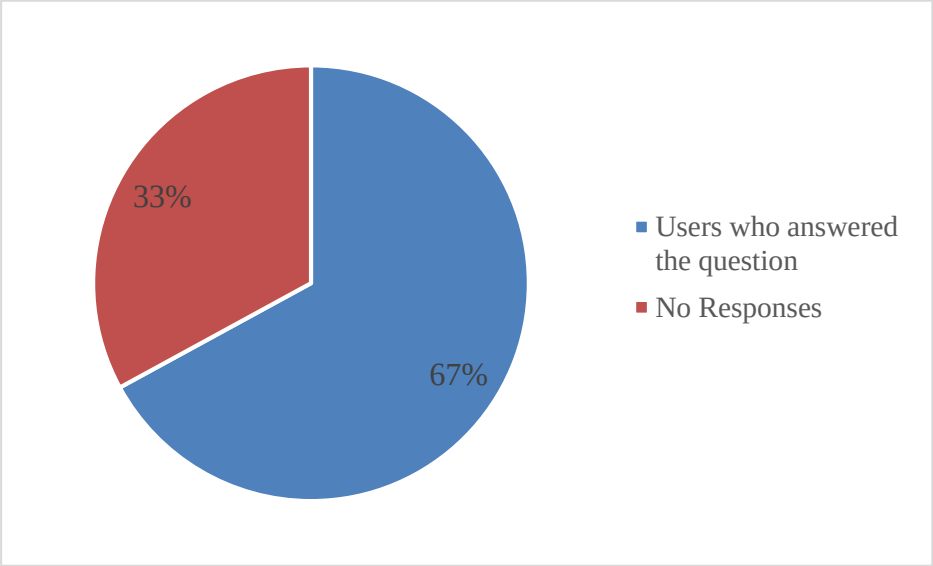
A large number of users indicated that they access the internet through cellphone data. This indicates that users rely on the cellphone networks for their primary access to the internet, as it may be considered most convenient, for example users needing to travel to the nearest wifi zone to access free wifi. Given the cost of data, it shows how important the free wifi zones are in the community.

7. Where do you access the internet most frequently?



In line with the responses provided in the previous question, the respondents mainly rely on the cellphone data to access the internet. With 53% stating that they purchase data from cellphone networks as a primary source of the internet as opposed to free internet provided through municipal wifi and a connection in their homes. This suggests limited impact of the free wifi service.

8. Please list the top three sites you access the most (in no particular order)



The following are the sites which 67% of the respondents listed as their most frequented sites. Only unique accounts of sites accessed are accounted for:

Nature of Content Accessed	**Site visited**
Entertainment (Music mp3 and video streaming/downloads sites)	• Fakaza.com • Mp3download • Playwap • Pluspremier • Songslover • Soundcloud • Tubidy • Webitricks
Social Media	• Facebook • Instagram • Snapchat • Twitter • Whatsapp

Nature of Content Accessed	Site visited
	• YouTube

Economic usage (Job seekers- Respondents indicated that they visit the wifi to access job seeking sites in order to look for work, learnerships and as well as update their online site profiles)	• Career junction
	• Careeropportunities.net
	• Careers24
	• Department of policing vacancies
	• Findjob
	• Jobfinder
	• Jobido
	• Jobindeed
	• Jobmail
	• Jobplacements
	• LinkedIn
	• Pnet
	• SA metro police vacancies
	• SA military vacancies
	• Thepayz
	• Workpay
	• Stock trading (Users visit the free wifi zones to access information on stock performance and how to go about trading on the stock market. Some users indicated that they are trading on Forex)
	  ○ Forex
	  ○ JSE stock exchange
	  ○ Zamob

Education	• Ask a lot • Brainly • Calendary college

Nature of Content Accessed	**Site visited**
	• Ebooks downloads • Education.com • Free education.com • Mandela university • Mindset learn • Myunisa • Scholarship seeking • Tshwane University of Technology University of Johannesburg
Reality TV, soccer and entertainment news	• Blackentertainment • Downloading games • Drum magazine • Kaizer Chiefs • Sliquorlife • Soccer bet • Soccer Laduma • Utorent • Utorent • Zalebs
Information gateways (Current affairs)	• Daily Sun • Globalnews • News24 • News407
(Search engines)	• Brightwave • Cell C • Darkweb • Dictionary.com

Nature of Content Accessed	Site visited
	• Encyclopaedia • Galela Wifi • Google • Google Play store • KFC wifi • Opera mini • UCbrowse
Lifestyle (shopping, classifieds, money transfers)	• Aramex • Bigger bolder baking • Church • Dating • Gumtree • Jw.org • Nike • Online shopping • Patta.com • Paypal • Slimming webites • Ubuy • Woolworths
Unclassified (It is unclear what these sites are used for)	• Global citizen • Kaunet • NGO • NPA • Roro Shuttle
Email	• Gmail • Yahoo

The users access different sites, which range between entertainment, social media, job seekers, education, reality TV, sports and current affairs amongst other sites. The usage of the internet as a search engine is also prominent with wifi users even searching the dark web [10]for information only known to them.

A summary of insights collected from the Background questions

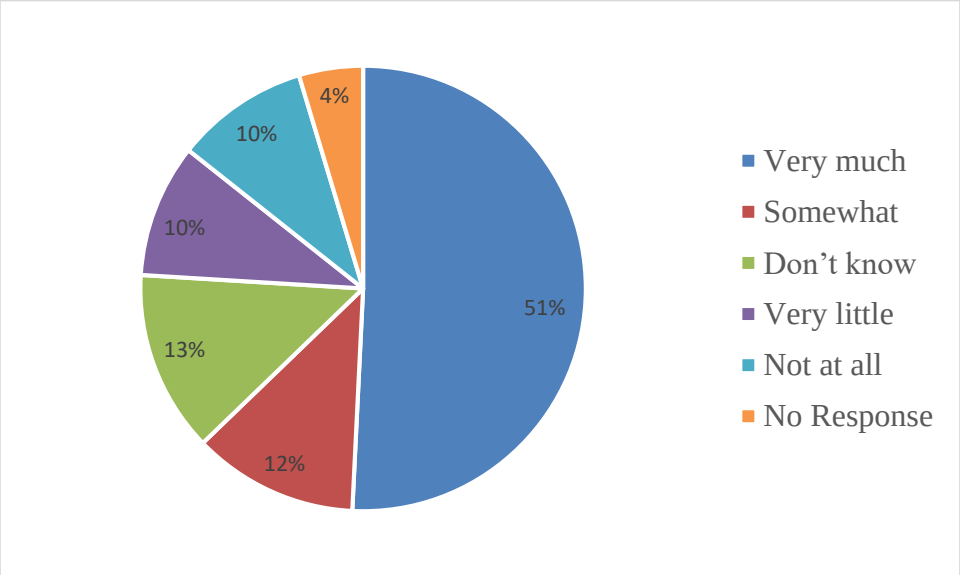
From the outcomes of the background questions, we can state that the respondents are representative of the demographics of the residents of Soweto Township. It is clear that some of the users have to travel long distances to access the free wifi. Female users are fewer when compared to male wifi users. Some users do not find the wifi zones accessible enough (for example due to distance) and this may impact the amount of time they spend on the internet if they rely solely on the wifi zones for access to the internet.

The responses to the questions to follow will provide insights with regards to typical internet usage by the community.

[10] Websites that cannot be found by using traditional search engines or visited by using traditional browsers such as google.

Research Sub question 1: Has the free wifi enabled community members to participate and engage in public debate[11]? (Access to public sphere platforms) (Questions 9- 15)

9. To what extent do you think that free wifi has enabled you to learn about important issues[12] to your community?

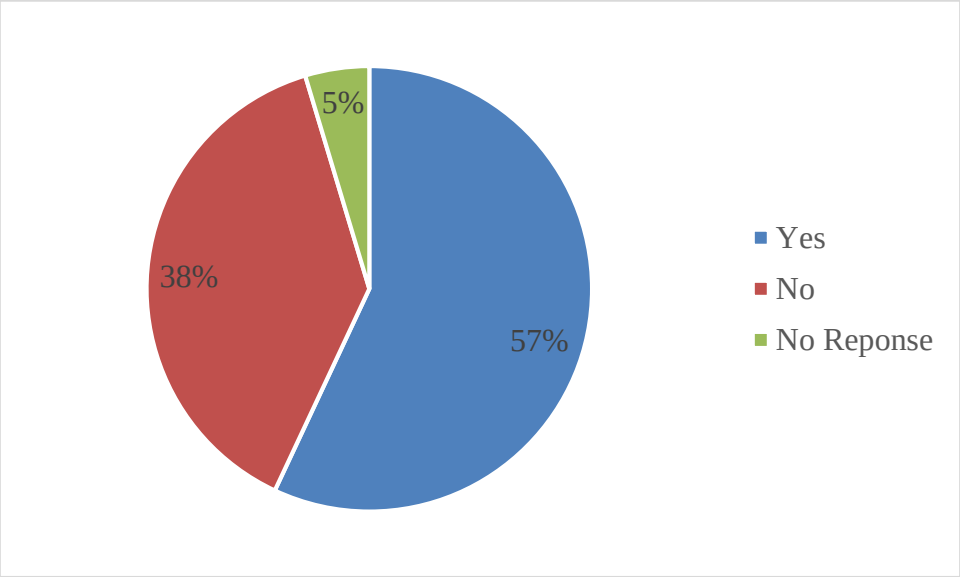


Many of the respondents are of the view that the free wifi enables them to learn about various issues taking place in the community (51% stating "very much" and 12% stating "somewhat"). With only 10% indicating that the free wifi has had no impact. There could be a number of reasons why these users perceive lack of improvement in their knowledge about important issues. It could be attributed to the sites the users access, the sites frequented may not necessarily report on such issues. There are also users who indicated that they "don't know" whether the free wifi has had an impact (13% of users), suggesting a certain level of disengagement amongst the community members.

[11] By "debate" I am referring to exchanges that reflect disagreement and the willingness of different people to constructively argue their point. I use the term "debate" loosely in this research to include face to face interactions, exchanges on social media and radio discussions amongst other platforms.

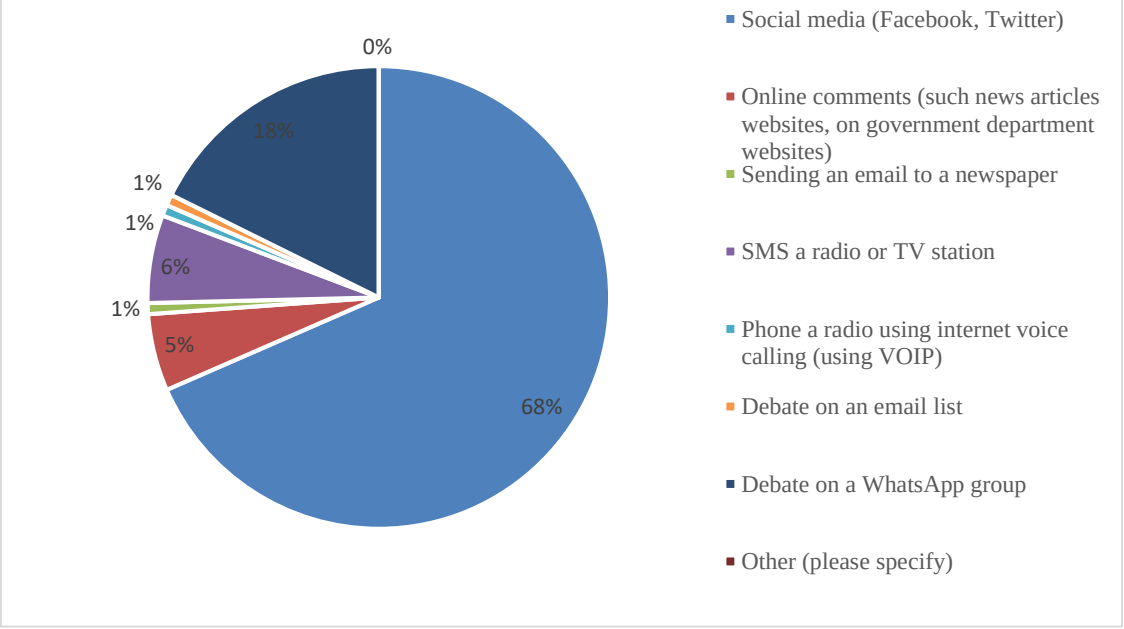
[12] By "important issues" I mean information that enables users to participate in debates which may have an impact on their livelihood such current affairs sites, local government websites and websites for government service providers such as BrightWave.

10. Do you participate in debates or comment on interactive platforms (such as online news sites or twitter)?



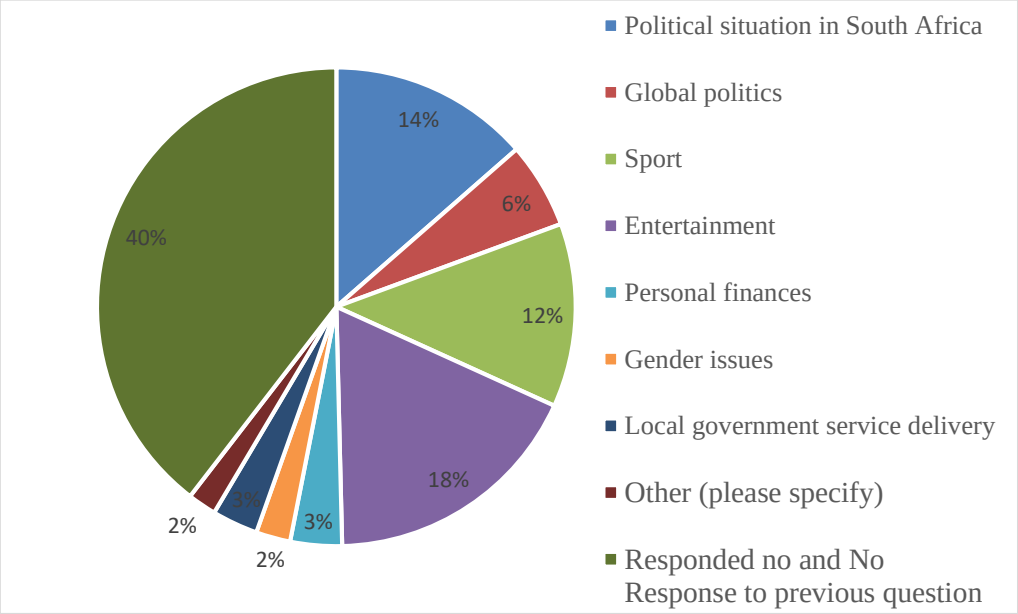
The respondents who indicated that they participate in discourses online account for 57% of the responses. However 38% of the respondents don't engage in online discourses. This provides an indication that not all wifi users are interested in or are able to participate in debates.

11. If yes, on which platforms?



Social media take the lead as the preferred media for participation in online discourses. Contacting the traditional media to engage in discourses accounts for only 7% of the responses as users prefer to sms or phone a radio or television station. WhatsApp as a platform to debate issues is utilised by 18% of the respondents. None of the users who selected "Other" specified the channels they prefer. However, it is clear that users prefer to communicate their concerns through social media channels.

12. What sort of debates have you participated in the last month?

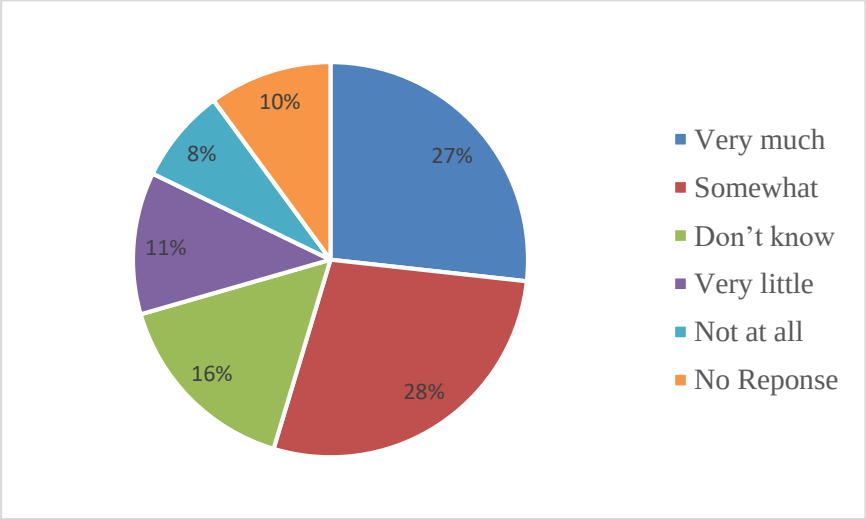


Some respondents responded no to the previous question, and yet provided a response to it, while there were also those who responded to this question who had not provided a response to the previous question[13]. Users who indicated that they engage in debates regarding entertainment account for 18% of the responses while 14% responded that they engage in discussions regarding the political situation in the country, followed by 12% of respondents who participate in debates regarding sports. The

[13] This has been cited under section 8. 6 as part of the limitations of the study.

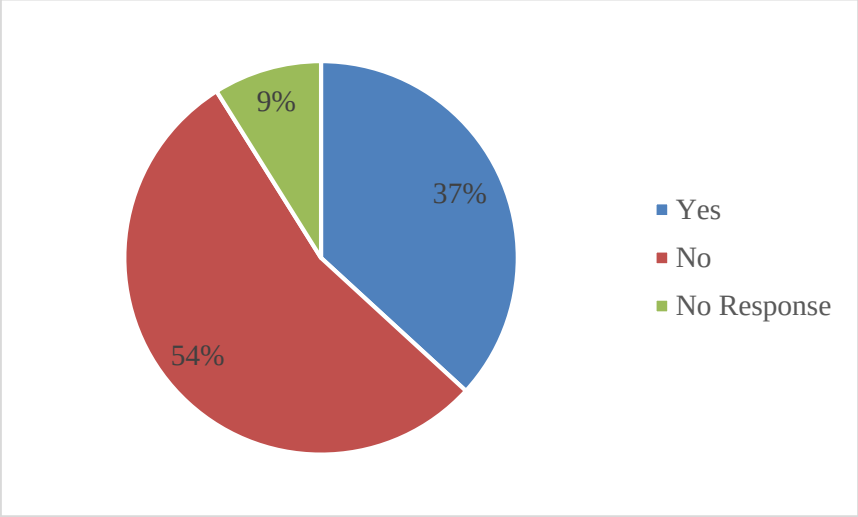
specified items include (under "Other") *personal diets, music and the budget speech* and account for 2% of the responses.

13. In your view has free wifi led to access to participation on issues related to the community?



The respondents who are of the view that the free wifi has not led to access to participation in community related affairs account for 10%. While those who perceive that the free wifi has enabled the community access to issues relating to their livelihood account for 55% ("very much" garnered 27% and "somewhat" 28% of the total responses). The responses are mainly positive, the users who responded negatively may not know how to participate and through which channels to communicate their views, or even lack the desire to do so.

14. Have you used the information obtained using the free wifi to highlight to issues in your community?



A large number of respondents (54%) have not used the free wifi to bring issues which concern their livelihood as citizens to the attention of other community stakeholders. This suggests that perhaps users do not know which online platform to utilise and bring the issue to the accountable people. Respondents who have participated in highlighting community-related issues account for 37% of the respondents. The question below details the issues that have been highlighted by community members.

15. If yes, what issues have you brought attention to?

The prevailing issues identified by community members were coded and themed as follows:

Failure of government

- Crime
- Electricity cuts and unscheduled load shedding by Eskom
- Lack of community sports amenities
- Lack of service delivery by local government
- Lack of water
- Lack of good political leadership
- Pollution
- Safety and security in the community

- Skills development
- Strikes about service delivery
- Unemployment
- Lack of housing
- Healthcare

Social ills

- Crime
- Drugs and alcohol abuse
- Human trafficking
- Teenage pregnancy
- Unemployment

Gender issues

- Gender based violence
- Inequality
- Homophobia

Safety of wifi users

- Online job scams

Politics

- Expropriation of land without compensation
- The disinterest of the community in political affairs

Lifestyle

- Religion
- Charity events

Economic uses of the internet

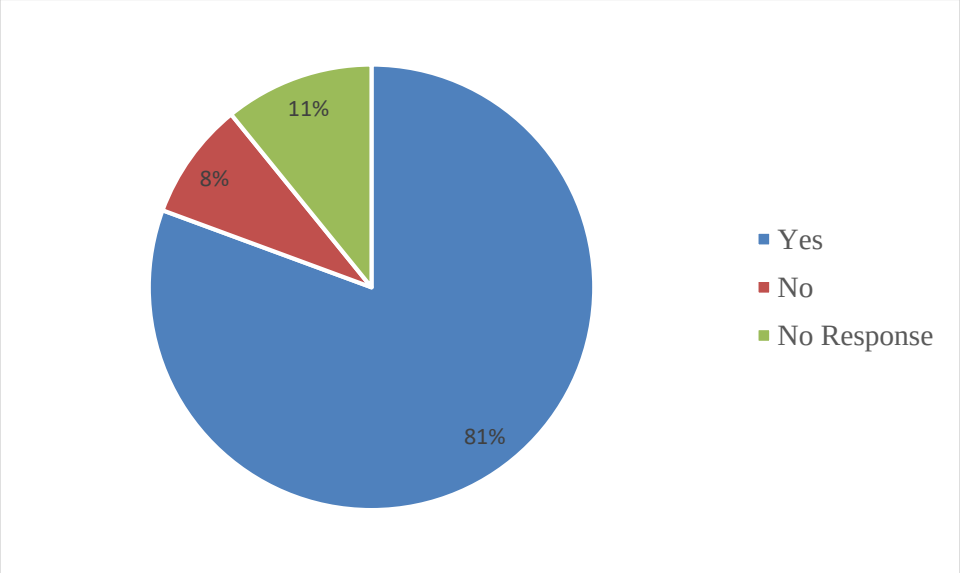
- The Rand's performance against other currencies
- The cost of the internet

A summary of insights collected from survey questions 9 to 15

There are community members who believe that free wifi has enabled them to learn about various issues taking place in the community, with some being disengaged. Not all community members are interested and are able to participate. Social media is the preferred medium for those who participate in online discussions. Entertainment accounts for the highest percentage for online discussions. The community also perceives that the free wifi has enabled them access to issues relating to their livelihood. The issues that have been highlighted by community members are themed as the failure of government, social ills, gender issues, Safety of wifi users, Lifestyle and economic uses of the internet.

