UNIVERSITY OF KWAZULU-NATAL

EXPLORING ATTITUDES OF EMPLOYEES TOWARDS TELECOMMUTING ADOPTION IN A BANKING FIRM IN SOUTH AFRICA

By

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ABSTRACT

Telecommuting or telework is the future of work, as it provides an alternative to traditional work done at the office which involves travelling to and from an office. Telecommuting can either be employer- or employee-initiated. Employer-initiated telecommuting is motivated by the need for the employer to reduce costs related to running offices. Employee-initiated telecommuting is driven by the desire by employees to reduce the time taken to commute to and from the office and benefit by using time to do work and balance work and life demands. South Africa is ranked as one of the countries in the world with the worst traffic jams. Employees who are required to work from an office have to travel using public transport or their own transport, such as a car, motorbike, etc. and traffic is one of the challenges that employees face. The main aim of this study was to understand telecommuting in banking, with specific attention being paid to the lengths First National Bank (FNB) business employees are willing to go to influence the adoption of telecommuting. A literature review was conducted to get an understanding of the problem and the research approach. A positivist research paradigm was chosen as a research paradigm for this study and a quantitative research methodology was used. The sampling method used was simple random sampling, where FNB employees in the business segment were selected. An electronic survey questionnaire was used to collect data from the participants. The results predicted their willingness and readiness to telecommute, however they also highlighted the barriers to telecommuting, namely the lack of a telecommuting policy, low levels of trust, insufficient access controls, high data costs, slow broadband speeds, and companies not adapting to new ways of managing millennial workforce. In order to address the issues identified, FNB should implement a telecommuting policy, create training and awareness programmes for all employees, foster accountability and a trust culture, and develop a telecommuter support structure in order to implement or increase telecommuting adoption.

Keywords:

telecommuting, telework, employer-initiated, employee-initiated, productivity, traffic

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE: INTRODUCTION

1.1 Introduction

The evolution and growth of telecommuting is linked to advancements in technology and changes in the economy (Allen, Golden and Shockley, 2015). Telecommuting started in the United States of America (US) and the term was first coined in 1972 by Jack Nilles while he was working remotely on the NASA communication system. Mokhtarian (1991) defined telecommuting as the use of telecommunications technology to occasionally or completely replace commuting to and from work. The internet and the personal computer transformed the workplace, creating new jobs while rendering others obsolete (Gan, 2015). Telecommuting is a concept that has gained popularity around the world; the statistics in the US indicate that among the non-self-employed population, telecommuting has increased by 103% since 2005 (Virtual Workforce, 2016).

South Africa lags behind other countries in adopting telecommuting. According to Hoffman (2002), despite positive strides having been made, telecommuting will take longer to implement in South Africa because South Africans tend to be comfortable maintaining the status quo when it comes to traditional work. According to Reaney (2012), telecommuting is popular in India and more than half of Indian workers are more inclined to work from home, followed by Indonesia where telecommuting is done by 34% of workers, then Mexico at 30%, followed by Argentina, South Africa and Turkey. South Africa has improved compared to other countries and while others have dropped. According to Worksnug (2016), the overall telecommuting adoption rate in South Africa is currently 32%, which is on a par with India and well ahead of the other BRICS countries. Although minimal research has been done in South Africa, it is known that there are barriers to the adoption of telecommuting in the country. According to a research study conducted by Koch and van Brakel (2010), which investigated the barriers to telework in the IT industry, privacy and security issues, as well as compromised work standards, are commonplace.

The South African banking sector comprises of banks and investment institutions which are domestic and foreign. There are many banks operating in South Africa,

however, there are five big banks which are namely: Absa, Standard Bank, FNB, Nedbank and Capitec. Banks in South Africa, offer a wide range of banking products and services, catering for individuals to corporate and investment banking and insurance products and services ranging from short-term and long-term insurance and assurance. According to Simatele (2015), South African banks operate in monopolistically competitive markets although there is a relative low market power.

1.2 Motivation for the study

South Africa is ranked 6th in the world for the worst traffic jams (Numbeo, 2016). Employees who are required to work in an office have to travel there using public or their own transport, and congested traffic is one of the challenges they face. At the most basic level, increasing congestion means that some trips on the road system, whether by car, truck or bus, will entail longer travel times for riders and higher vehicle operating costs (Weisbrod and Vary, 2014).