Research Sub question 2: Has free wifi availability enabled individuals in the community access to information that empowers them to engage in public debate? (Access to information) (Questions 16- 21)

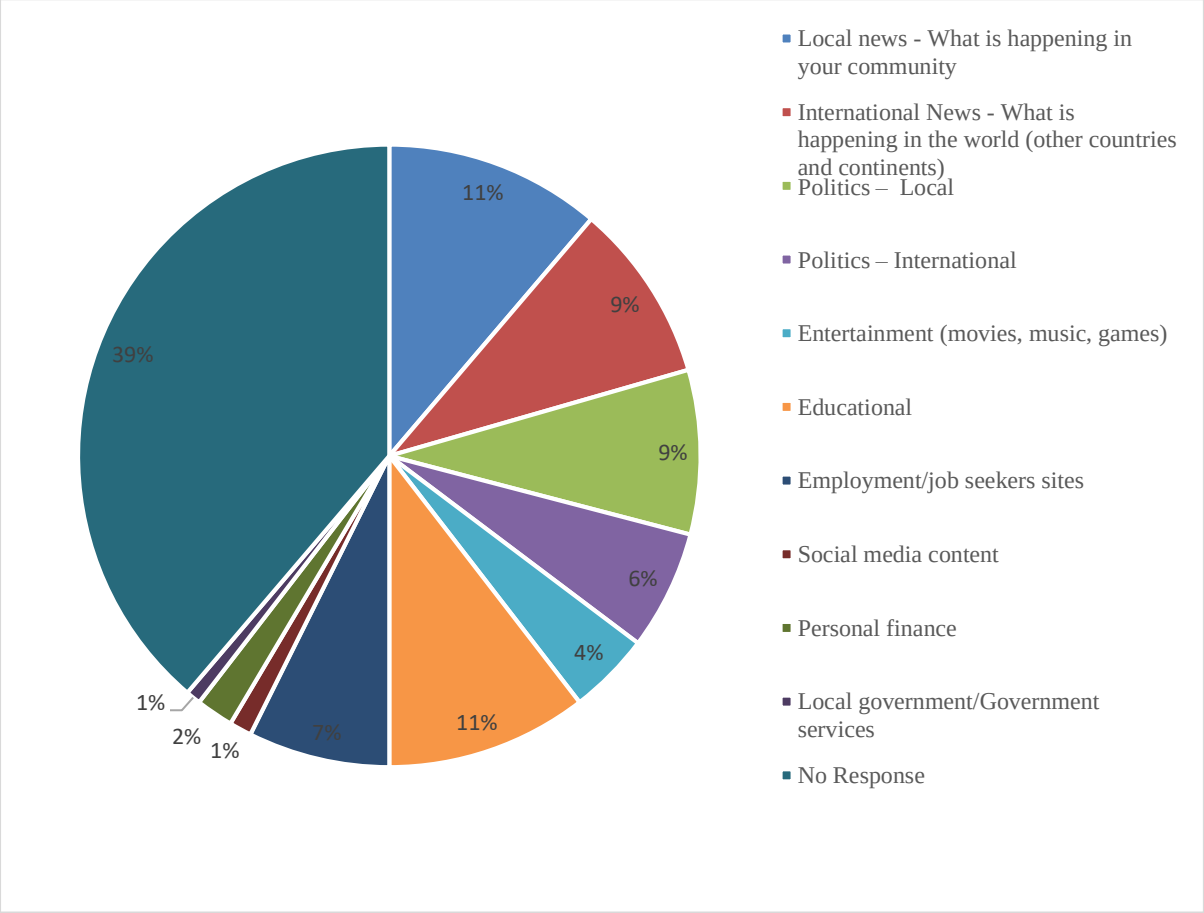
16. Do you use the free wifi to access information that empowers[14] you?



[14] By empowering information I refer to broadly to information that the users consider to be vital and that is helping them deal issues in the community. As well as information that enables community members to learn about their rights as citizens.

A majority (81%) of the wifi users are of the view that their access to the internet afforded by the free wifi enables them access to information that they perceive as empowering. It is vital to indicate that information that is considered as empowering is different based on the context of every individual, the users may not align to the loose definition used in the research. The following questions are therefore important as they provide insight into what the users perceive as empowering, such as local news.

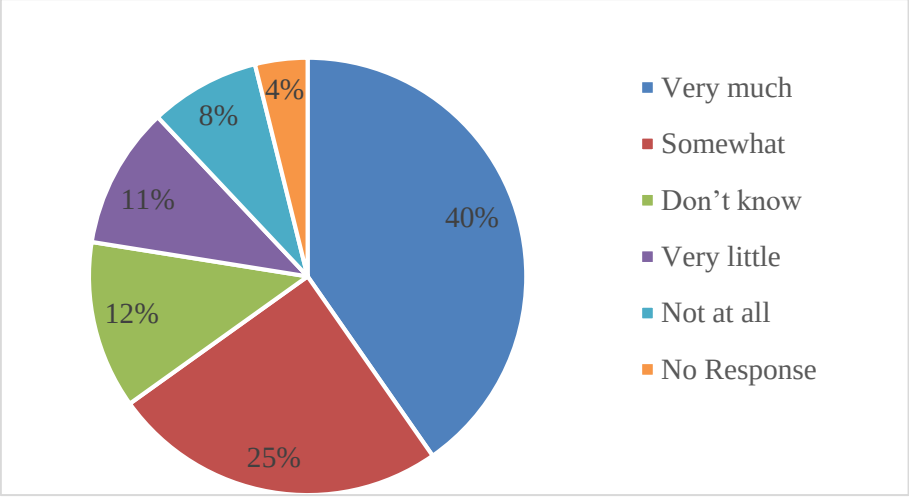
17. What type of information do you access with the free wifi?



Local news and educational content are leading with 11% of the responses each. Followed by international news and local politics at 9%. With social media lagging behind at 6% of the responses. The users are taking time to learn about what is happening around them and access educational platforms (indicating that many of the users could be pursuing a tertiary qualification), issues such as personal finance lag behind. The findings suggest that users find local news and education

sites as crucial perhaps also as information that impacts them immediately.

18. Has free wifi access to information enabled you to formulate opinions on topical issues?

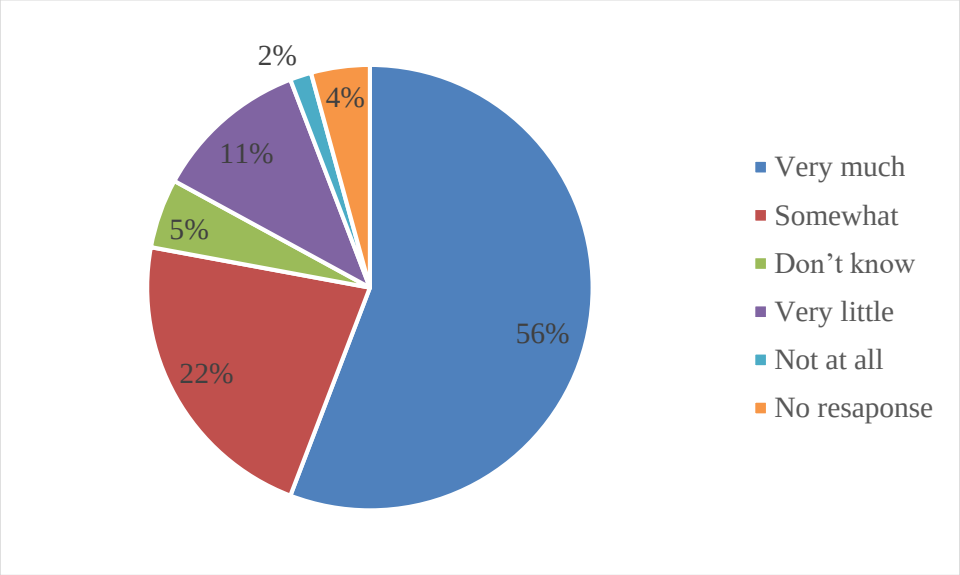


The respondents who are of the view that free wifi has enabled them to gain access to information furthers their ability to have views on topical matters in their context stand at 40% and 8% to the contrary. There are respondents who have not been able to gain access to information which they perceive as being able to help them formulate opinions on topical issues. The users may lack interest in learning about topical issues or knowledge of the sites to visit to access the content.

19. Has the information that you accessed online made you more aware of your rights?

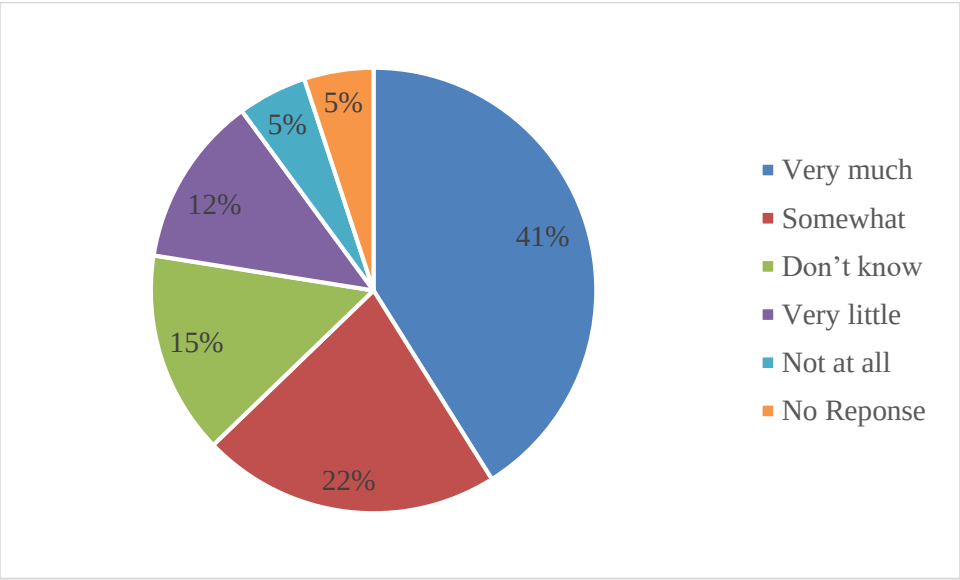
Please rate the level of awareness for the rights below (Constitution of the Republic of South Africa, 1996):

The right to *freedom of expression*



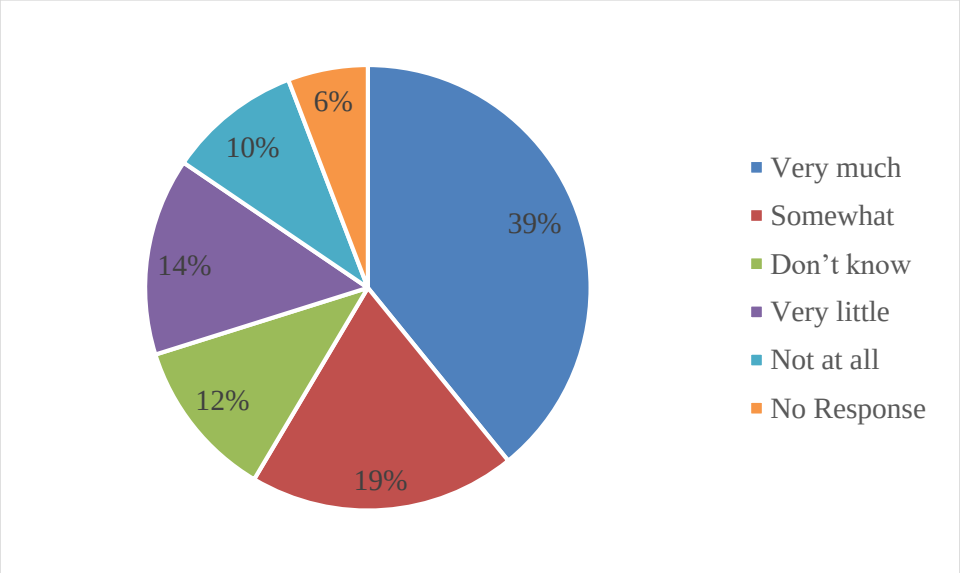
The affirmative responses account for 78% of the responses received. The community members are confident that the wifi has enabled them to learn about their *right to freedom of expression*. The responses of the community members who do not perceive any impact account for 2% of the total number of survey respondents. The users seem to have an idea what this right entails and would perhaps be able to know if and these rights were to be infringed.

The right to *freedom of trade, occupation and profession*



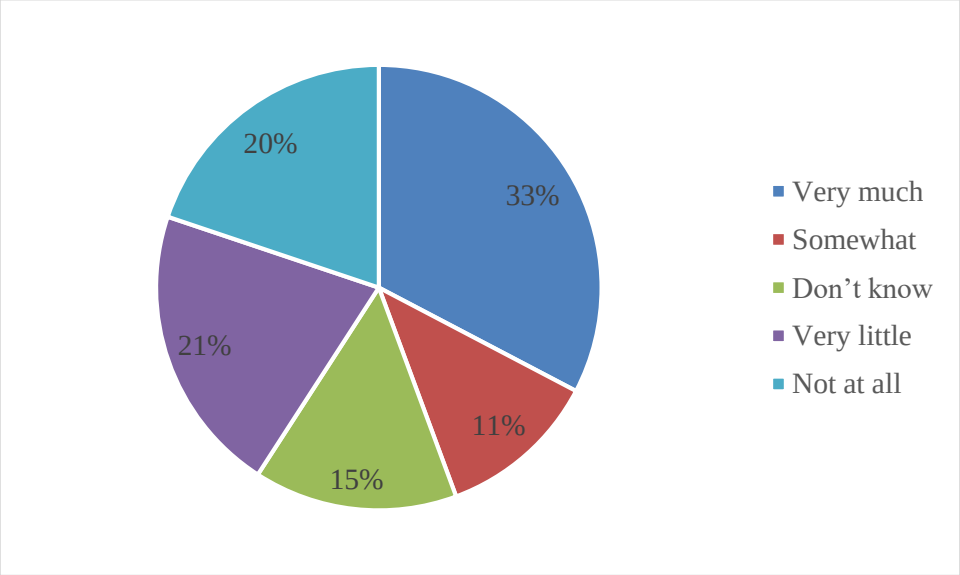
At a slightly lower total of 63% the respondents who are of the view that the free access to the internet has improved their knowledge of the *right to freedom of trade, occupation and profession*. The negative responses are slightly higher than what was recorded for the previous right (*freedom of expression*) as 5% of the respondents indicated that they have not seen any improvement in their awareness of the right. There is a likelihood that users are interpreting awareness as having attained the right for example being employed, therefore because they might be unemployed they may consider it to be a lack of improvement.

The right to *equality*



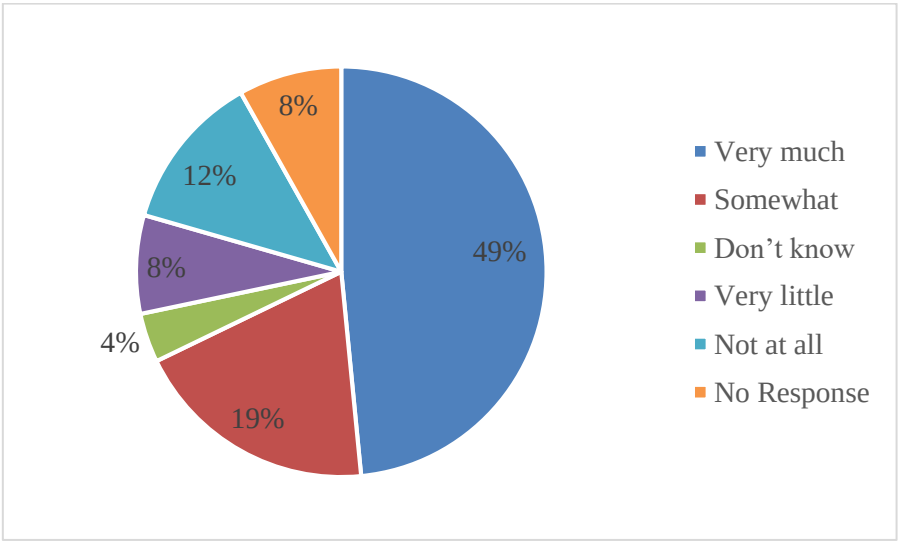
Respondents who perceive an improvement in their awareness of their *right to equality* accounted for over half of the total number of the survey respondents at 58%. Similar to the previous question, the number of respondents who do not perceive an enhancement in their level of awareness has increased, with a total of 10% stating that there has been no improvement in their awareness level. The prominence of gender-related issues in the community may of be attributed to the lack of awareness indicated.

The right to *housing*



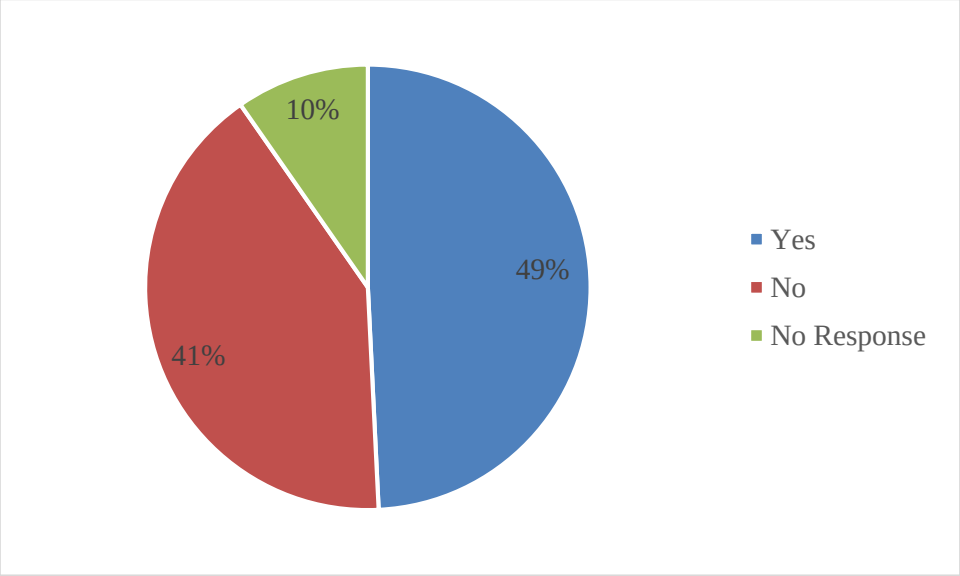
A decline in the awareness of the respondents has also been noted in their right to housing, with 44% of responses stating that their awareness has improved and 20% stating that there has been no improvement in their awareness to the *right to housing*. As indicated under of the *right to freedom of trade, occupation and profession* above, there is a likelihood that users are interpreting awareness as having attained the right for example receiving free housing from the government, therefore because they may consider not having received free housing as a lack of improvement in their awareness.

The right to *health care, food, water and social security*



A total of 68% of the survey respondents indicated that they perceive an increase in their awareness regarding the *right to health care, food, water and social security*. The respondents who have not seen an increase in their level of awareness account for 12% of the survey respondents. This suggests that the users are perhaps able to access free health care, water and possibly receive or know someone who is receiving a social grant.

20. Do you feel empowered by this information to act to realise your rights?



The respondents who are of the view that they are empowered to take actions that could help them realise their rights yielded a slightly higher response rate by 8% of the responses received. These mixed result suggest that some community members have been able to gain access to certain rights, while others have perhaps been unable to. The respondents may also be biased based on perhaps having gained access to a particular right or not.

21. If yes, how are you going about realising your rights?

This question received a total response rate of 22%.

The patterns identified by community members were coded and themed as follows:

Being responsible not to violate the rights of others and also recognise if others are violating mine

- The respondents expressed a general awareness that with every right comes responsibility, that while it is vital for every citizen to access their rights, it is also equally important not to violate the rights of others.
- The respondents also found it important to be aware when their own rights are being violated.

Ability to identify when rights are not met by the government and those in power

- A theme of concern that the community's rights are not met by the government was glaring in the responses received. The respondents indicated that they do not feel like they are realising their rights as citizens and therefore their rights were not being met.

Educating those who are less informed

- Some respondents found it key to educate their family member and fellow community members about their rights and this is the manner through which they were accessing their rights.

Self-expression and communicating with the government on needs as citizens

- Respondents indicated that they were realising their freedom of speech by contacting or reaching out to government officials and informing them of the community's needs.

Accessing information and education to improve quality of life

- Another manner identified by respondents through which they realised their rights was through gaining access to the relevant information in order to empower themselves to improve their lives.

- Gaining access to tertiary education was another key theme under this heading identified by respondents.

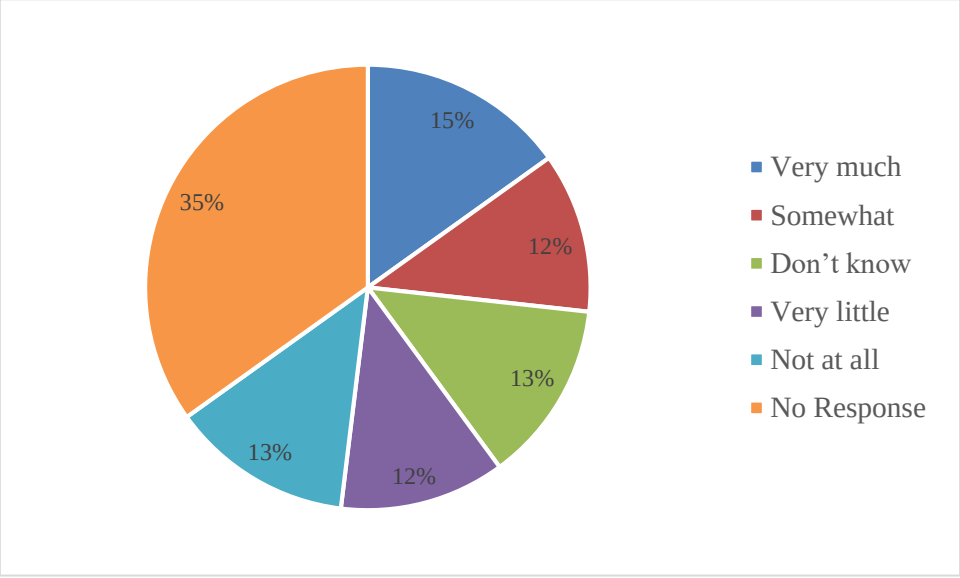
A summary of insights collected from survey questions 16 to 21

There is likelihood that users are interpreting awareness regarding a particular right as synonymous with having attained the right. The users access their rights by:

- being responsible not to violate the rights of others and also recognise if theirs are violated;
- being able to identify when their rights are not met by the government and those in power;
- taking time to educate those who are less informed; self-expression and communicating with the government on their needs as citizens; and
- accessing information and education to improve their quality of life.

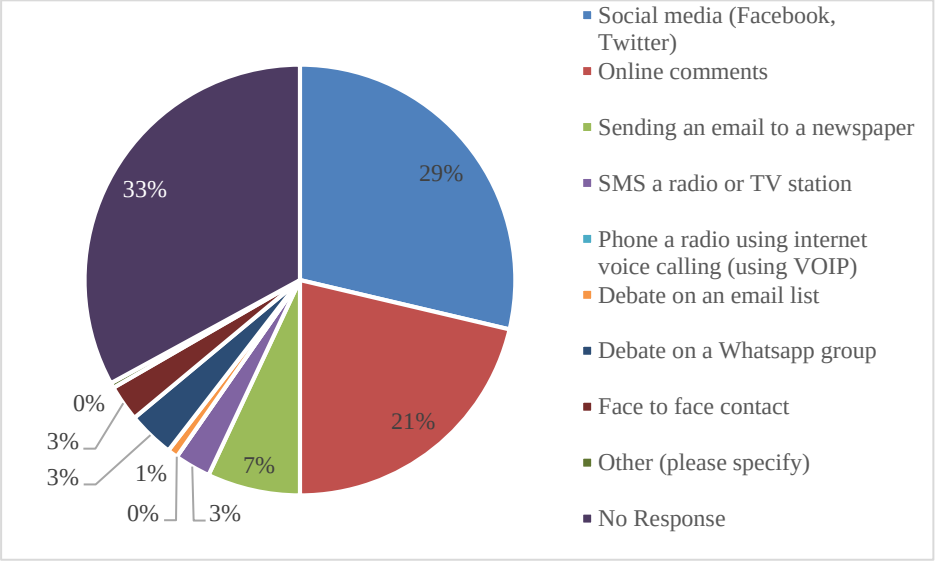
Research Sub question 3: Has free wifi allowed the community to make their needs publically known? (Questions 22- 29)

22. Has free wifi empowered you on ways to contact your local government about your needs as a citizen?



The respondents who are of the view that free access to the internet has aided them in reaching local government regarding their needs as citizens account for 27% ("very much" and "somewhat"), the respondents who do not perceive that their access to free internet has improved contact with the local government account for 13% of the responses. There are respondents who perceive a degree of empowerment and they account for 12% of the responses. The results suggest that prior to the access the users may have had no alternative to their network data access, which may have limited the users' interactions with their local government due to the associated costs. The free internet access may also empower users to follow up more frequently than they would have been using the network data, or research alternative contact details to reach the government officials.

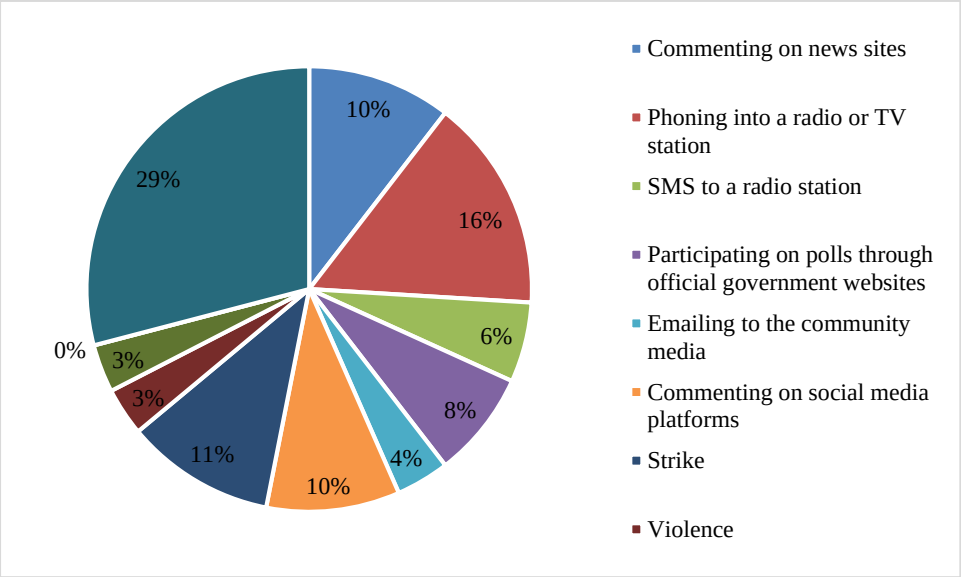
23. Have you expressed your views to your local government via the channels below?



The respondents identified three main ways of engaging with local government about their concerns namely, social media followed by online comments and sending an email to a newspaper. Face-to-face contact only accounts for 3% of the responses. The responses are indicative of the importance of the internet to people's ability to

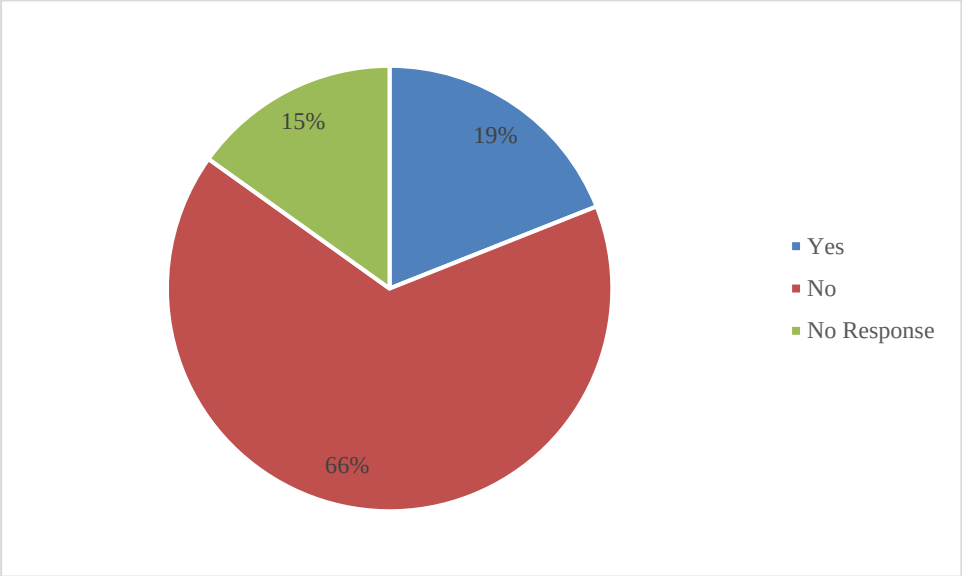
contact government, as most responses involve the need to connect to the internet in order to be able to speak about their concerns.

24. What do you think is the best way to get media attention regarding community-related issues?



The respondents indicated that the three best ways to get the media's attention is through phoning in to a radio or TV station, engaging in strike action and commenting on news sites (listed in order of priority). The need for internet access is also identified through the responses as commenting on news sites requires access to the internet. The results suggest that the internet is seen as a way to raise concerns in the media compared to violence and strike action.

25. Is there an instance you can share where you have managed to gain media attention for an issue that is important to you using the city's fee wifi?



A large number of respondents have not yet been able to reach the media through their usage of the free internet, which accounts for 66% of the respondents. There are community members who have successfully reached the media, with "yes" garnering 19% of the total survey responses. This suggests that the users may have employed different strategies to reach out to the media. For example some have commented on a social media post (public) while others may have emailed to the news channel (private), thereby leading to different outcomes.

26. If yes, please provide details

The prevailing issues identified by community members were coded and themed as follows:

The struggle to gain media attention

- The community finds it important for media to be aware that they battle to get media attention.
- Once they are successful at gaining media attention the community members indicated that before they go on to raise the prevailing

issues in the community, they alert the media about their battle to successfully gain their attention.

- The community indicated that they rely on Jozi FM[15] to profile their issues and give them the opportunity to communicate on community related issues.

Crime in the community

- The crime experienced by community members is a concern to them and they bring it to the attention of the media, hoping the government will be responsive and the community can realise its right to safety and security.

Community development

- The health and wellbeing of the community as a whole is of concern to respondents. The community hopes bringing issues such as healthcare access to the media's agenda will improve their circumstances.

Government provision of free housing

- Access to the Reconstruction and Development Programme (RDP) housing is an important issue to the community members. The community members who are aware of their right to housing attempt to gain media access with the hope that it will bring them closer to accessing the right to housing.

The role of the church in the community

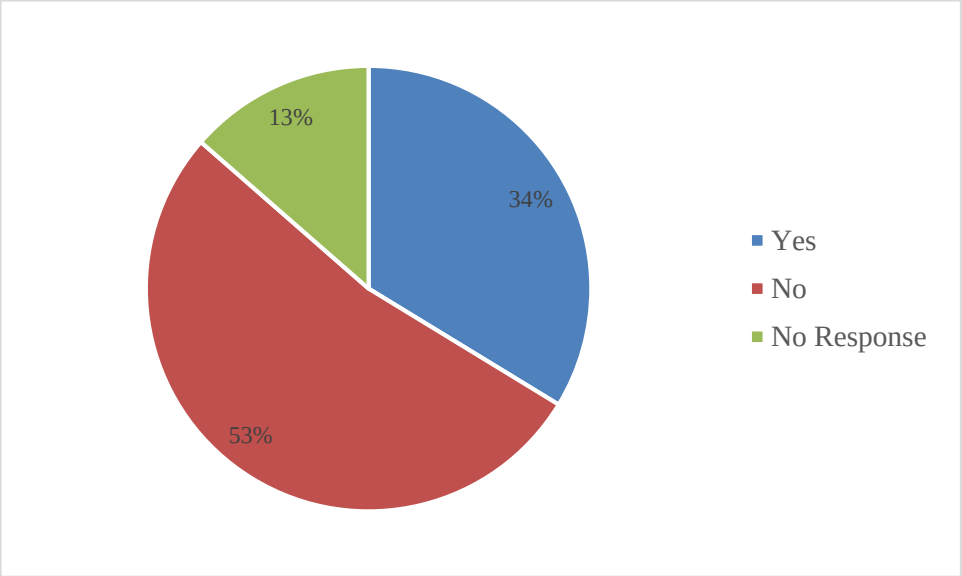
- The responses were unclear on what they bring attention to with regards to the church and religion. However it was vital to note as 2 of the 18 responded to this question.

The community members who received media attention articulated their concerns to the media about how much they battle to gain such attention. The scourge of crime in the community, the need for community development, the need for government provision of free housing and the role of the church in the community. The findings show that the

[15] Jozi FM is a local community radio station. Including Soweto, it covers Alberton, Germiston, Kagiso, Lenasia, Krugersdorp, Kempton Park and Randfontein.

community is aware of the challenges facing the community and that the community wishes to work with the government to combat the challenges, hence their involvement in church related activities to help others less fortunate than them.

27. Has the wifi enabled your community to interact with each other about issues of common concern?



More than half of the responses received indicate that the community members have limited interaction on the issues of common concern through the platforms enabled by free wifi. However, there are community members who engage with each other through the aid of free wifi accounting for 34% of the responses. The following question provides insights regarding the community engagements, such as discussions about the prevalent social ills in the community.

28. If yes, what do you communicate about?

The prevailing discussions regarding issues affecting the community identified by community members were coded and themed as follows:

Social ills

- Crime in the community
- Teenage pregnancy

- Unemployment
- Drinking and driving

Failure of government

- Pikitup (garbage collection employee) strikes
- Safety in the community
- Streets don't have speed humps
- Population overcrowding
- No access to enough water
- Lack of service delivery
- Land grabs and returning of land

Entertainment

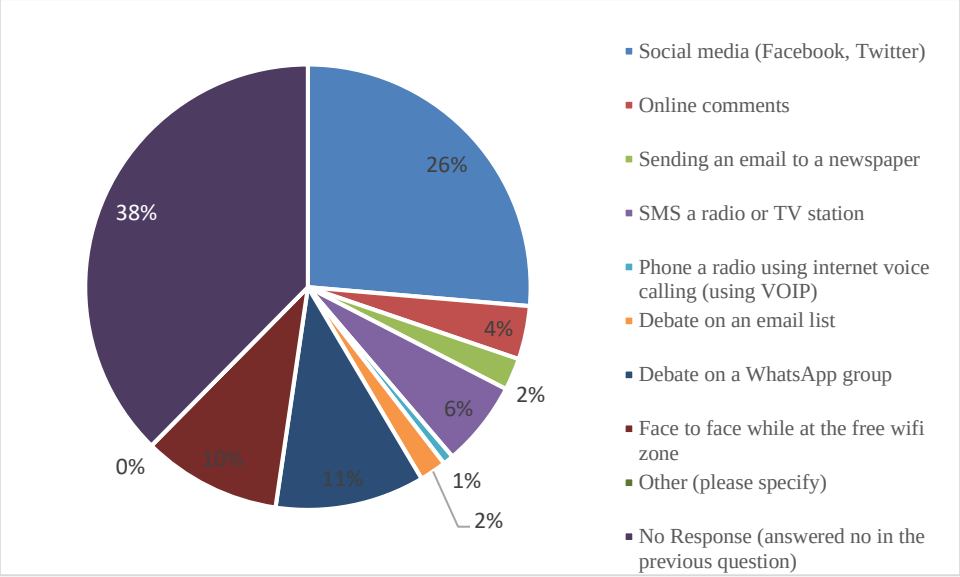
- Sports updates and news

Gender related issues

- Raising awareness against child and woman abuse

Community members have a variety of discussions, ranging from soccer to teenage pregnancy. The findings suggest that the community is aware of what is going wrong in the community, with some community members are working on resolving the issues, while for certain issues the community perceives that the government is to blame for the challenges they experience.

29. If yes, how do you interact?



The discussions taking place among community members occur on varying platforms, 26% of the responses indicate they engage on social media. Some respondents (10%) noted that discussions occur in person during the community member's wifi zone visits. Except for the face-to-face option, the options which were selected by the respondents indicate that the community engagements occur on platforms where the community requires access to the internet. One can therefore make the observation that the internet can promote community discussions.

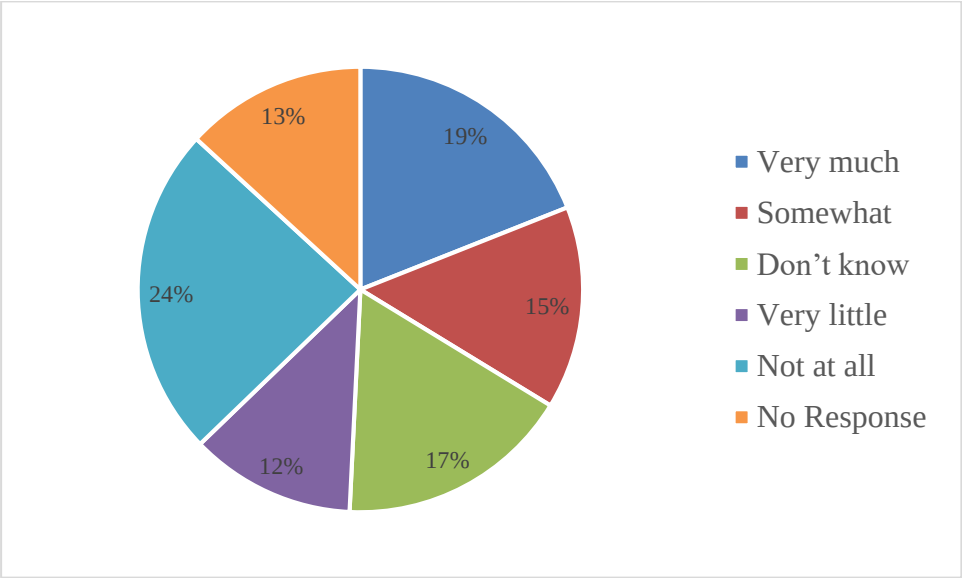
A summary of insights collected from survey questions 22 to 29

Free internet access may empower users to make their needs known to local government. The internet improves the community's ability to communicate with government. The internet is seen as a viable way to raise concerns in the media compared to violence and strike action. Community members who have successfully reached the media such as the Jozi FM community radio station have been able to profile various issues such as crime in the community. The community members have limited interactions with each other about issues of common concern, such as social ills. This suggests that perhaps community members see these issues as government related and perceive that the solutions must come from the government. It is also possible that community members

find it easier to communicate to each other offline instead of via online banking platforms.

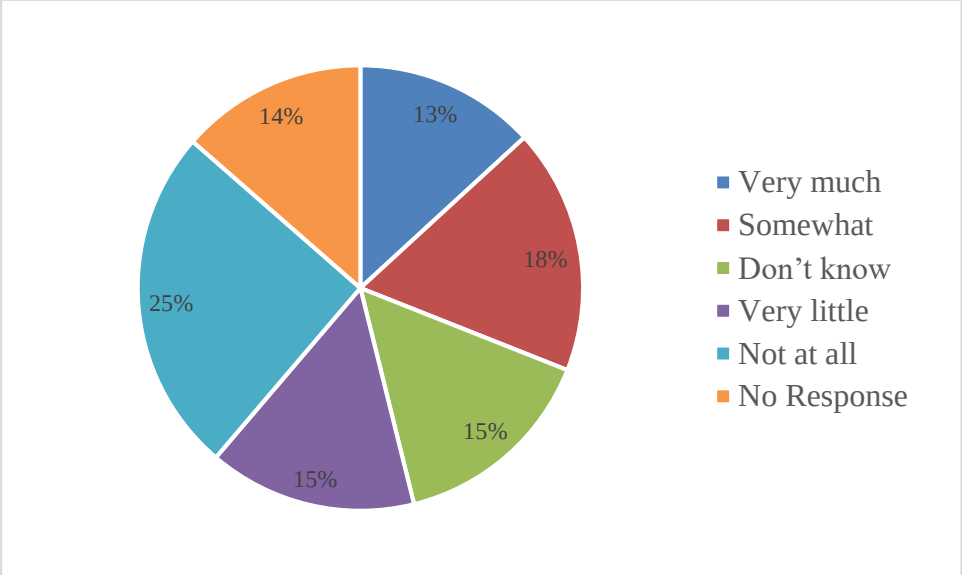
Research Sub question 4: Has free wifi allowed the community to receive feedback from local government? (Questions 30- 35)

30. Has free wifi enabled you to receive feedback from your local government regarding issues that relate to your needs?



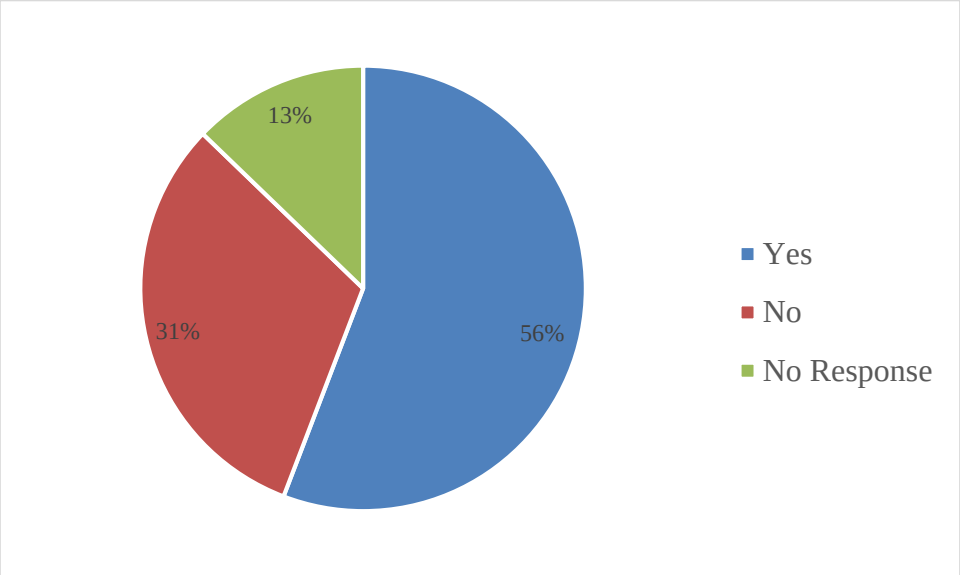
The respondents who are of the view that the free wifi has yielded feedback from local government account for 34% of responses ("very much" at 19% and "somewhat" at 15%). While those who believe very little feedback has been received as a result of the free wifi are at 12% and the respondents who believe it has not yielded any feedback account for 24%. The respondents who believe that the free wifi has had an impact on feedback from the government account for less than half of the total number of survey respondents. The findings suggest that some users are positive about the impact the free wifi has had on their ability to receive feedback, while other members do not perceive a difference. This could be due to the manner in which they contact government officials and the nature of issues they communicate about, as some issues cannot be dealt with at the local government sphere, such as the free healthcare system and improvement thereof.

31. Has feedback been received to your comments in relation to your wellbeing as a citizen from your local government (such as crime)?



The share of respondents who are of the view that their comments in relation to the wellbeing as citizens have been responded to by local government account for 31% ("very much" at 13% and "somewhat" at 18%) and those who are of a contrary view account for a total of 25%. The findings suggest disengagement as 15% of the respondents stated that they "don't know". It could be that the community members don't follow-up with government officials after communicating their concerns. Another possible scenario is that the community members have not made contact with government about the issues they perceive as pertinent to their wellbeing as citizens.

32. Do you think the free wifi service can be improved?



Free wifi users that believe the free wifi service can be improved account for 56% of the survey respondents. There are respondents (31%) who indicated that they do not see any improvements to be made. The users who may not perceive a need for improvement may not necessarily be frequent users, therefore may not be able to comment on ways to improve the service.

33. If yes, what do you recommend on how to improve the free wifi services in Soweto?

The key suggestions identified by community members were coded and themed as follows:

Age appropriate content

- Block pornography sites and do not allow minors access to adult content and entertainment sites.

Education of wifi users

- Teach the youth to use the internet in a wise manner that will enable them to improve themselves as individuals.
- Educate users to use the internet to improve their current financial situation.

Environment and accessibility

- Wifi coverage should be wider, so that the community can have to access to the internet anywhere in the community.
- Bring it closer to the homes of community members to shorten the walking distance.
- Provide wifi vouchers instead of having people walk to access the wifi.
- Increase the amount of data allowed per device/person per day or alternatively make it unlimited.
- Make it more inclusive for elders in the community.
- Inform people about the free wifi zones through community media, to create more awareness in the community so other people can access the wifi.

Safety of wifi users

- More wifi zones are needed nearer to the homes and in the homes of residents, as wifi users get robbed at night when walking back home from the wifi zones.
- Wifi access points should be safer. There is a lot of crime taking place at the park, preference is to either install the wifi at every street corner or in private households.
- Provide tips of sites that are safe for users to use without threats to their cyber security.

Wifi speed and reliability

- Increase the connectivity speed.
- Ensure that the wifi network is always connected.
- Inform users when the wifi connection is down.

The wifi free users are concerned about the content filtering aspect of the free wifi, as they desire that the children not be exposed to adult content. Amongst other aspects the results also suggest that the users have an interest in possible interventions to empower users who lack the necessary skills to turn their internet interactions and make them productive such as for business or school.

34. In what ways has the free wifi service had a positive impact on your life?

The prevailing patterns identified by community members were coded and themed as follows:

Information gateway

- Gaining the fulfilment of getting information.
- It helps the community to know what is happening around the world.
- Ability to access emails without network data.
- Provides access to information that is not covered by mainstream media.
- Enables users to conduct research and gain access to information they require for a variety of reasons such as self-improvement, baking tips, healthy living, weight loss amongst many other uses.

Economic usage

- Seeking opportunities to improve financial status.
- Updating online resumes, uploading resumes and applying for job opportunities.
- Applying to tertiary institutions and sending job applications to possible employers for learnership opportunities.
- Users are able to start their own business due to the ability to access free internet.
- Scheduling business meetings.

Environment and accessibility

- Ability to access the internet at no cost, as data is considered too costly.
- Having an alternative to another internet access point.

Enabling the right to education

- Aiding with research for school homework and tertiary education for those without data.
- Registering children for school and admissions.

No development

- There has been no impact.
- Information accessed is considered useless and not rendering a meaningful contribution to the users' lives.
- Used mainly for downloading purposes, there is no impact.
- No change, limited usage therefore no impact can be identified.

Connecting with family and friends

- Ability to make arrangements to meet with friends and family.
- Enabled access to communication with others.

Entertainment

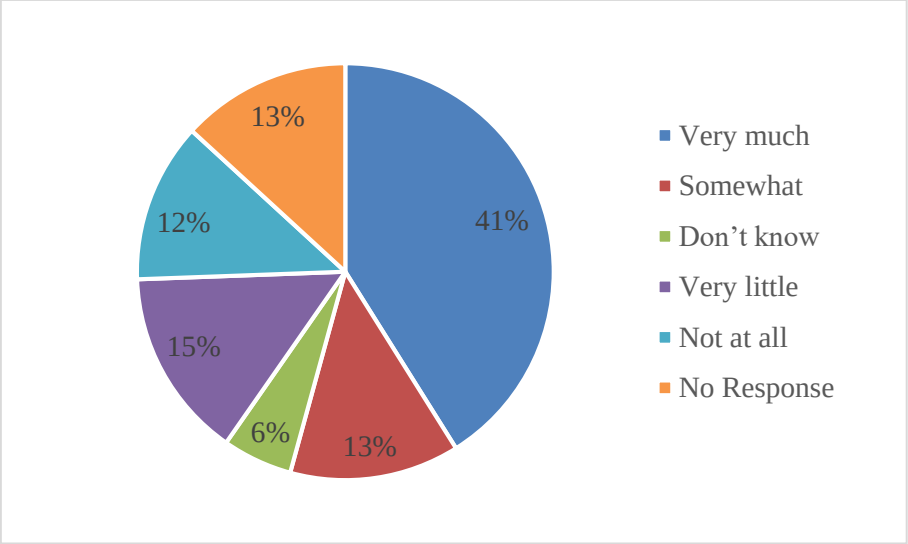
- Tracking what the users' favourite personalities are doing and with whom, through social media and entertainment sites.
- Downloading movies for free.
- Watching football.

Lifestyle

- Improved cooking skills.
- Learning about personal wellbeing.

While certain users perceive the free wifi to not have had a positive impact in their lives, there are users who are of their view that it has yielded positive outcome. The results suggest that users who are enjoying a positive outcomes as a result of the free wifi access are able to further their interests such as studies, cooking and entertainment.

35. If you did not have access to the city's free wifi, would you use your personal internet data bundles to participate in media discussions regarding community/citizenry related issues?



The percentage of free wifi users who believe that their participation in media discussions is not impacted by the availability of free wifi account for 54% ("very much" at 41% and "somewhat" at 13%) of the survey responses. The users who are uncertain about possible engagements account for 6% of the responses. The community members who would not engage account for 12% of the responses. There could be many reasons why certain people would be reluctant or unable to engage, such as the cost of data bundles as unemployment has been cited as one of the challenges faced by the community.

A summary of insights collected from survey questions 30 to 35

The results are mixed and suggest that some users are positive about the impact the free wifi has had on their ability to receive feedback from local government, while other members do not perceive a difference.

While there are users who do not perceive positive outcomes from the free wifi usage, there are users who are enjoying positive outcomes. It is believed by the users that the service can be improved, by for example connecting more wifi zones nearer to the homes.

9.1.1 Comparison of the results with the research goals and objectives

The research sub-questions reflect the research objectives of the study, as the objectives set out are to determine if free wifi availability has:

- Enabled community members to participate and engage in public debate;
- Enabled individuals in the community access to information that empowers them to engage in public debate;
- Empowered the community to make their needs publically known; and
- Enabled the community to receive feedback from local government.

In this section the research sub-questions are linked to the feedback received through the research instruments in order to make inferences in the manner of themes for the purpose of answering the main research question.

Research Sub question 1: Has the free wifi enabled community members to participate and engage in public debate? (Access to public sphere platforms)

The challenge of inclusivity

Women face a challenge of exclusion

There is a clear imbalance in the number of female wifi users when compared to the number of male wifi users. Inferences made through the outcomes of both the survey and the field notes demonstrate that the free wifi is less utilised by women (27% of women completed the survey). This is indicative of the gender access ratio at the wifi zones. The respondents of the survey noted that they make use of the internet access to bring access to issues of crime and their safety as community members. Users are required to walk to the wifi zones and this poses a challenge for some of them. some female users have explained that they fear being robbed or raped while en route to or from the wifi zones,

hence some females in the community forgo the option of free wifi. True to the findings of the International Telecommunications Union reports as previously noted, which state that the proportion of women using the internet is 12% lower than the proportion of men, further highlighting the plight of women to be connected and stay connected.

Exclusion due to age and lack of education

The research suggests that other community members who are excluded by the free wifi are those who are over 40 years of age and older. The number of users who were over 40 years during the data collection process was insignificant compared to younger wifi users (the average age of the typical wifi user at the wifi zone is between 20-24 years). Advocating De Lanerolle's (2012) argument where it is stated that it is unfortunate that there are people who find themselves on the wrong side of the digital divide. He highlights education and age as some of the contributing factors as to which sides the user finds themselves on.

The wifi users cited on a number of occasions that there is a need to educate community members on how they can effectively use the free wifi. The users stated that there are people who do not know that there is free wifi available and those who do not know how to access the internet using the free wifi.

Illness, immobility and disability enablers of exclusion

In the Soweto community as with any other community there are people who are too old or sickly and they people are unable to walk to the free wifi zones. De Lanerolle (2012) also highlighted the need to make the internet more accessible to people with disabilities in South Africa as they find themselves on the wrong side of the digital divide. In the case of the free wifi zones it is dejecting to report that during the time spent at the free wifi zones, *there were no users with obvious disabilities*. Since the free wifi can only be accessed when one is at the free wifi zones. The interact connectivity is lost as soon as one away from the

wifi zone, for example First wifi hotspot – Protea Point[16] is at a shopping centre, it disconnects the user as soon as one is out of the range which is about a 300 meters away from the wifi zone, meaning that those who are immobile are unable to access the free wifi and are possible not connected to the internet. What also stood out was that the park visited and the rest of the public spaces where the data was collected were not built with people with disabilities in mind. This may be a result of the introduction of the free wifi as a separate project in these spaces, after which the zones were not adapted to suit the users. For example, there are no ramps for wheelchair users, nor are there walkways for the blind and no signage for the deaf amongst other observations made.

Media attention - A coveted arena

Community members are of the view that the media does not pay attention to them and their issues. Over 60% of the respondents stated that they have not been able to gain media attention. The community members who were able to reach the media (by phoning into a radio or TV station, engaging in strike action and commenting on news sites) only form a small part of the survey respondents. Most users prefer to engage on topical discussions through social media as opposed to traditional media (57% of users engage on the debates via the online platform with 68% of these discussions taking place on social media). The community members whose desire it is to reach out to mainstream and community media platforms have to be persistent and continuously try in order to successfully gain media attention. On the other hand, social media allows them a chance at receiving feedback, as they can comment and post their own content on issues that are critical to them. The perception is that often those on the other side have no choice but to respond to their comments due to the transparency of the platform. A clear advantage of

[16] This wifi hotspot is in shopping centre. Refer to the wifi zone description section (Appendix B: Field notes)

social media[17] is its ability to connect people to the decision makers directly than having to rely on a third party (the media) or mediator to receive feedback on issues raised. According to the C4D principles previously discussed, this is ideal as it promotes communication between the public and government without mediation from a third party.

Public debate

The community debates on interactive online platforms are not primarily focused on the issues affecting their livelihood as citizens (14% of the 60% of survey respondents who responded to this question stating that they engage in debates focused on entertainment). The findings suggest that online interactions lean more towards entertainment (14%) and sports also is noted by 14% of respondents. The current political situation does have a place in the discussions (18%)). Dahlgren (2005) highlighted that the manner in which politics take place has not necessarily changed due to the proliferation of the internet. Based on the findings it can is evident that there is a need to mobilise people to participate in public debates. One can therefore deduce that political discourse is taking place and perhaps the wifi has not changed how this happens in for example the discussions taking place during political party rallies. In the South African political context, political parties still arrange political rallies before elections and have not moved the discussions solely to online platforms, many parties have not set up a virtual meeting space, they still gather in person and sing songs of the struggle.

The intentions of Project Isizwe as the flagship wifi rollout project in South Africa for example, include the enablement for people to participate in public debate. With the aim to enable people to be proactive in discussions which may influence their wellbeing. In support of Gagliardone (2014), Tapia and Ortiz (2008) Heeks' (2002) views on

[17] Connecting with government on social media- The South African government departments have twitter and facebook such as the Department of Home Affairs. Some Ministers in also utilise their social media platforms to address the public on matters the wish to raise such as crime, delays in the service delivery amongst other matters.

the incongruity on the expectations of what ICT is able to achieve and what materialises. The findings suggests that one can argue that the City of Joburg's Soweto users are less inclined to use the internet for public debate on common citizenry issues for example as many use the internet for school and entertainment purposes.

Free internet and participation

49% of respondents are of the view that the free wifi has enabled them to gain knowledge and information on issues which may possibly impact their livelihood as citizens. For example, the community members access SA and international current affairs sites. The community members feel empowered by the information they obtain using the free wifi to participate in debates that have an impact on their livelihood as citizens. However, not many community members feel this way and not many participate in political discussions. There is a larger number of community members who do not feel empowered to act and bring attention to issues that impact their livelihood than those that do.

Some community members do not access information that empowers them to participate in the political debates and issues which could have an impact on their livelihood. According to van Deursen *et al*. (2015) internet use is inclined to confer greater benefits to internet users in the aspects of life where the user has significant resources at his or her command. For an example, people who access the internet to catch-up on the latest events and game scores, these people have an interest in sports and merely having free internet will not facilitate migration towards preference change their preference to political information. The users solicit content that further enables them to further their offline interests.

Communication with government officials

The community members who attempt to engage with government officials seek to see the government successfully delivery basic services. Local government has not been hailed by the community for doing a good job in communicating basic service interruptions with the

communicating members. The prevalent issue of water service interruptions and electricity cuts by the country's main electricity provider, Eskom are the centre of the community's disgruntlement with the local government officials. Other matters that are of concern to the community is that of poor healthcare services offered by local health care service centres, the overcrowding in the community which the community is of the view that it has led to a higher crime rate and pollution. This has led community members to believe the government is failing in delivering services to them. The community is of the view that government needs to engage them and communicate better, as this would enable them to plan for periods where services would be interrupted. This is also the case with the free wifi provider, as community members argue that the wifi services are often interrupted without any prior notice from the city and its service provider, even to the extent that wifi connections at wifi zones are permanently cut off without any communication or notification to the users. This often leaves the community in bereft of knowledge as to why the wifi services are terminated or interrupted. Community members speculate for example that perhaps the wifi service has been terminated because users have had devices taken away at wifi zones as crime is prevalent in the community. Crime has re-emerged in many of the responses as a key factor limiting the public from living their lives fully and gaining access to free wifi, many of the users highlighted that it is often a challenge to visit the wifi zones as they fear having their devices taken from them, or being harmed. Community members have highlighted that they raise the issue of crime at all interactions with the relevant officials.

Social ills are also a source of debate. Crime appears to be the symptom of many issues faced by the community. The community members are faced with unemployment, teenage pregnancy, drug abuse and human trafficking amongst other issues. The community (81% of respondents) is of the view that free wifi aids them to gain information. However more targeted education programmes combined with free wifi access are seen as tools that can assist the community in combating these social ills.

Some of the wifi users indicated that more education can assist the community members in accessing the relevant information that could help them better themselves, for example many of the community members through both the survey and field notes indicated that the adult content sites must be blocked as they are not doing anything to help the community. The community fears that young people are accessing age inappropriate content; this is indicated through the coded themes “Age appropriate content” question 33 of the survey. It is noted by community members that children below the age of 18 years are accessing the free wifi to view porn sites and this does not help these young people or equip them in acquiring skills that they need to better their lives and to become meaningful contributors to the country’s economy as well as changing their family’s narratives. It could in fact be contributing to the crime in the community.

Gender related issues are also a burning debate. It is evident from the feedback provided that community members require the government to pay attention to the crime in the community, even more so gender based violence. The number of female respondents (27%) wifi users also highlight that women in the community are not as free and comfortable to visit the free wifi zones at their convenience. The observation made by the research also alludes to this, as often there was a clear discrepancy in the number of women at the wifi zone, versus their male counterparts, women did not seem to stay for long at the wifi zones, women often kept to themselves while accessing the free wifi and some women came with other women. It was not often that women who came to the wifi zones by themselves and if they did, many would not stay longer than an hour. Female wifi users were observed by the researcher as putting up barriers, both physical and sociological, not to be interrupted or spoken to by other wifi users (Hampton and Gupta, 2008). Therefore what the community talks about and the observations suggest that government needs to find a way of making women feel safer in this community.

The community members also engage on their online safety this being indicated in the coded themes developed in question 33 of the survey. Respondents have indicated that there are numerous online job scams. Due the fact the community members are desperate for work they become vulnerable to online job scams targeted at extorting money out of the job seekers. For example there are adverts that are forwarded as chain messages [18] that are received from a trusted source (such as a company's Human Resource manager) encouraging the user to pay s specified amount to someone in exchange for a job. The community members have indicated that education on using the internet safely without putting themselves at risk to cyber scams and other online crimes is vital. Discussions are taking place on how community members can identify and avoid job scam adverts.

Concluding the discussion on the issues that the community has brought attention to is the community's usage of wifi to discuss the current economic climate, including the decline of the South African currency against currencies such as the American Dollar. The community also discusses the cost of data and argue that the cellphone networks charge exorbitantly for data costs thus creating a challenge for the community members as the unemployed battle to afford data.

Users' safety and stigmatisation inhibitors to participation

For many wifi users walking to the free wifi zones and spending time at the wifi zones could mean compromising their safety and being mugged. The wifi users perceive themselves as vulnerable to crime during the access sessions and while making their way to the various wifi zones (only 49% of respondents walk less than a kilometre, while the rest need to walk about 5 kilometres or more). Certain users have suggested they are only able to access the free wifi zone during the day (normally between 16:00 - 17:00 hours) when there are many people at the wifi

[18] These are messages that encourage the receiver to redistribute the message to other users.

zone and the sun is still out for them to walk back home safely. The users perceive themselves to be targets of those wishing to rob them of their devices. The women fear that they could be raped and subjected to gender based violence when walking to the free wifi zones. The findings suggest that the ability to engage in inclusive public debate is limited and therefore voice is limited because of gender based violence, time (working hours) and crime.

Many of the wifi users have recommended that the government either provide them with cellphone data vouchers, install wifi points on every street corner or even in every household. If the intention is indeed to help communities to be connected, perhaps access should not be confined to a particular location.

Some community members have indicated that spending time at the free wifi zones creates the perception that they are loafers. This leads to users not fully enjoying spending time at the wifi zones, even if it is to look for work. The wifi sites mainly accessed by wifi users are in synergy with those indicated in De Laronelle (2012) as the top five reasons why people use the internet are to access information, to socialise, for study purposes, and to do their work or business and to seek employment opportunities.

The wifi zones and the connectivity provided by the city can be classified as a partial failure. There are notable undesired outcomes, as per the three categories one can employ in categorising technology (Heeks, 2002). These undesired outcomes can be grouped as the safety of wifi users, both physical and online. The users compromise their safety online by for example accessing their online banking through the free wifi and exposing themselves to online job scams. Users have indicated that there is a need for user education in order for users to utilise the internet in a manner that doesn't compromise their safety. One can also highlight limited thinking when the wifi zones were identified for an example there is no electricity or plug points at the wifi zones, users need to either

bring cellphone power bank or leave the wifi zones when their batteries are depleted, this means that if a user was engaging in meaningful discussion, they would have to leave the wifi zone without having heard the other party's views or giving their views on a particular discussion.

Research Sub question 2: Has free wifi availability enabled individuals in the community access to information that empowers them to engage in public debate?

There are some community members who are actively soliciting for content that enables them to know what is happening in their community, the country and globally. These community members are interested in local and international political news content. Important to highlight is that community members perceive that the information that they are accessing through the free internet has been able to help them formulate opinions on topical issues (65% of users surveyed).This suggests that the wifi is beneficial to the enablement of the community's voice.

Human rights are critical in a democracy, even more critical is that citizens are knowledgeable on their rights and how to ensure that they are respected and protected. Key to this study is the right to freedom of speech. According to the feedback received it can be noted that the community members have been able to gain more information and learn more about their right to freedom of speech. When it came to human rights, this study has revealed that many of the respondents did take their rights seriously and are conscious not to violate the rights of others in realising their own rights. What is prevalent is that the respondents are not absolutely convinced that there is a correlation between knowing more about your rights and your ability to realise these rights. A number of respondents alluded to the right to housing and healthcare, yet many are battling to access both these rights, as well as the level to which those who are not marginalised are able to access these rights, therefore they question their right to equality. The respondents indicated that they went on to realise their rights by respecting the rights of others. The

respondents are also able to identify when their rights are not met by the government and those in power. The community members use the information and knowledge at their disposal to educate those who are less informed about their rights as citizens; for self-expression and communicating with the government on their needs as citizens; to access information and education to improve their quality of life are other ways through which the community has been able to realise their rights.

Access to information is critical to participation. The internet has been able to empower those who wish to engage in discussions with the government to be able to engage if provided the opportunity, by providing them with the information gateways[19]. However, as many community members have alluded, more education on using the internet effectively is necessary. Community members need to be able to access the information that is relevant to the discussion they wish to engage in. As though foreseeing some concerns with the participation ability of the marginalised into the future, Arnstein (1969) cited important roadblocks for achieving genuine levels of participation, on the side of the marginalised. These include the insufficiency of the marginalised community's political socioeconomic knowledgebase, the challenge of having to organise a representative, as well as accountable citizen group's ineffectiveness, division, and distrust. These roadblocks can be linked to access to information as the respondents had indicated that they access information which empowers them. However the details of the type of information they access with the free wifi creates a roadblock to participation, as the percentage of users who access political content and news (local and international) is insufficient to make their participation meaningful, as not all those who access that type of content are also willing to participate in citizen groups and thereby impacting on the number of community members who are active citizens. Project Isizwe has cited increased levels of information in the community as the benefit

[19] By information gateways I refer to internet sites such as google, where users could research information and learn about a particular topic of interest.

of participation, yet community members are battling to receive information from the city on critical issues such as electricity and water service interruptions. This is indicative that the levels of participation are not at a desirable level to enable crucial information propagation. The gaps identified by Arnstein (1969) as roadblocks can be bridged through the opportunities presented by C4D theory according OneWorld Network (2004) as it is noted that C4D has an impact on voice due to its ability to terminate isolation, reach (policy makers, media and other stakeholders), enable cultural expression and enable solidarity, thereby accomplishing the main aim of C4D for people to communicate for themselves about themselves.

When looking at the content accessed by community members it is vital to indicate that they are accessing information that contributes to their self-expression and communicating with the government on needs as citizens. Although it is not a large number (40%) there are community members who access information that empowers them to engage in political public debate.

To conclude on the information aspect of the objectives of the research, it is vital that community members should be encouraged to participate in public discourse. The community does require further information on the relevant channels and stakeholders to engage on particular issues, such as if there is no water in the community who exactly should be contacted, as many service delivery issues have been blanketed under government failure for example. However the community members did not provide an indication that they are able to distinguish the role-players in local government. This implies that the users may be unable to engage with the relevant stakeholders in government, who should be able to make a difference on the current status of affairs.

Research Sub question 3: Has free wifi allowed the community to make their needs publically known?

The responses received are indicative that there are community members who feel empowered by the free access to the internet to contact their local government (27% of users). However there are still users who do not feel empowered (13% of users) which is an undesirable outcome for participation, Schlozman *et al*. (2011) have brought to the discourse of internet and voice the view that through the internet ordinary citizens are able to come together and engage on issues impacting on their livelihood. The community that understands the relevant government offices to contact is able to reach these offices without has to go through interactions with public officials to facilitate political participation and to demand social services through the internet.

The community appears to prefer social media as a popular tool through which those who wish to make their views known to the government engage (29% of respondents). The respondents are of the view that social media is more accessible, hence it is their communication tool of choice.

Kumar (2011) alluded that in order for development communication to manifest, the communication approach should be human and localised. Instead of it being intangible and at a high level; the communication links, such as media should be trustworthy and finally, communication should be accessible to all. Some community members (11% of users) consider strike action as necessary in order to gain media attention. The community members prefer to phone in to the radio or television station (16% of users) and also comment on news sites (10% of users). Nonetheless many respondents (66%) indicated that they have not yet been able to reach the media through their usage of the free internet. Those who have been successful in engaging the media have indicated that they have contacted the media on the community's struggle to gain media attention. The community has brought attention to the crime experienced daily (often manifested through robberies and gender based

violence). They have also brought attention to the lack of development in the community, the lack of basic services in the community, the strikes of Pickitup (garbage collection services) employees and how it impacts on pollution in the community and ultimately their health, the strain on free healthcare facilities, government's promise to deliver free housing, and the role of the church in the community in helping community members participate in community charity events, mainly to help other community members is need. OneWorld Network (2004) have provided insights that communication for development should not at its inception be mediated, translated or editorialised by external parties. Other parties only serve the redistribution purpose, therefore this implies that the role of the media should not be to serve as a linkage for communication between the community and government officials, the two parties should be able communicate amongst themselves and make public what they see as necessary to redistribute.

Livingstone and Lunt (2013) have noted citizen participation has a key role in legitimising a democracy, therefore it is important for community members to be empowered so that they can be active citizens. A large number (53%) of the community members do not perceive that free access to the internet has helped them to interact with each other about issues of common concern, according to the responses received. Those who have been enabled by the free wifi availability communicate about social ills, failure of government, entertainment and gender related issues. The discussions amongst community members occur in different forms, some of these discussions occur on social media and some of these discussion occur in person during the users free internet connection periods at the wifi zones. These findings suggest that community members are aligned when it comes to the sort of behaviours and challenges they would like to see the government addressing, their attempts to come together to reach out to the media and discuss these platforms which they believe will see their attempts to reach out to government officials become successful.

Research Sub-question 4: Has free wifi allowed the community to receive feedback from local government?

There are some community members (34%) who have, in certain instances, been able to receive feedback from the local government through the aid of the free wifi.

The amount of feedback and the level at which it is received is low as there are many respondents who do not find the view that they have been able to receive feedback from their local government and the prevalent social ills that require immediate government attention.
Community members indicated that the level of "publicness" when communicating with the local government afforded by social media platforms yielded feedback from the government. This implies that there are many instances where the community has battled to obtain feedback in their attempts to engage government officials through "private" one-on-one platforms. One could deduce that the community members who are less inclined to use social media as a public platform are more likely to get frustrated with government's lack of responsiveness and feedback. The current state of the media environment plays a role in both discouraging or stimulating dialogue and processes of empowerment (Tufte and Mafelopulos, 2009). Voice requires recognition (Tacchi, 2012) and if those who are politically active and who are being heard do not represent the view of the majority, it is likely that political voice inequities could manifest (Claasson and Nicholson, 2013). The notion of political voice inequalities is reflected in the NDP. The aspiration of the ICT developments are also reflected as having the ambition to connect public administration and the active citizen. Having cited the potential of voice inequalities, many of the respondents believe that their efforts to reach out to government are not limited to the availability of free internet access. Some community members are also willing to utilise their network data to communicate with the government. Government needs to play its part, as sufficient feedback from government is critical, community members ought to able to engage directly with their

government according to the principles of C4D. What is evident is that when community members are unable to attain feedback from the government they rely on the media to be the mediator and aid in echoing their issues to government officials and helping them in obtaining feedback from the local government.

10. CONCLUSIONS

The findings suggest that the free public internet has not noticeably helped community members who were excluded from the internet to engage meaningfully online with respect to their well-being. People who lack the “know-how” have experienced exclusion from certain debates due to the shift of some discussions to online platforms. Through the findings it is suggested that the voices of those who are willing to participate in face-to-face platforms may be lost in the haste to move political discussions to online platforms due to their inability to utilise the internet. One can cite many reasons why the free wifi has not yet been able to manifest as a meaningful public sphere.

Many authors, amongst whom are Tapia and Ortiz have warned against the assumption that the mere provision of free internet access to the disadvantaged will automatically yield active citizens and political participation. Education and a lack of economic stability are cited as some of the factors discouraging inclusion. The community of Soweto is not any different, unemployment and lack of sufficient knowledge to use the internet effectively to further democracy through participation are prevalent factors assisting in fostering refeudalisation of the South African public sphere. The internet is notorious for fueling offline habits (Schlozman et al, 2011 and Polat, 2005), the findings have suggested that users access the internet content that is related to their interests such as educational information and entertainment.

The theoretical propositions of the public sphere underscore that all citizens should have access to public debate spaces, there should be no influence from the state, it should enable the formation of public opinion, citizens should take part in discussions around matters of general interest, social status is not considered and lastly it is not a market place (Habermas, 1989). From these propositions, one can argue that the free wifi access has been unsuccessful in empowering the

community through the access to the internet. The findings of this research have brought attention to issues such as exclusion due to disability, age, gender, immobility and health as reasons some of the community members are unable to access the free wifi. The findings have suggested that women are uncomfortable at the free wifi zones, they normally spend time at the wifi zones when in the company of other females or males. It is important to note that there are however, isolated incidents of women coming to spend time at the wifi zones by themselves. The research has also brought attention to the exclusion of people with disabilities. During the time the researcher spent at the wifi zones there were no people with obvious disabilities. The wifi zones are not clearly marked to indicate that there is internet access available. The community members have highlighted that they found out by word of mouth through fellow community members that there is free wifi at a certain place.

Hampton and Gupta (2008) have suggested that free internet access providers sometimes create discomfort for wifi users by for example reducing the speed of the internet. The findings suggest that the City's internet provider could possibly be applying a similar tactic as the wifi users indicated that during peak periods at the wifi zones the connectivity is slower and thereby discourages usage. The City should consider investigating the source of the inconvenience, whether its service provider is limiting wifi by decreasing speed or whether the slowness is simply due to high usage, as the free wifi should be available to citizens at all times. There are also no plug points and very few park benches, if any, often people have to stand while accessing the wifi (images of the wifi zones been provided in the field notes, Annexure B, to provide a visual context for readers) and those without sufficient battery life need to leave the wifi zones to charge their devices if they don't have alternative devices.

Critics have shared views that citizens who use the internet socially and economically are more empowered to use it to obtain further government

services, than those lacking the skills to pair with the access. Through the findings it is suggested that in the case of the community of Soweto and the free wifi roll-out it is perhaps too soon to expect to see voice-enabling access patterns. One can only hope that in time the community's skills will be harnessed and thereby resulting in community members successfully obtaining feedback from the local government through their efficient use of the internet. Socioeconomic status in the marginalised community is perceived as relevant to voice. Some of the community members are failing to yield voice-enabling outcomes in the community researched. According to Schlozman *et al.* (2011) socioeconomic status has a role in one's inclination to use time on the internet for political activity. The community members have highlighted that they often receive push messages from adult entertainment providers. The community is condemning the government for allowing such advertisers to acquire advertising space. Another example that can be cited is that usually when the users access current affairs sites such as news24 the sites have advertising content, the users are therefore exposed to content of organisations who have been able secure prime space on the site, this is a small scale contribution to the refeudalisation of the public sphere as predicted by Habermas. Advertising on the free wifi page might lead the users to the advertiser's websites and steer the focus of community members away from learning more about issues which may impact on their wellbeing as citizens.

The second theoretical reference of the study are the participation theories and the propositions thereof. The participation theories are embedded in the belief that communication platforms should be created to enable individuals and groups to exchange views and influence decision making to uphold democratic processes. The free wifi has, to a minor extent, enabled community members to participate in public debate. It is evident that many of the users are not adopting the platform to debate matters of common citizenry concern. The users are utilising internet access to further their offline interests such as entertainment sites, sports and lifestyle interests. In order for the public wifi to yield

citizen participation and development of citizens it is vital that the development agents such as the City of Johannesburg involve the citizens from the beginning of the projects and/or programmes. This will aid in firstly educating the citizens on the power of the communication technologies such as the internet, understanding what their needs are (define their own development) and how internet access can enable them to achieve their goal and objectives for development. The status quo signifies that the community knows that they have been granted free internet access. Who provides the free wifi and why is unclear. The community members therefore are lacking the bigger picture as articulated by Project Isizwe, BrightWave and the aspirations of the City of Johannesburg. This presents a possible missing rung under non-participation on Arnstein's ladder of participation, as this total lack of information cannot be accounted for in any of the current rungs.

The third and last theoretical framework considered in this study is that of communication for development. The theory promotes participation as a drive for social change and advocates of C4D argue that it aims to strengthen dialogue with the stakeholders of a development project. C4D inspires for sustainable impact, communication originates from the bottom and is inclusive, while maintaining a sensitivity for the local community's culture. According to the principles of the C4D theory people need to have the capacity to tap into the communication tools which are within their reach in order to be seen and heard. The reluctance of the citizens to contact the media and some, government officials, indicates that there are many community members who are not yet equipped and/or empowered to reach the media and local government, they thereby still lack voice. Amongst the findings of the research, it is suggested that largely the community members were not involved in the delivery of the free wifi service, many of the community members lack the know-how and skills to utilise the service to further their development. The technology has not sparked the formation of a better public sphere that is inclusive to all. Citizens still do not have sufficient

skills to reach government officials and media without engaging in public protest and feedback from the government remains limited.

The findings further suggest that the implementation of new communication technology and access to the new technology should be rolled out in a user centric manner. Research into the crime rate in an economically marginalised community, before and after the municipal wifi roll-out is worthwhile, where municipal wifi is rolled out in the manner of central points of access, as it could aid in proposing alternatives ways of rolling-out free wifi in such communities. The level of concern with crime exuded by the community members has also raised alarm regarding the impact of the wifi zones to the crime rate in the community, if any. As it may impact negatively on participation, discouraging it, instead of encouraging it. Through the findings it is also suggested that inquiry into the local government initiated efforts to engage with community members could aid in understating whether the local government officials are open for discussions or whether the community are the only stakeholder pursuing communication.

The free wifi provided by the City of Johannesburg has the ability to assist in providing citizens with voice. However more work is required from both parties, the City ought to be willing to learn about what the best solution to provide free internet for residents would be (a solution must be co-authored). Residents have highlighted that they have to leave their homes in order to access the wifi and previous research has indicated that accessing the internet at home remains the best solution. The community members should be willing to be open, patient to receive feedback and trust the government in their engagements, with the understanding that solutions can be chiselled through the medium of rational debate, the government must be honest, not withhold information from the community in order to manage citizens' expectations. It is evident that many factors come into play in the real world and more work still needs to be done by the government and

community in order to reach a point where the community truly have voice and the community can achieve state of true development.

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Appendix A: Research Questionnaire

Survey questionnaire

***Statement of consent**: By completing this questionnaire, you are consenting that the feedback herein can be disclosed in the findings of the research.*

Place:

Age: _____

Gender: Male Female Other

Race:

Are you a resident of Soweto?

- Yes
- No

Is this the nearest wifi connection zone to where you stay?

- Yes
- No

How far is it from your home?

- About 1km
- About 5km
- 5- 10km
- 10 -15km
- More than 15km

How often do you go onto the internet?

- Every 15 minutes
- Every 30 minutes
- Every hour
- Once a day
- Once a week

How often do you go on the internet using the city's free wifi?

- More than once a day
- Once a day
- Once every couple of days

- Once a week
- Rarely

Where else do you access the internet?

- Through a connection at home
- Cellphone network data
- Work wifi
- No other access place of access
- Other, such as at the shops, hair salon, the gym, church (please specify)

Where do you access the internet most frequently?

- Through a connection at home
- Cellphone network data
- Work wifi
- City free wifi
- Other, such as at the shops, hair salon, the gym, church (please specify)

Please list the top three sites you access the most (in no particular order).

To what extent do you think that free wifi has enabled you to learn about important issues to your community?

- Very much
- Somewhat
- Don't know
- Very Little
- Not at All

Do you participate in debates on or comment on interactive platforms (such as online news sites or twitter)?

- Yes
- No

If so, on which platforms?

- Social media (Facebook, Twitter)
- Online comments (such news articles websites, on government department websites)
- Sending an email to a newspaper
- SMS a radio or TV station
- Phone a radio using internet voice calling (using VOIP)
- Debate on an email list
- Debate on a WhatsApp group
- Other (please specify)

What sort of debates have you participated in the last month?

- Political situation in South Africa
- Global politics
- Sport
- Entertainment
- Personal finances
- Gender issues
- Local government service delivery
- Other (such as music, best diets for summer, please specify)

In your view has free wifi led to access to participation on issues related to the community?

- Very much

- Somewhat
- Don’t know
- Very Little
- Not at All

Have you used the information obtained through free wifi internet to bring focus to issues in your own community?

- Yes
- No

If yes, what issues have you brought attention to?

Do you use the free wifi to access information that empowers you?

- Yes
- No

What type of information do you access with the free wifi?

- Local News - What is happening in your community
- International News - What is happening in the world (other countries and continents)
- Politics – Local
- Politics – International
- Entertainment (movies, music, games)
- Educational
- Employment/job seekers sites
- Social media content
- Personal finance
- Local government/Government services
- If local government service, what services?

Other (such as health and fitness please specify)

Has free wifi access to information enabled you to formulate opinions on topical issues?

Very much

Somewhat

Don't know

Very Little

Not at All

Has the information that you accessed online made you more aware of your rights?

Please rate the level of awareness for the rights below:

The right to *freedom of expression*

Very much

Somewhat

Don't know

Very Little

Not at All

The right to *freedom of trade, occupation and profession*

Very much

Somewhat

Don't know

Very Little

Not at All

The right to *equality*

- Very much
- Somewhat
- Don't know
- Very Little
- Not at All

The right to *housing*

- Very much
- Somewhat
- Don't know
- Very Little
- Not at All

The right to *health care, food, water and social security*

- Very much
- Somewhat
- Don't know
- Very Little
- Not at All

Do you feel empowered by this information to act to realise your rights?

- Yes
- No

If yes how are you going about realising your rights?

Has free wifi empowered you on ways to contact your local government about your needs as a citizen?

- Very much
- Somewhat
- Don't know
- Very Little
- Not at All

Have you expressed your views to your local government via the channels below?

- Social media (Facebook, Twitter)
- Online comments
- Sending an email to a newspaper
- SMS a radio or TV station
- Phone a radio using internet voice calling (using VOIP)
- Debate on an email list
- Debate on a Whatsapp group
- Face to face contact
- Other (please specify)

What do you think is the best way to get media attention regarding community-related issues?

- Commenting on news sites
- Phoning into a radio or TV station
- SMS to a radio station
- Participating on polls through official government websites
- Emailing to the community media
- Commenting on social media platforms

- Strike
- Violence
- Commenting on official government sites
- Other (please specify)

Is there an instance you can relate where you have managed to gain media attention for an issue that is more important to you using the city's fee wifi?

- Yes
- No

If yes, please provide details

What factors influenced your choice of medium (such as facebook) to express your views to your local government?

- Have used it successfully before
- Easily accessible
- Affordable
- More Impactful
- Other (please specify)

Has the wifi enabled your community to interact with each other about issues of common concern?

- Yes
- No

If yes, how do you interact?

- Social media (Facebook, Twitter)

- Online comments
- Sending an email to a newspaper
- SMS a radio or TV station
- Phone a radio using internet voice calling (using VOIP)
- Debate on an email list
- Debate on a WhatsApp group
- Face to face while at the free wifi zone
- Other (please specify)

If yes, what do you communicate about?

Has free wifi enabled you to receive feedback from your local government regarding issues that relate to your needs?

- Very much
- Somewhat
- Don't know
- Very Little
- Not at All

Has feedback been received to your comments in relation to your wellbeing as a citizen from your local government (such as crime)?

- Very much
- Somewhat
- Don't know
- Very Little
- Not at All

Do you think the free wifi service can be improved?

- Yes
- No

If yes, what do you recommend on how to improve the free wifi services in Soweto

In what ways has the free wifi service had a positive impact on your life?

If you did not have access to the city's free wifi, would you use your personal internet data bundles to participate in media discussions regarding community/citizenry related issues?

- Very much
- Somewhat
- Don't know
- Very Little
- Not at All

Appendix B: Field notes

Wifi Zone descriptions

First Wifi hotspot – Protea Point

This wifi hotspot is in shopping centre. Below is an aerial view of the shopping centre, it allows the reader a better understanding of how the shopping centre is structured and where the users stand or sit in order to access the wifi at this hotspot. The initial image from google maps has been edited to allow for a clearer description of the setting. The three main areas in the shopping featured in the field notes:

Car Wash

The car wash is close to the Brightwave shop. As indicated in section 1 (introduction of the research report) BightWave is the wifi service provide to the City of Joburg. There are usually many users seated on the grass patch elevated grass area close to the cash wash picket fence. You find users of different ages, approximately from 13 to 40 years here.

Shipment container

The shipment container is a customised shipment container, it looks like it was created for the purpose of utilising it as office space. It is vacant. However many wifi users, mainly males, lean against the container or sit and enjoy the shade it provides while accessing the wifi.

Parking lot blue pot plant/pillars

These pot plants are mainly to separate the parking bays. However some user lean against these and one will also find users, often males sitting at the bottom of these.

An aerial view of the shopping centre

Car wash	Grass close to Brightwave	Shipment Container
 **Caption:** The users usually sit under close to the car wash and connect to the wifi	  **Caption:** Wifi users sit and access wifi. User one sits by the blue flower pot (encircled), seeking shade from the sun. User	 **Caption:** Wifi users sit against the shipment container. The users agreed to complete the question and they face down to enable the researcher to take the photo without showing their faces.

	two sits by the grass accesses wifi.	 **Grass close to the KFC next to the shipment container** **Caption:** Scholars on the right sit under the shade to access free wifi from their cellphones. While other community members sit on the grass to access the free wifi from their cellphones, tablets and laptops

Second Wifi hotspot – Regina Mundi Church

This wifi hotspot is situated at the Regina Mundi Catholic Church. To give the reader a better understanding of what the wifi hotspot area is like from a user perspective. The below aerial view and images are provided to aid the reader. Similar to the image of the shopping centre above, the aerial view has been marked to provide the users with an understanding of where the users are normally situated when accessing the wifi. The three main areas in the shopping featured in the field notes are elaborated on below. The church is close to Thokoza Park (the quiet side), the benefit of this is that the park has lavatories open for public usage free of charge, this is means that the users are able to relieve themselves without having to go their homes during the internet sessions.

Picket fence

Users stand and access the wifi, many internet users lean against the picket fence. There are no comfortable chairs or park benches for the user to sit while they enjoy access to the internet. Users often resort to one of the three spaces noted.

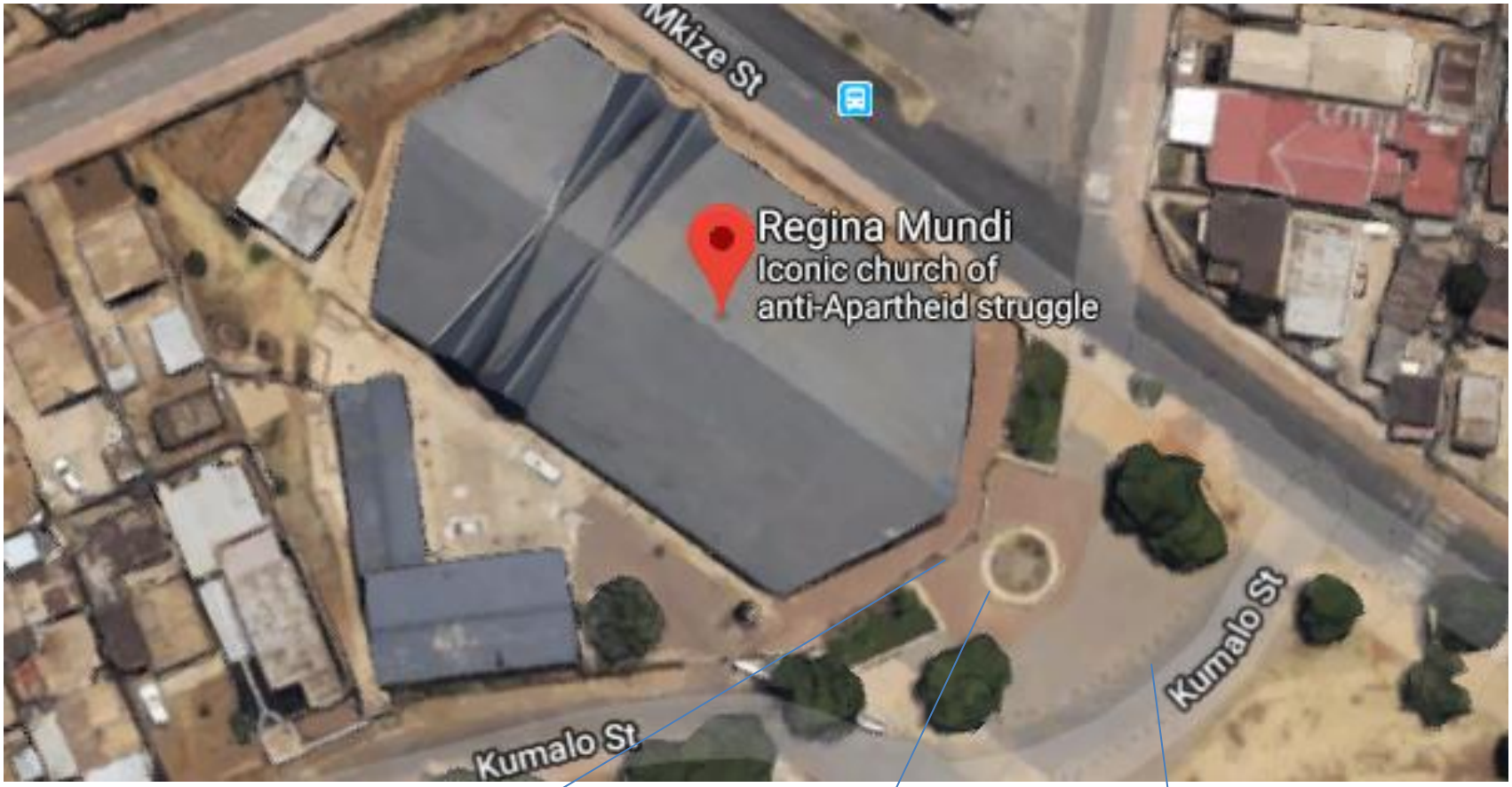
Flower garden /patch encircled patch

This space is elevated, so it may be perceived as more comfortable to seat to the cordoned flower patch as opposed to standing, especially for those users who intend to stay the wifi zone long.

Concrete pedestals

Many user sit by these pedestals and access wifi. Often you find males sitting on these. Users often stand after a long period of sitting and then sit again and continue to access the wifi.

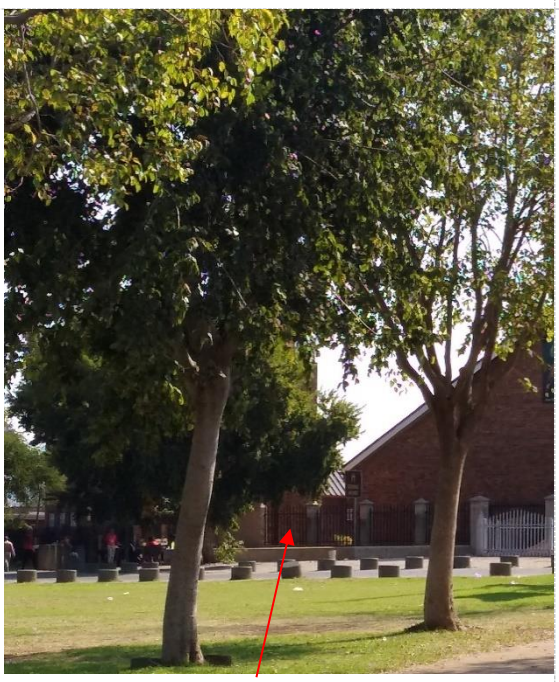
An aerial view of the Regina Mundi Church wifi spot area



Picket fence

Flower/garden patch encircled patch

Concrete pedestals

Picket fence	Flower/garden patch encircled patch	Concrete pedestals
  **Caption:** Users lean against the picket fence as they access the wifi.	 **Caption:** Some of the wifi users sit and access	  **Caption:** The concrete pedestals are popular amongst the wifi users. They sit against the sun and use the free wifi.

Third wifi Zone – Thokoza Park

Thokoza Park is one of the Parks in Soweto, the park is sizable and one finds community members using the park for various reasons such as music groups shooting music videos, kids playing games, parking their cars in order to catch the Rea Vaya bus amongst other things. The park has two sides the side where free wifi can be accessed and the side without free wifi. The side without the free wifi is largely used for entertainment purposes. The side with the wifi, one often finds wifi users accessing the internet. The park has lavatories open for public usage free of charge, this is means that the users are able to relieve themselves without having to go their homes during the wifi usage session as noted above. The three main areas at the park featured in the field notes.

Area close to the parking lot and the Rea Vaya bus stop

This is areas allows for users to sit by their cars or the curbs while accessing the wifi. Some users bring blankets and sit in the grass.

Green bars (on the one side of the pathway)

Users sit on or lean against the bars while accessing the wifi. Some of the bars are in a shaded area where some users prefer to sit and access the wifi.

Quieter park grass section

On this side of the park there are fewer wifi uses. The users on this section of often access the wifi lying on the grass.

An aerial view of the Thokoza Park (the section with wifi only) wifi zone

Area close to the parking lot and the Rea Vaya bus stop	Green bars (on the one side of the pathway)	Quieter park grass section
 **Caption:** There are users who prefer to be close to the parking lot.	 **Caption:** The pathway where many users sit by the green bars and access the wifi.	 **Caption:** A wifi user lies on the grass under the tree accessing the wifi.

Day 1

Activity: Afternoon wifi users

Date: 08/05/2018 Wifi zone: Protea Point

The number of females identified at the hotspot: 7

People with obvious disabilities: 0

Weather: 21°/8°

Time	Behaviour	Action carried out at wifizone
13:00 – 17:00 Afternoon schedule	Arrival of two males wearing floppy hats and relaxed looking outfits (Approximately 19-21 of age)	Using cellphones to access data. Talking to each other, both looking at phones and performing some activities. They continue talking accessing the free wifi.
13:30	Arrival of school pupil in school uniform (two girls).	The pupil sit down and take out their cellphones and lunch boxes and share sandwiches. Playing loud music using a bluetooth speaker. They spend about 30 minutes and then leave they wifi zone.
13:40	First two males still sitting using cellphones	Male one takes out cigarette and the share and they share the smoke as they begin to walk away. Leaving the wifi zone.
14:00 - 17:00	Cohort of males arrive, lanky looking and aged between 18	Take out laptops from bags.

Time	Behaviour	Action carried out at wifizone
	and 24, have a jovial spirit about them. (4 people)	They discuss which movies they have and decide what to each download.
	Arrival of another male. Also looks around the same age group and the cohort mate they are joining	Another male joins them, takes out cellphones and converses with others while on a cellphone. They continue talking, busy on their gadgets; and now and then they laugh.
	Two males (from fist two) leave	They come back with a 2 litres cool drink, join two straw together and begin to sip and pass it amongst themselves. They continue working on their devices for two more hours and they all leave together, headed towards the same direction. They have spent approximately 4 hours at the wifi zone.
	A few other males arrive at the wifi zone. Many of them come solo and then greet the person next to them and then proceed to mind their own business. Male 1 is short, looks about 22 years of age, wears a 2 piece Kappa tracksuit	Male 1 sits on the grass, takes out his cellphone and uses his cellphone to access the wifi. After spending about an hour to 1h30 minutes and leaves the hotspot.

Time	Behaviour	Action carried out at wifizone
	Male 2 (32 years) is average height, very clean looking, wears a red cap with a grey t-shirt and white shorts.	He stands by the grass in the shade of the shipment container, as though he is careful not to dirty his white shorts. He accesses the wifi standing around the same spot. Playing snippets of music without earphones. He stayed the wifi zone for about 2 hours and then leaves the wifi zone.
16:00-17:00	Arrival of first female Wearing jeans and a casual t-shirt. The clothes are simple and don't really draw attention to her. She seems to fit in.	She sits on the edge of the car wash area picket fence, wearing earphones, appearing not wanting to be bothered, starts using her device. She sits for about an hour and then then starts walking.

Other observations:

1. There's no signage showing that is a City of Joburg wifi hotspot (only the Bright Wave sign outside the shop).
2. Manly young black males at the wifi hotspot, age group between 13– 37+-.
3. Few people are only on laptops, about 5 and about 36 on cellphones to access Bright Wave data.
4. There are school pupils still wearing uniform, in cohorts and carrying their school bags, using cellphone devices to access the internet.

5. When asking users to complete the questionnaire they complained about the week signal and asked if the research will help improve this prior to completing the questionnaire, if they agreed.
6. The user's noted that the often rather connect to the KFC's wifi in the same shopping centre, they argue that the KFC wifi is quicker during pick time at the wifi hotspot.
7. There was an interest in how the study will impact the current wifi, such as improvement of connectivity speed.
8. There were 7 females who visited the wifi zone, in the period spent at wifi hotspot.

Day 2

Date: 09/05/2018 Wifi zone: Protea Point

The number of females identified at the hotspot: 4

People with obvious disabilities: 0

Weather: 23° /11°

Time	Behaviour	Action carried out at wifizone
9:00 – 12:00 Morning until noon	3 people (not together) standing around, on their devices	The action is a bit slower than the previous day, people are streaming into the complex, but it seems manly to purchase groceries at the Pick n Pay supermarket and they don't stop to access the wifi. They are on their cellphones however it is not indicative of them accessing the free wifi.

Time	Behaviour	Action carried out at wifizone
	A female (19) comes and sits close to the picket fence by the car wash. Wears a long blue summer dress and flip-flops	She takes out her cellphone and starts using it to access the free wifi. The female sits by the elevated grass area by the carwash. She uses the wifi wearing her earphones, she begins looking into the phone and talking. She makes reference to leaving South Africa to study further in Denmark. She continues talking into her earphone piece and leaves the wifi zone about 30 minutes after her arrival.
	2 females (about 25 years of age or slightly younger), dressed in jeans, loose fitting tops and seem to be very confident	They sit on the opposite site of the picket fence and start to access the free wifi. They keep looking to the main entrance of the shopping centre. About 30 minutes later, another female joins them, she seems around the same age group. They have a discussion amongst themselves for about 2 minutes and start walking way.
	A cohort of males come to the hotspot and sit together	The cohort of males, about 4 of them from the previous day are at the wifi. They are joking loudly, laying music videos online. Discussing their views on the production of some of the music they are listening to. They seem very comfortable using bricks as mini stools and lean again a shipment container.
	There are still only about 8 people at the wifi hotspot	The cohort of males still appear to be having a good time in each other's company, access the internet. There only one other female at the hotspot and she sitting by the picket fence.

Other observations:

1. No people with obvious disabilities are at the wifi zone during the observation.
2. Hotspot slightly emptier than the day before. There are not as many people sitting around as the day before.
3. Shopping complex is busy with people coming and going.
4. There are new people to complete the survey.
5. One cohort of 4-5 males from previous day are again at the wifi hotspot, some of which are still wearing the same outfits from the day before, making it easier to identify them. They are using their laptops. I greet them and engage in small talk with them and they inform me that they are still students with various tertiary institutions. They mainly visit the free wifi zones to conduct research for their studies, log into social media platforms and for entertainment purposes, noting that it is cheaper for them to download movies than to go to the movie theatre.
6. The picket fence segment of the wifi hotspot seems to be more comfortable for the females, on both days all the females seem to sit by the wedge. It is alleviated meaning they don't have to bend too low when resting their feet.

Day 3

Date: 10/05/2018 Wifi zone: Ibhongo School and Regina Mundi Church

The number of females identified at the hotspot (Regina Mundi Church): 3

People with obvious disabilities: 0

Weather: 23° /12°

Time	Behaviour	Action carried out at wifizone
12:00 – 13:15	**Ibhongo School** Wifi hotspot empty	There is no wifi connection at Ibhongo School. Tried to connect to the wifi, there is no wifi to connect to. No-one at the wifi hotspot. After engaging with community members and obtaining confirmation from community members that there is no wifi connection the researcher moves on to the next wifi zone.
	Regina Mundi already has about 7 people (only males) some sitting on the concrete pedestals	The users are access the wifi using cellphones and one on a tablet. Two males move closer to the grass, a little farther away from the rest of the group. They smoke cannabis as they use the free wifi, and chat amongst themselves. The other males continue to sit by the pedestals.
	A female arrives. She is taller than the average women, she looks like she takes good care of herself and with long braids plaited to one side.	She sits alone on the pedestals and access the wifi through her cellphone. Now and then she pops her head up and looks around. She continues to sit by herself for a period of 2 hours and then begins to walk back to the same direction from where she came.
	School children arrive in a cohort	They sit closer to the church's picket fence, starring into their devices, they discuss music.

Time	Behaviour	Action carried out at wifizone
		They leave after an hour, each going to a different direction. Promising to see each other at school on the next day.
	A male (looks 32 or older) stands by the corner of the church. Dressed in white torn t-shirt and his hair looks untidy A female joins looks 37 or above, she is dressed in a black vest, black denim pants and black dusty sneakers	Takes phone out. One can hear voices talking as though is he watching something. The male is the joined by a female. They discuss movies and decide which movies the male needs to download, the female states that she cleaning space on her phone so that he can transfer movies to her. The call each other friend. They discuss that they need finish downloading the movies so they can go home and watch. They spend about 2 hours at the wifi hotspot, after which they leave together.

Other observations

Ibhongo School

12:00 -12:15

1. No signage showing that it is a wifi spot.
2. Hotspot empty.
3. The community is concerned about crime in the area.

4. Asked residents what happened (those passing by), the residents claimed there was a robbery and all the users' devices were taken at gun point by robbers prior to the hotspot closure.
5. Residents attribute the lack of wifi to the robbery.
6. Residents say the wifi hotspot was their livelihood as some were able to look for, conduct research for school work, look for funding for businesses and has now it has been taken away together with their devices. They are of the view that the government has to find alternative ways of rolling-out free wifi in the townships.

Regina Mundi church

12:30 -16:00

7. No signage showing that is wifi spot.
8. Wifi is near the Regina Mundi Church. There are female vendors, who sell arts and crafts to tourists visit the church.
9. It is a Christian Holiday, there are some young people at the park who have not gone to school, who have come to access the wifi.
10. Many people walking around and on their cellphones and tablets as they walk to various places.
11. Also more males than females, a ratio of 80% males and 20% females can be estimated.
12. Users sat on grass and park demarcating poles while accessing the wifi.
13. Adult users complain that the wifi access enables under age children to watch and download porn, the users would like to know if something can be done about this, such as block the porn sites.
14. Users complain that the wifi is often slow and cannot handle the demand.
15. No people with obvious disabilities are at the wifi zone.

Day 4

Date: 11/05/2018 Wifi zone: Regina Mundi Church

The number of females identified at the hotspot: 6

People with obvious disabilities: 0

Weather: 21° /13

Time	Behaviour	Action carried out at wifizone
09:00 – 12:00	Two young males (18-20) stand close to the church's picket fence and have their devices handy. The males are neatly dressed wearing sweat pants and warm looking sweaters.	They have their earphones on and stop to look as I walk around looking for people to complete the questionnaires. When approached the first male immediately agrees and says "this is my sort of thing. I use the wifi daily. I hope you are going to report that the young boys are using this for porn. It's a problem, many of them come here use the free wifi to watch porn. The porn adverts just pop-up and the boys click to watch. They have money to advertise and they government allows it, the government must at least block porn sites and bar them from advertising on their wifi." The second male also agree to complete the questionnaire. After completing the questionnaires they continue to use the free wifi.
	A female with a shopping bag stands on the grass, keeps	She take out her phone from her hand bag and puts on the bags on the grass and sits down close to the bags. She focus on her phone.

Time	Behaviour	Action carried out at wifizone
	looking around. Wearing a pink shirt and blue denim pants and white sneakers	It is unclear whether she is accessing the wifi. In about 20 minutes she picks up her bags and begins to make her way away from the free wifi zone.
	Male arrives, tall and looks about 33 wearing a red EFF t-shirt, blue denim and black sneakers	He sits on the steel bars, close to the pathway. Begins using the phone. It appears as though he is chatting he type and waits, and types and waits, for short time periods. The male is at the wifi zone for 30 minutes and begins to make is way through the pathway as though he is off to catch a taxi.
	Two males (they seem to be interested in the arts and like to fashionable, they have dreadlocks on their upper head and the sides are shaved) and three females (also wearing trendy clothes, crop tops and jeans and	They join the male sitting by the steel bars. They are talking. At first it is unclear what about. They also keep looking at their phones and laugh most of the time spent there. They start discussing #feesmustfall movement and how they are glad that the government took the concerns of young people seriously. They carry on for over 1:30 minutes. The males smoke cigarettes and throw the stubs on the ground around them. The girls discuss what they are looking at on one of their devices and leave after spending two hours at the wifi zone, discussing that they will they will have to meet at the "campus" tomorrow to discuss the group assignment they need to submit.

Time	Behaviour	Action carried out at wifizone
	platform wedge shoes)	
	Two people arrive wearing wits attire, hoods (branded), jeans and sneakers	They sit on the grass, they take out their phones and lunch boxes and beginning eating, not talking much. They are joined by two others, a male and a female, also wearing similar attire. The two females walk to the bathrooms. They are later, in about a 15 minute interval, by two more people, also a male and female dressed in similar attire to the rest. The each nibble on something they take out from the back packs. After 15 minutes a wits branded bus arrives and they get on the bus and the bus leaves.

Other observations

1. Five males who were at wifi spot openly stated that they were there to look for work, “it is hard to find work these days. Especially if you are uneducated like some of us” one male who looks about 31 indicated.
2. One male (20 years, age confirmed) stated that he is from the Eastern Cape and is there to look for an opportunity back home, as he missed being around his family and that he had to go to initiation school in July, so it will be best if could find a work afterwards, as he would be leaving his job in order to make it to the Eastern Cape in time to join the other guys who will journey with him and become “men”.

3. Those seeking to use the free wifi for school or job searches are of the view that it better to come to the wifi in the morning, they argue that it becomes slow in the evenings when there many users.

Day 5

Date: 12/05/2018 Wifi zone: Thokoza Park

The number of females identified at the hotspot: 6

People with obvious disabilities: 0

Weather: 20° /10°

Time	Behaviour	Action carried out at wifizone
12:00 – 18:00	There many people already siting on the grass	There are two females lying on a blanket using their phones. They see me walking past and enquire about my purpose for being there. I explain and they ask to assist and agree to complete the questionnaires and promise to tell other wifi users to come and complete the questionnaires. The elderly looking of the two (about 38 and above), confirms that she is the other females mother and that they often come here to enjoy the scenery together while accessing the wifi, stating that “kupholile” – it is serene- at the park.
	Both genders are well represented however, there are still more males than	Two females (aged between 29- 32), 4 males (aged between 27- 32), and sitting on the far side of the park of the park, sealed Savana cider bottles on the table. They ask me if I would like them to complete the questionnaires and state that that I should not worry they are not intoxicated. They have

Time	Behaviour	Action carried out at wifizone
	females accessing the wifi	just arrived and would like to assist with my studies. Looking through the questionnaire, they discuss amongst themselves that this is a topical issue and would "like to see the price of data fall". The debate whether "data is expensive because the government is expecting a lot from service providers in terms of the tax burden, or are South African service providers are just greedy". One of the males states that "it is better to come to the free wifi zone when I need to download big files for examples, if I did that with my own data it would finish before my next payday, which would mean I am not on wifi and other social media sites, that is not negotiable. I would rather walk here, even though it's also not entirely convenient." The group decides to stop talking arguing that "the sooner we finish, the sooner we can drink." They complete the questionnaires and wish me the best of luck, while using phones to stream hip hop music.
	Five males are together by one park bench (about 19-22 years) they are dressed in branded clothing, 3 wear Adidas sneaker and	They have a big bluetooth speaker on the ground, they are debating which songs to stream. They use a lot of colloquial words, such as "dope" and "lit". They talk about what they should do to celebrate the upcoming June 16, youth holiday. One of the suggests that they should buy alcohol and go seat at the Thokoza Park busy section instead of going out, as it would save them money.

Time	Behaviour	Action carried out at wifizone
	track suits, while the other two wear similar levi jeans with Nike sweaters	The males stay at the wifi until researcher leaves the wifi zone, over 3 hours after their arrival.
	Three males sit under a tree. They look about 36 years and older. One wears a golf t-shirt, formal pants and pair of sandals, the other male wears a matching black tracksuit with white sneakers and the third male wears a white cap, green shirt and with blue denim jeans.	They with a bottle of wine, rotating the glass and accessing the wifi on their phones. Talk about the increasing crime in the area, stating that everywhere you go you hear of stories of women being murdered, stating that “we want to see the government do more to fight crime.” They say that men are also tired of being painted with the same brush, not all men are rapists and murders. The male in a tracksuit states that he was not aware that there is wifi at the park, he just prefers to sit on this side of the park as it is quitter and enjoys being out of the house now and then, laughing as he asks if his friends were aware. The males stay at the wifi until researcher leaves the wifi zone, over 2 hours after their arrival.

Time	Behaviour	Action carried out at wifizone

Other observations

1. On Fridays as the day goes by there are people who bring alcohol to the park, they don't only come to access the wifi but also to socialise with friends, it would also appear that they don't come to the park for the wifi but to drink the wifi is a bonus.
2. The wifi can only be accessed closer to the Regina Mundi Church side of the park, the farther you go you lose signal.
3. There are many adults who bring children to the Park and watch them play. Sometimes while drinking alcohol.
4. Teenagers often are in cohorts and share devices.
5. The younger (18-22) females at the wifi hotspot state that they often have to come to the hotpots in pairs or cohorts as the guys pay them less attention when they are in groups.

Day 6

Date: 13/05/2018 Wifi zone: Thokoza Park

The number of females identified at the hotspot: 4

People with obvious disabilities: 0

Weather: 19° /8°

Time	Behaviour	Action carried out at wifizone
12:00 – 18:00	Mother and daughter from the previous day lay on the blanket using their phones to access the wifi.	They each are using their devices, they don't talk much to each other. They only seem to say a few words and then focus on their devices. They have a bag and lay on the grass mat they brought with. They had the same bag the previous day.
	Female 3 (19-25 years) in church attire (long dresses, with long sleeved, uniform blue and white white belts and doeks) stand	They are on their cellphone and keep looking in different directions. A cohort of 6 females dressed in similar attire (save for the doe) walk towards the women and they walk together. The put away their cellphones and they leave wifi area. They have only spent 15 to 20 minutes at the wifi zone.
	Two females (20-22 years) carrying back packs arrive Female one is dress in a jean dungaree and short sleeved top	They sit on the grass and one female takes out a book and their cellphones. They look at the phone and one keeps jotting down the book. They continue for an hour and they put away the book. They use their phones and then leave 15 minutes after putting way the book in the back pack. The sun is still shining when they leave at around 16:00 pm.

Time	Behaviour	Action carried out at wifizone
	and the second female wear jeans and a red short sleeved top.	
	Cohort of seven males. They seem young, 16-17 years, they each carrying skate boards. They are dressed in colourful very tight skinny pant and all stars. They are wearing tops with writing on, the most legible is the one written “YOLO”.	They sit on close to the park parking lot. They take out their phone, one takes a video while the other put on a show on their skate boards. Once they are done they discuss that they need to load it on facebook. They call themselves “Soweto skater boys”. They use a lot of colloquial words such as “dude” and “dwag”. They discuss that they need to look up videos online so that they can improve their routine for the next video the plan on recording. The males stay at the wifi until researcher leaves the wifi zone, over 4 hours after their arrival.
	Male (23), short spiky dreadlocks, dressed in long black	He greets and asks what I am doing at wifi zone. After I have explained the reason for my data collection he explained what he was doing at the wifi hotspot. “I am here to book a bus ticket, I will be going to Zimbabwe for a

Time	Behaviour	Action carried out at wifizone
	faded jeans, white t-shirt and black sneaker.	funeral, I got news of my grandfather's passing yesterday, I will be leaving for Zimbabwe on Tuesday." I offered my condolences and let him to proceed with his ticket booking.

Other observations

1. Very few of the females who have come to the wifi zone on this particular day have come on their own. They often have company.
2. The wifi spots offer a place where people who don't have work or are not studying can go can to during the day to kill time. One female said to me "I come here to catch a breeze. Not all of us are happy where we stay. So I come here to just unwind and forget about my problems, only for a little while."
3. The people at Thokoza Park seem to come from far, and not only come to the park for the wifi. They also seem not mind sitting on the far side where they don't catch the wifi.

Day 7

Date: 19/05/2018 Wifi zone: Protea Point

The number of females identified at the hotspot: 5

People with obvious disabilities: 0

Weather: 18° /9°

Time	Behaviour	Action carried out at wifizone
12:00 – 18:00	The complex seems to be abuzz. Many people leaving and coming in, cars driving in out. The three males seem about (27-30 years) arrive. They are looking relaxed in long sweat pants. The tallest in the group (average height for a South African, African male) is wearing grey sweat pants, a white t-shirt, black cap and black Vans sneakers; the other	There is a female looks (29 years) she standing by the car wash picket fence. She leans slightly to have sit on the area next to the fence. She is dressed in a pink long dress and black hoodie. She uses her cellphone to connect to the internet. She continues on her phone for 30 minutes, as soon as the three males sit next to her she put on her earphones, after having greeted them. The males talk amongst themselves. The tallest male walks the fish and chips shop in the complex, about 50 metres away, and he walks back empty handed. The male goes about back to the shop in 20 minutes, comes back with plastic bag and he the rest of the males leave the wifi zone. They have spent an estimated total of 30 minutes at the wifi zone.

Time	Behaviour	Action carried out at wifizone
	male also wears grey sweat pant, a grey top and red t-shirt with red sneakers; and the last male is wearing black sweat pants and a white top with a pair of black Vans sneakers, has spiky dreads and acne scars.	
	Male (22 years), dark, with floppy hat, blue jeans and yellow and red Shoprite t-shirt. Putting his back pack on the ground.	He sits on the edge of the grass and the takes out his laptop. He opens up the laptop and spends an hour starring at the laptop. The stands up, pick up his items from the ground, he goes nearer to the BrightWave shop, he sits on the floor outside the shop. He accesses the free wifi for about an hour, then he takes out a book, being copy something into the book from the laptop.

Time	Behaviour	Action carried out at wifizone
	Male cohort four males (17-19 years) arrive at the wifi hotspot. They are wearing matching school uniform, white long sleeved shirts, grey pants and back school shoes. Carrying school back packs	They sit on the grass, close to the KFC. On the grass, one male, short (below 1.5 metre height) could weigh over 80kgs takes out a laptop out of his school bag, they fiddle with the devices exchanging it amongst themselves. Eventually after they have each had a turn they put the laptop down and they sit as if they are watching something. They sit for about 30 minutes watching something on the screen, chuckling and laughing together. They again type and they watch something else, now their phone are out they are typing and using the wifi while watch the screen. After 30 minutes, one starts a conversation that they had come there to complete the varsity applications proposing that they should get to it, “my mom will start calling me if I am not home in the next hour” said the short chubby male. They agree to meet again tomorrow, mentioning him that they need to submit their university applications before the closing date.

Other observations

1. There has not been anyone sitting at this particular hotspot with alcohol. At the other two hot wifi zones, the researcher has observed many users sitting partaking in alcohol.

2. The researcher has not observed any of the wifi users smoking cannabis, at the other two wifi zones, the researcher has observed on many occasions users smoking while at the wifi hotspot accessing the internet.
3. The wifi zone is busier on a weekend than during the week.
4. Grade 12 pupils attend school on a Saturday and visit the wifi zone either before on their way from school or their way home.

Day 8

Date: 20/05/2018 Wifi zone: Protea Point

The number of females identified at the hotspot: 10

People with obvious disabilities: 0

Weather: 18° /7°

Time	Behaviour	Action carried out at wifizone
12:00 – 18:00	Male cohort four males (17-19 years) arrive from the previous day. Not wearing school uniform as per the	The male with the laptop yesterday is the only one carrying a back pack today. He takes out the laptop, keys in what look like a password, he passes it to the first person, who uses the laptop for about 30 minutes while the others are listening to music playing on one of the phones. They all use their cellphones. The one passes the phone to the other male, they rotate the laptop until the last male spends time on the laptop. The male who took the

Time	Behaviour	Action carried out at wifizone
	previous day, they are wearing blue jeans and t-shirts and sneakers.	laptop out of the backpack puts back and carries the back pack and they continue on their phones. A female, about 17years passes they all greet her and ask her to join them and she ignores them and keeps walking. They leave her and laugh. After spending about 3 hours at the wifi hotspot they leave. All males walking towards the same direction.
	A male (29 years) tall, wearing church attire, green all dress, with buttons in front and a white thick belt, sandals, carrying a walking stick is the form of the cross.	He stands at the wifi zone using is cellphone for about that 20 minutes. He leaves the wifi hotspot, putting his cellphone in his pocket, as he walks away. He spent 30 minutes at the wifi hotspot.
	Two males walking with a Bluetooth speaker arrive at the wifi zone. The one shorter than the	They sit close to the steel container, the male with the dreadlocks puts the speaker on the ground. They talk while using their phones. The male in the ANC t-shirt says to the other male his looking for a place to print t-shirt cheaper than the current place he is using, he sells the t-shits at an affordable price but the costs to produce the t-shirts are “increasing by the

Time	Behaviour	Action carried out at wifizone
	other male, has long dreadlocks and wears a yellow, green and yellow stripped t-shirt with green shorts and black converse back boots, the other male wears black shorts and an ANC t-shirt with flip-flops and has now hair.	day". He also mentions to his friend that he is thinking of setting up a printing shop, however the cost of internet is too high, as he will need to have access to the internet for those customers wishing to email him documents to print and rentals costs will also require him to increase his prices. The other male suggests to him to rather find a different supplier for printing service as he could continue using the free wifi when there is a need without incurring costs. They continue to brainstorm on different ways to make and save money. They spend over an hour at the wifi zone, they then leave the hotspot walking together.
	Three female (19-22 years) arrive at the wifi zone carrying cellphones. Female 1 wears a red long dress, boots and a beanie, female 2 wears spectacles, a	They sit on the grass and access the wifi while having a conversation. They discuss social media, facebook in particular. Debating how long each of them could manage to stay off the site. The one says "friend, you spend all your lunch money on data" they laugh and the one who is being accused states that "#datamustfall". They continue using the wifi and leave the wifi zone after an hour. The conversation quickly moves to academics, they discuss their assignments due in the next month.

Time	Behaviour	Action carried out at wifizone
	black tracksuit and pink sneakers, female 3	The cohort leave the wifi zone after spending two hours.
	An elderly looking woman (54 years) passes by with a younger female (25 years)	The elderly women comments to the young female that she doesn't understand why people would come all the way to sit at the wifi hot spot to connect to the internet. Stating that the internet is the work of the devil "these days, people don't read the Bible anymore because of this internet." They pass and continue their conversation as the walk along into the supermarket.

Other observations

1. Not all community members understand why there is a need for free internet.
2. The youth are happy to save some money through the free wifi and use it to spend other ways through which they could empower themselves.
3. Not all community members have access to the devices they require in order to access the internet in the manner they wish to.

Day 9

Date: 26/05/2018 Wifi zone: Thokoza Park

The number of females identified at the hotspot: 3

People with obvious disabilities: 0

Weather: 21° /9°

Time	Behaviour	Action carried out at wifizone
09:00 – 12:00	People begin to trickle to the wifi zone.	There is a group of four males (20-24 years) sitting on the park grass in the sun drinking beer. They sit by the grass and discuss the previous night's activities, none of the males have a phone in hand.
	The park is busy, people are out and about, some passing the park to catch the Rea Vaya bus, some to catch taxis to work and others off to various places.	A female and male (22 – 24years) pass by and sit on the steel bars, they discuss that they need to submit their CV's before the applications close for the learnership. They by the grass for the next hour on the cellphones and while standing now and then to stretch. They spend over three hours at the wifi hotspot and they stay at the wifi until researcher leaves the wifi zone.

	Male (33 years) dressed in an orange hoodie and black pants and black sneakers.	Sits by the grass with his back pack on the floor. He takes an interest in what I am doing at the park. He mentions that he is on his way to work. He needs to be at work in the next hour, so he thought he should start at the wifi zone. “I work for an Indian man, he works me to the bones, yet he pays me very little. I am here to looking for work. The problem is I only have matric. I would like to continue my studies but I can’t afford it. I hear there is free tertiary education after the fees must fall protest, but I didn’t do well in my matric, I would love to study towards media studies. I just don’t know where to start. I used to go to the Johannesburg library and loan media related books, but now I don’t have time. Life is hard my sister” He confirms that he has been using his cellphone to chat and look for work. He leaves the wifi zone after spending 15 minutes.
	Male (25) dark skin tone, dressed in white sweat pants and maroon and white sweater, it looks like a matric jacket and had the number 67 written on the front, with white	He take an interest in why he sees me at the wifi zone so often, would like to know my purpose for being there. I explain to him my purpose, he states that the roll-out of the wifi is good government initiative. However people don’t use it to connect with the government, they use it for social media, he highlights that people visit the wifi to download movies and then go home and watch them. He says he doesn’t think that’s what it was intended for but says social media and movies are addictive. He carries on his cellphone and wishes me luck in getting people to complete the questionnaire. He continues to access the internet and leave in an hour.

	Nike sneakers. Has an afro that's been tinted blond.	

Other observations

1. Some people are at the wifi zone to wait for friends, colleagues and family member. They use the free wifi to pass time while they wait.
2. Some of the community members know that they could utilise the wifi to better themselves, however they appear to feel stuck in their situation and are unsure how to change their status quo.

Day 10

Date: 27/05/2018 Wifi zone: Thokoza Park

The number of females identified at the hotspot: 6

People with obvious disabilities: 0

Weather: 18°/1°

Time	Behaviour	Action carried out at wifizone
12:00 – 18:00	Female (27 years) has two little girls wears a long sleeved dress, twins (6 years) wearing similar knitted pink dresses.	The female sits on a blanket and keeps looking at her phone while telling the little girls not stray from her. Keeps looks at her cellphone now and then, her focus is on the little girls, as she watches them play. She eventually leaves her cellphone and strictly talks with the girls as they play. She spends an estimated 30 minutes on her cellphone using the free wifi.
	Male (24) wears black dusty and worn out shoes, the sole, his toes are sticking out. He wears brown clothes and jacket	The male stand against the tree and he uses his cellphone to access the internet. He stares into his cellphone and then begins to leave the wifi hotspot after 30 minutes.

Time	Behaviour	Action carried out at wifizone
	and formal brown old looking pants.	
	A male (24) wearing all black, a cap, t-shirt, jeans and sneakers, carrying a back pack.	He stands under a tree and uses his cellphone to connect to the data. He after a few minutes he puts his back pack on the ground, he sits on the grass and takes out a laptop and he accesses the free wifi for about an hour. He stands up to stretch and then sits on the grass again, he continues using the wifi interchanging between the two devices. After another hour he puts his laptop in the back pack and continues to use his cellphone as he leaves the park.
	Two males (28-34 years)sit by the park steel bars Wearing jeans and short sleeved tops, one in blue and the other green, with sneakers- black.	They are on their phones, the male the one males (blue t-shirt) takes out a small looking cigarette. They keep passing it between one another. The smell is not that of a cigarette.

Other observations

1. On a cold day the users seem to rush through whatever it is they had come to do at the wifi zone. On average they appear to stay for an hour.

Day 11

Date: 2/06/2018 Wifi zone: Regina Mundi Church

The number of females identified at the hotspot: 5

People with obvious disabilities: 0

Weather: 18°/0°

Time	Behaviour	Action carried out at wifizone
09:00 – 12:00	Male (21) sitting by the concrete pedestal. He wears a blue overalls, long pants, white floppy hat and long sleeved jacket, he wears white converse sneakers.	The male accesses the wifi, turning to face the west, and pulling down his floppy hat, as if to hide his eyes. He sits at on the concrete pedestal for about an hour and then walks away.
	Male (24) with a bald head and dragon tattoo, he wears a black puffy jacket,	He focuses on his phone, he takes his earphones out of his pocket on his jacket puts their earphones on. He begins to talk as though he is having a conversation he moves his phone to closer to his neck, the side with the tattoo. He then moves his phone away, and looking into the phone he laughs

Time	Behaviour	Action carried out at wifizone
	grey skinny jeans, and grey sneaker by the concrete pedestal.	and continues to have a conversation. He waves good bye. Continues to sit on the pedestal, using his phone. Spending over an hour at the wifi hotspot.
	Two males (19 and 17 years) standing by the picket fence.	The males stand facing one another, the one male leaning against the picket fence, putting his one foot against the picket fence. They continue to talk, they wear serious faces. The stand for 45 minutes, now and then the male leaning against the picket fence stands straight and then returns to his original position. They proceed the park and go to the Thokoza park side of the park.
	Male (15) standing siting by the church's garden patch. He wears a jersey (grey), tripped black and white pyjama pants, morning slippers (navy blue) closed shoes.	He stands close to the elevated church garden parch, he proceeds to climb on the patch (nothing is blooming in the patch, mainly soil). He stands while accessing the wifi through his cellphone. An old man (60 years and above) his short grey hair trimmed on the side, dressed in crisp white shirt, black formal pants and shiny black shoes. He requests the male standing on the garden parch move off, saying this is exactly why his plants no longer bloom, the wifi users trample on the plants.

Time	Behaviour	Action carried out at wifizone
		The young male steps off and apologise to the older man. He stands by the picket fence and continues to access the wifi. The young male spent 2 hours at the wifi zone.
	Male 17 standing close to the arts and craft vendors. He wears school uniform. A yellow long sleeved shirt, grey pants and black shoes. Carrying a back pack.	He stands typing on his phone. Two males dressed in similar school uniform, they approach him and they begin to walk together, leaving the wifi hotspot.
	Male (20) arrives. He wears a blue t-shirt and grey track suits pant and blue closed morning slippers.	He sits by the concrete pedestal. He accesses the wifi for15- 20 minutes and leaves the wifi zone.

Other observations

1. There a fewer people at the wifi hotspot on cold winter mornings.
2. Users look to sit or stand where there is sun to try and keep warm.

Day 12

Date: 3/06/2018 Wifi zone: Regina Mundi Church

The number of females identified at the hotspot: 4

People with obvious disabilities: 0

Weather: 20° /6°

Time	**Behaviour**	**Action carried out at wifizone**
13:00 – 17:00	Male with the dragon tattoo from the previous day arrives at the wifi hot spot. He wear blue jeans and white top with the black sneakers.	He sits by the concrete pedestal accessing the free wifi. He focuses his attention on his phone. He stays for 20 minutes then begins to walk to Thokoza park.
	Female (23) wearing black jeans and a	She sits on the concrete pedestal, accessing the wifi using her phone. She at the wifi zone for over 30 minutes and then her phone rings she picks up and

Time	Behaviour	Action carried out at wifizone
	grey poncho with silver shoes.	begins to walk toward the main road where people catch taxis and the Rea Vaya bus.
	Male (25) blond coloured hair, he his hair trimmed into a mow hog style. He wears a knee high blue jean jacket, grey sweat pants and yellow sneakers	The stands against the pick fence using his phone to access the internet. He is at the wifi for 15 minutes or less then begins to walk away.
	Male (17) from previous day, wears school uniform again, save this time he also has a jersey on (maroon with yellow trimming).	He accesses the free wifi standing by the sun, close to the picket fence, he eats fatcakes as he stands by the fence. He types on his phone. A male wearing similar school uniform, one of from his cohort of the previous day approaches walks towards him. The greet each other and begin to walk, leaving the park.

Other observations

1. The faces at the wifi zone are beginning to become familiar.

2. Some of the people come to the wifi zone to access the internet avoid answering the questionnaire by saying they have already completed.
3. Some users are reluctant to complete the questionnaire arguing that it is cold and the quickly need to do what they came to the wifi zone for and go home to keep warm.

Day 13

Date: 9/06/2018 Wifi zone: Protea Point

The number of females identified at the hotspot: 2

People with obvious disabilities: 0

Weather: 19° /6

Time	Behaviour	Action carried out at wifizone
09:00 – 12:00	Male (22) with beard and an afro. He wears a white long robe and black formal shoes and leopard print belt.	The male stands by the picket fence and accesses the wifi. He continues standing on the same spot for about 15 minutes. Another male joins him, wearing similar attire, they begin to move and leave the wifi spot.
	Male (33) short chubby stature. Wears blue jean	He sits on the alleviated area close to the car wash, accessing the internet. He looks around now and then but mainly focusing on his cellphone. After 30minutes, he leave the wifi zone.

Time	Behaviour	Action carried out at wifizone
	shirt, khaki chino pants and white sneakers.	
	A cohort of five males sits by the (17- 18 years) wearing school uniform blue jerseys, white shirts, grey pants and black school shoes. Carrying back packs.	They stand by the shipment container, two lean against the container and the others face them. They stand for about 30 minutes, they then decide to sit against the container forming a row. They sit for over two hour, then they start each going into the pockets and combine money. Two of them leave their bags close to where the others are sitting they make their way to the fish and chips shop. Returning with a packet of hot chips and they huddle around eating the chips. They spend another hour at the wifi zone and they take their bags and leave the wifi zone.
	Female (22 years) wearing long black dress and pumps	She sits by the alleviated area close to the picket fence by the car wash. She has her earphones on. She uses a cellphone to access the wifi. She spends her time at the wifi zone sitting by herself. She leaves the wifi zone after 2 hours.
	Cohort, three males (20-21 years) lanky and they wear matching torn blue	They sit the in the sunny section grass close to the shipment container. They sit by side by side and discuss the latest music that they each like. Streaming using videos using the free wifi connecting the sound via the bluetooth

Time	Behaviour	Action carried out at wifizone
	jeans with sneakers, the one wears a yellow t-shirt (carries a “bread size” Bluetooth speaker) the other two both wear white tops and two females (19-20) they dressed in high waist jeans and crop tops with bomber jackets, the shorter one wears a red one and the tall and model looking wears one in a military green colour.	speaker. They each suggest the songs that should be stream. They continue to stay by the wifi hotpot. All with the phone in hand. They are at the wifi zone for over 2 hours and being to make their way, heading towards different directions.

Other observations

1. The wifi zone is quieter.
2. The users are not eager to complete the questionnaires.
3. The weather seems to be having an impact on the amount of time spent wifi users at the wifi zone.

Day 14

Date: 10/06/2018 Wifi zone: Protea Point

The number of females identified at the hotspot:3

People with obvious disabilities: 0

Weather: 19° /6°

Time	Behaviour	Action carried out at wifizone
13:00 – 17:00	Male (27 years), short neatly hair, wears Pick n pay branded black jacket, black formal pants and black	He sits on the grass leaning against the container facing the sun. Using his phone to access the wifi. The male is the free wifi zone for 30 minutes and eats his lunch after which he leaves.

Time	Behaviour	Action carried out at wifizone
	shoes stands by a blue parking pillar	
	Male (28 years), bald head, average height, wears soccer jersey, Kaizer Chiefs, Adidas sweat pants, with black loafers.	He stands against the steel container. He access the internet using a tablet. He stands by the container for a few minutes. Politely greeting the other users as they arrive and continues to look at his screen. The male is at the wifi zone for an hour and then leaves going to the shops, without returning to the wifi zone.
	Male (15 years) wearing a purple hoodie, black sweat pants and black Vans sneakers.	He is carrying a plastic bag with Pick n Pay branding on it. One can see through the bag and there are vegetables in it. He puts the bag on the grass and leans against the container, takes out his phone from the pocket of his hoodie. Now and then sound come from his phone. He is not wearing earing any earphones. The male is the wifi zone for an estimated 1hour and 30minutes before he picks up his shopping bag and leaving the wifi zone.
	Male (31 years) short neatly trimmed hair, wears spectacles, with the Mandela line. Wears	Stands against the picket fence close the car wash. The focuses on his phone, greeting some of the people who pass by. None of them stop to have a conversation. He continues to use his phone. He spends an hour at the wifi spot and then leaves.

Time	Behaviour	Action carried out at wifizone
	green coat, white jersey, jeans and brown formal shoes.	
	Male (22 years) short uncombed hair. In navy blue sweater, military green pants and black and white sneakers	He sits leaning against his the container. He looks is looking at people passing by and observing the activities and motion in the shopping complex, at times starting into space. He does not have any device in his hand. After a short while a male (22 years) wearing red jersey, black sweat pants and grey sneakers. He takes out a power bank out of his pocket, hands it over to the other male. He then sits down and takes out his phone from his pocket. The first male takes out his phone from his pockets and charges it using the power bank. They spend over three hours at the wifi zone.
	Cohort of three (17 – 18 years) males arrive. They wear school uniform. Blue jerseys with white stripes, blue shirts and grey pants	They sit on the grass close to the shipment container, using their cellphone devices.

Other Observations

1. Some of the Pick n Pay employees seem to spend their lunch break accessing the free wifi.
2. Community members often greet each other at the wifi hotspot, however there seems to be an unspoken etiquette of sorts that "you may greet but let it end there unless I know you well". Many often greet and carry on minding their own business.
3. The three females who visited the wifi zone were a group of friends waiting for another friend on their way to varsity, and spent very little time at the wifi zone.

Day 15

Date: 16/06/2018 Wifi zone: Regina Mundi Church

The number of females identified at the hotspot: 2

People with obvious disabilities: 0

Weather: 27° /5°

Time	Behaviour	Action carried out at wifizone
12:00 – 18:00	There people at the wifi zone. Female (22 years). She wears school	Stands against the picket fence, she is using a tablet to access the internet. She asks a lady passing by, whom she refers to by name to please take pictures of her. Informing the lady that she will be posting the picture on all of her social media platforms in commemoration of those "who died a tragic a death, at the hands of the boers". She says to the female taking

Time	Behaviour	Action carried out at wifizone
	uniform. A black dress, white shirt, white socks and school shoes. She has a brown sling bag across her body.	photos “they will never like us. They tolerate us, we know. This is why Mama Winnie is my heroin, she fought them until the end.” The second female chuckles and continues taking photos. The other female finishes taking the rest of the photos, showing how the photos look. She confirms that she is done. The first female thanks the second female and releases her to leave the wifi hotspot. She then spend about 20 minutes at the wifi zone before leaving.
	Male (24 years) wears brown jersey, faded blue jeans and loafers.	He stands against the picket fence, using a cellphone to access the internet. He continues to stand for 30 minutes, he is joined by another male. They greet each other and talk while accessing the internet, the second male (The second male is dressed in a red tracksuit and black sneakers) also is using a cellphone device to access the internet. They move from the fence and go sit on the grass, they stay at wifi zone for an hour together. He leave walking together towards he same direction.
	Cohort of 5 males and 3 (24- 27 years) females. All wearing various school uniform.	The males stand by the grass close Thokoza park. They take out a box of wine and polystyrene cups and sit down as they drink the wine. They drink the wine for about 2 hours and talk, they leave the wifi hotspot without using their cellphones. They walk to the inner part of Thokoza park.

Time	Behaviour	Action carried out at wifizone
	Male (26 years), he is dressed in a black jersey, green skinny pants and black sneakers, wearing a black cap.	He sits by the garden patch, carrying is tablet he begins to access the wifi. He puts his earphones on, he seems to be watching something on his tablet. He carries on using his tablet to access the internet. He doesn't interact with other wifi users who are currently at the wifi hotspot. He accesses the wifi for an hour. He then begins to walk away from the wifi hotspot.
	Male (29 years) wears a grey onesie and green sneakers.	The male lingers sits by the concrete pedestals and accesses the free wifi. He puts his earphones on and nodes his head now and then. The male is at t the free wifi zone for an estimate of an hour and then leaves the wifi zone.
	Male (17 years) wearing school uniform (grey jersey, white shirt, grey pants and black shoes)	The male takes out a laptop from his school back pack. He proceeds to watch videos online, not making use of earphones. He is at the free wifi zone for an hour and then leaves the wifi zone.
	Male (20 years)	He leans against the picket fence. The male stares into his device. He spends 30 minutes at the free wifi zone and then begins to leave the wifi zone.
	Male (17 years), wears a black	The male sits on the concrete pedestal as he accessed the free wifi. An elderly lady passes carrying shopping bags, the male the promptly stands up

Time	Behaviour	Action carried out at wifizone
	beanie, black hoodie and brown pants and shoes.	and leaves the wifi zone, helping the lady carry her bags to her destination. He returns in 10 minutes and continues using the free wifi for about an hour prior leaving the wifi zone without returning.

Other observations

1. There seems to a trend of people who visit the wifi zone without using the wifi
2. There have only been two females on this day accessing the free wifi.

Day 16

Date: 17/06/2018 Wifi zone: Regina Mundi Church

The number of females identified at the hotspot: 3

People with obvious disabilities: 0

Weather: 18° /1°

Time	Behaviour	Action carried out at wifizone
09:00 – 12:00	Church congregants pass the wifi zone to enter the church	There are no people present at the wifi zone.

Time	Behaviour	Action carried out at wifizone
	Male (19 years) wearing a black beanie, a black Mr. Price branded jersey, blue jeans and black converse sneakers.	The male sits by the garden patch. He has his earphones on and accesses the wifi through his cellphone. A couple of congregants pass and greet as the make their way into the church. He continues to sit by the garden patch. He leaves the wifi zone after an hour.
	Male (16) arrives at wifi zone. Wearing blue hoodie, covering his head. With blue jeans and black sneakers.	He has a skateboard tucked under his left arm and settles by the concrete pedestal. Placing the skateboard under his feet. He is at the wifi zone for 30 minutes then begins to walk away from the wifi zone area.
	Female (20) with long braids that come to her wearing a denim jacket and black jersey and black denim.	The female stand against tree, she types on her cellphone. She keeps accessing the wifi. She makes a phone call, when she done she moves to go sit by the concrete pedestal. She continues to access the wifi and leaves the wifi after 30 minutes.
	Male (31 years) has a bald head, wears a	He leans against a tree, carrying a Bible, uses his phone to access the wifi. He makes a phone call. Once done on the phone call he continues to his

Time	Behaviour	Action carried out at wifizone
	maroon jersey, a blue denim and point black shoes.	phone. He stands against the tree, until a female waves at him from a distance, he begins to run toward her direction.

Other observations

1. The arts and crafts vendors are not at the wifi spot.
2. Some of the people at the wifi zone appear to be waiting for friends, family or colleagues as they usually leave as soon as the person appears or after they receive a call.

Day 17

Date: 23/06/2018 Wifi zone: Thokoza Park

The number of females identified at the hotspot: 4

People with obvious disabilities: 0

Weather: 18° /7°

Time	Behaviour	Action carried out at wifizone
09:00 – 12:00	There are couple of people at wifi zone A male (20 years) wears hoodie covering his heard, spectacles, formal pants and formal shoes.	The male wearing spectacles smokes a cigarette while he accesses the free wifi through his phone. He moves around, while observing something on his phone. He finally settles on the spot by the parking lot. He sits on the grass. He is joined by another male (20 years) wears a long black coat, jeans and black formal shoes. The second male hands the male wearing spectacles plastic bag with oranges in it. They talk briefly and then go their separate ways.
	Female (23) has shoulder length dreadlocks and dresses in a yellow and brown long dress, with yellow pumps.	She sits at the edge of the grass, by the park drive way. She has a notebook and cellphone. She refers to her phone and writes in her book. She leaves the wifi zone in 30 minutes.
	A male arrives carrying a cooler box. He looks about	He sits by the grass and also putting the cooler box on the grass. He takes out his phone from his pocket and accesses the wifi. He is joined another male (21), wearing a red hoodie, blue sweat pants, morning slippers open back (grey), he has phone in his hand. He stands as they talk, and the first

Time	Behaviour	Action carried out at wifizone
	22, he is dressed in a purple hoodie.	male makes a phone call, he talks on the phone for about 15 minutes. While other second male continues use his phone. He type and wait for a moment, looking at the phone then he continues to type. The second male finishes talking on the phone, they have a discussion. He stands up “Let’s go.” they then carry the cooler box to the far side of the park.
	Male (26 years) wearing a loose fitting paisley shirt, white pants, a gold necklace, formal brown shoes is with a female (22 years) in a black jumpsuit and black cowboy boots, sit by the green steel bars	They sit together in complete silence, while they use their phones to access the wifi. The female rests her heard against the males shoulder. In 20 minutes they start to laugh at a video they are watch on his mobile. She sits up straight, they continue to look at the screen laughing. They are at the free wifi hotspot for 1 hour before holding hands and leaving the park.

Other observations

1. There are people at the park who are smoking cannabis.

2. There is a choir singing gospels songs at the park.

Day 18

Date: 24/06/2018 Wifi zone: Thokoza Park

The number of females identified at the hotspot: 5

People with obvious disabilities: 0

Weather: 19° /6°

Time	**Behaviour**	**Action carried out at wifizone**
13:00 – 17:00	There is a group of church goers wearing their church uniform at the park. They sing and someone is taking a video with a big camera	The male faces down and accesses wifi, he has earphones on. He uses his cellphone to access the internet. He picks his head up now and there, looking around and then pops his head down, focusing on his cellphone. He is at the wifi hotspot for 2 hours and then begins to walk away making his way to the other side of the park.

	Male (14 years) seating outside on the grass, by the quiet section of the park. He is dressed in a long sleeved jersey, jeans and sneakers.	
	Male (23 years), with mawhog hairstyle, wears African print, multi coloured bomber jacket, black pants and white converse sneakers.	He has a cigarette between his fingers and his cellphone in the other hand. He puffs on the cigarette. Makes a phone call while pacing on the grass, he then proceeds to sit by the green park divider bars. He voice is very low. He looks at his cellphone and put it back on his ear. He stands up and paces around, looks at the cellphone and stands by one spot. When is done with his conversation, he goes back and seats on the green bars. He is at the wifi zone for 1 hour, 30 minutes and then stands up, leaves the wifi zone.
	Male (19 years) wearing black beanie, hoodie, black jeans and converse shoes	He sits stands under a tree and accessing the internet as he is stands there. He is approached by another male, similar age group, the other males says to him “I have been messaging you, my messages are getting through to you” The first males highlights that he has just received the messages, the wifi connection is slow today. The second male says “when is it ever fast” they

		laugh and continue about their discussion on soccer and why South Africa needs better players to make it through to the next World Cup. The males are at the wifi zone together for approximately 30 minutes when they begin to make their way into the Regina Mundi church.

Day 19

Date: 30/06/2018 Wifi zone: Regina Mundi Church

The number of females identified at the hotspot: 5

People with obvious disabilities: 0

Weather: 20° /8°

Time	**Behaviour**	**Action carried out at wifizone**
13:00 – 17:00	Male (30) wears blue torn jean a black bomber jacket, with red sneakers. With a short black afro.	He sits by the edge of the garden patch. He has his earphones on. He is at the wifi zone for an hour, he keep standing to stretch. Takes a step or two and the goes back the spot where he was originally sitting. He is joined by another male who greets and sit next to him. The second male (22 years) wears a khaki shirt and matching chino pants, not tucked in and white sneakers. He takes off his earphones and the converse while accessing

Time	Behaviour	Action carried out at wifizone
		the wifi. This continues for an hour, the second male then get up and leaves the wifi hotspot. Leaving the first male at the wifi hot spot and he remains at the wifi zone even after the researcher has leaves.
	Male (22) has short hair, bright white smile against the back drop of his black skin. He wear a Nike black cap, white hoody, blue straight cut jeans and black sneakers.	The male stands by the picket fence, not to lean on it, accessing the wifi through a tablet. He continues to access the wifi for an hour and then leaves the wifi zone after 50 minutes.
	Male (29) wears a hoodie, and cover his head, green colour, brown pants and brown shoes. He has a petite frame.	The male sits by the garden patch area. He uses his cellphone to access the wifi, he is at wifi zone for 10 minutes when his phone rings and he leaves. He returns in 20 minutes and stands by the picket fence. He puts his earphones and keeps nodding his head. He spends about an hour at the wifi spot after his return and the leaves the wifi spot.
	Female (30) wears a peach coloured	The females leans against the green bars, using the cellphone in her pocket, she is access the wifi for over 30 minutes when two males

Time	Behaviour	Action carried out at wifizone
	cap, red jacket and blue denim and white boots	(20 and 24 years, wearing dirty looking clothes, and seem to be known locally, as people at the wifi hotspot looked at them and muffled “nyaope smoking tsotsi”) walk towards her, she put her phone in her pocket. The males walk past the female, when they are about 300 metres from her, she reaches for her phone, types something quickly and then leaves the wifi zone.

Other observations

1. There are familiar faces at the free wifi zone. They greet and would like to know how the research is progressing.
2. More wifi users complain about the accessibility if porn sites through the free wifi zones.
3. Some users would like to know how they can work for the city as they have heard there were people who were employed by the city when the free wifi zones were initially opened for public usage. Arguing that there are people who request their help when using the free wifi.
4. Some wifi users complain that they are exposing themselves to harm by visiting the wifi spot, the government should rather provide them with data coupons they could redeem through the cellphone network instead.

Day 20

Date: 1/07/2018 Wifi zone: Regina Mundi Church

The number of females identified at the hotspot: 2

People with obvious disabilities: 0

Weather: 20° /8°

Time	Behaviour	Action carried out at wifizone
13:00 – 17:00	Lanky male (36) in brown jacket, chino pants and old black, now grey all starts and clean shaved heard leans against a tree close to the shoe hawker	He greets and asks what I am doing the wifi zone. After explaining my presence he states that he is there to access social media site and small business funding sites. He says he has been out of work for the past three years, and the free wifi helps him connect with his friends and family. He also states that through the free wifi he was been able to connect with organisations that do business course training for free in Soweto. After our conversation he continues to access the wifi. Stands by the tree the entire time and he remains at the wifi zone until the researcher leaves.
	Light skinned male (33 years) sits by the steel bars close to Thokoza park. He wears a black	The male, has a soft voice asks other user (a young looking male, about 17, wearing sagging pants black pant and a white long sleeved top with a black beanie, tall, sitting on skateboard) how to log to the wifi. He says he just moved to Soweto, he recently started work in the Germiston area. The young male helps the other male set up his wifi access.

Time	Behaviour	Action carried out at wifizone
	Female short (25 years) and dressed warm with a neck covering jersey, jacket, jeans and sneaker	She stands by the church's picket fence and focuses on her phone. She is later (20 minutes approximately) joined by another female whom she waved at she was passing by. (the second female looks obese for her short stature, she looks 23 and is dressed in a pair of leggings, black military boots and a big green jacket) They stand chat for about 10 minutes. The second female leaves, the first female stays and continues to use her phone, in about 10 minutes after the second female has left, she received a call, and she starts to wave in the opposite direction. A female (small frame about 22 years age) in a her church uniform (long green dress, long sleeved, and white belt and doek) walks towards her, they leave the wifi zone and walk towards the direction the first female came in.

Other observations:

1. People seem to look for a little space where they can sit or stand without bothering or being bothered by the other wifi users.
2. Users don't stay long when it's cold.

Day 21

Date: 7/07/2018 Wifi zone: Regina Mundi Church

The number of females identified at the hotspot: 2

People with obvious disabilities: 0

Weather: 14° /6°

Time	Behaviour	Action carried out at wifizone
13:00 – 17:00	The male with a brown jacket from the previous day is there, leaning against the tree he leaned on the previous day	He greets me and say "I am only here to send some whatsapp messages today. I am expecting a guest, I need to check if they will still be coming. I will be leaving shortly, its cold." After 10 minutes, of chatting on whatsapp he makes his way and says he hopes to see me again.
	Male (33 years) tall and skinny, wears a big jacket, a cap and a South African flag scarf and boots,	He says starts talking facing his phone with is earphones on, he tells the person on the other line that he is the Regina Mundi church, outside the church, accessing the wifi and that he missed the person, he couldn't wait for tomorrow when he will have money to buy a gig of data. He complains that the wifi video call is too slow and that they need to rather use skype the next time. He walk around, moves further away from the church.

Time	Behaviour	Action carried out at wifizone
	brown in colour and have a military style.	
	Female dressed in long, flowy green summer dress, boots and a jean jacket with s doe and a ZZC church badge	She sits on the pastels and stares into her phone. She only spends about 15 minutes at wifi zone, then leaves the wifi spot leaving towards the same direction in which she can come.
	Two females (18-21 years) dressed in matching track pants and top, suede material in purple	They discuss that they need to post pictures on Instagram. The one explains to the other that they first need to unlock her Instagram account, "I locked it the last time were here." They continue to unlock the account and discuss which pictures to post, they spend over an hour at the wifi zone.

Other observations:

1. There no people by the concrete pedestals.
2. There are fewer people at the wifi zone than on a warm day, those who come don't stay for long.
3. Most people don't want to sit by the concrete pedestals on a cold day, they say that then it makes them colder.

4. The younger (17 and below) wifi users outnumber the older people above 18 years. They come in cohorts and spend an average of 2 hours at the wifi zone.

Day 22

Date: 8/07/2018 Wifi zone: Thokoza Park

The number of females identified at the hotspot: 4

People with obvious disabilities: 0

Weather: 14° /3°

Time	Behaviour	Action carried out at wifizone
13:00 – 17:00	Two young male (22-24 years) dressed in long coats beanies and sneakers.	About two man are standing having a conversation, they talk about the movie taking long to download in the cold weather. They keep moving closer to the sunny area, and the one informs the other that if they go any farther they will lose connection. They settle on one spot, and they agree that they can leave when the movie is done downloading, they leave in 30 minutes.
	One male (24 years) chubby short male dressed in a purple sweater and sweat	He removes his glove on one the left side, out the cellphone and starts to access the wifi, standing against the sun. He spends an hour using the wifi, his phone rings and he picks up, explains to the person on the line that he is at the park. They agree to meet later. He then leaves the wifi hotspot.

Time	Behaviour	Action carried out at wifizone
	pants with short hair and gloves.	
	A cohort of four males (18-20 years) arrive at the wifi hotspot.	They stand in the sun and discuss that their college recess is over and that they need to complete their assignments before the week is over.
	A male (24-26 years), dressed in a batman onesie comes with 3 foldable chairs	He unfolds one chair and put the rest of the chairs on the ground. He sticks his hand in his pockets and takes out his phone. Two females (one African and one white, they look about 23 years) join him, they are dressed in jeans, sneakers and hoodies. The one is carrying a picnic basket, while the white female is carrying four small picnic size blankets, she puts the blankets on the males lap and unfolds the other two chairs, while the African female takes out cups from the basket and begins to poor wine into the cups. They sit down and start to play music, discussing what to do in the evening.

Other observations

1. On a cold day there are not many wifi users visit the wifi hotspot.
2. Many of those who visit the wifi hotspot don't stay longer than 30 minutes, they quickly come and do what they need to do using the wifi and rush of when they are finished.

3. Many seem to be in a rush, some complain that the slow connection doesn’t help. As some believe that regardless of the time of day the wifi is always slow.
4. People who leave the church on Sundays often stand by the wifi zone to conversations while updating their cellphone software and app.

Appendix C: Interview questions for background and understanding of the wifi

Brightwave Meeting discussion points

1. Understand the role of BrightWave in the City of JHB's wifi roll-out initiative
    a. Involvement in the wifi project since launch in April 2017
    b. Date of first Contract with the city

2. Reports produced by BrightWave

    a. Soweto Wifi Hotspot list
    400 number correct?

    b. Usage frequency
    c. Amount of data used daily, monthly and Per Annum
    d. Cost implications if the user were to use own data
    e. Survey research done

Brightwave Meeting follow-up questions (email)

Sent: Tuesday, November 28, 2017, 5:41:25 PM GMT+2
Subject: Research

Good day

Thank you so much for taking the time to meet with me.

Following our discussion, could I please ask you to assist with the information below:

1. The number of the City of JHB's free wifi hotspots in Soweto
2. Top 10 most frequented free wifi hotspots in Soweto
3. The estimate amount of the data used in day, week and month per average user who visits the hotspots
4. Average age group or profile of a typical user
5. Day of the week on which the hotspot is most frequented
6. Top 5 List of most frequented sites- kindly apply order

Thank you so much!

I look forward to hearing from you at your earliest convenience.

Regards
Ntombi Mnisi