According to Weisbrod and Vary (2014), traffic congestion imposes additional costs to businesses such as freight companies in the form of delays in the time taken to deliver services and products, which in turn imposes additional inventory costs, logistics costs, reliability costs or just-in-time processing costs onto the businesses that ship or receive the goods. Over and above the effects of congestion on travel costs and additional business operating expenses, congestion can have further business productivity impacts. Generally, congestion can reduce the size of business labour market areas, customer delivery market areas and/or shopper market areas that could otherwise be served or accessed within a limited window of reasonable travel time (Weisbrod and Vary, 2014).

The effects of worsening traffic conditions are that both employees and employers lose time which could be used productively or in creating a work life balance, as employees have to spend hours in traffic. The problem of traffic jams is very prevalent in South Africa's urban areas, which affects all employers and employees operating in these regions. The economic impact that results from congestion in the whole of South Africa is over R1bn, and Johannesburg accounts for the highest loss with more than 1.5 million vehicles registered across the metropolitan (Wakefield, 2015).

Johannesburg has a 30% congestion level; it can take up to an average of 60% longer to travel during peak hours (Bruwer, 2017).

Telecommuting is referred to teleworking, home-working, working-at-a-distance, off-site workers and remote working depending on the parts of the world you come from (Hamilton, 2002). Telecommuting is stimulated by two forces namely; employee-initiated and employer initiated telecommuting. According to Hamilton (2002), employee-initiated telecommuting is the desire by employees to save time spent on traffic, reduce office disturbances and balancing work and life demands where else employer initiated telecommuting, according to Kossek et al. (2006) and Hendricks (2014), is a desire by employers to save costs related to traditional work and improve employee productivity.

Telecommuting or telework is the future of work, as it provides an alternative to traditional work done at the office which involves travelling to and from the office. Telecommuting provides many benefits to both employees and employers. According to Patterson, Harvey and Bosco (2014), one of the employers' benefits is the cost benefit associated with an expense reduction, as employers do not have to pay relocation fees for employees.

Patterson et al. (2014) added that telecommuting increases productivity due to a reduction in stress because of increased flexibility, as the employee benefits through having a better work/life balance. More importantly, the employee saves time and money related to commuting. There is limited telecommuting literature on the banking industry, let alone FNB, which was this study's setting. A loss of productive time due to commuting to and from work has been identified as a problem, and the aim of this study is to investigate this problem further.

FNB has developed flexi hours for its non-essential employees who are required to work core hours between 9:00 and 15:00 (Anon a., 2015). The employees can come in earlier or later, provided that they complete 8.75 hours a day. Furthermore, FNB has implemented a policy to provide hardware such as laptops, 3G cards and tokens to enable employees to access the bank's systems remotely (Anon. b, 2015).

However, telecommuting, like in other South African organisations, has not been widely adopted as a company policy in FNB.

This study investigated FNB employees' attitudes and willingness to initiate telecommuting. The findings of the study will contribute to human resources strategies to maximise human resources efficiency and enable FNB to realise telecommuting benefits. Furthermore, this study will also contribute to FNB understanding the benefits of telecommuting and creating a framework for implementing telecommuting, thus helping the organisation to increase telecommuting adoption.

1.3 Focus of the study

The focus of this study is to investigate FNB employees' attitudes towards telecommuting. The study was conducted on 400 FNB business segment employees. FNB is one of the oldest banks in South Africa and is part of FirstRand Limited. FNB provides financial products and services for personal private, business, commercial and corporate organisations. FNB has subsidiaries in South Africa where it is headquartered, and has businesses in Namibia, Lesotho, Ghana, Mozambique, India, Swaziland, Tanzania, Zambia and the Channel Islands (FNB, 2017). Operationally, FNB consists of four segments - consumer, premium, business and international. The study was conducted in FNB, Gauteng Province, South Africa. A questionnaire was provided to the employees in the business segment of FNB in Gauteng. The survey data was compared with published literature on telecommuting in order to understand the similarities and differences between telecommuting adoptions.

1.4 Problem statement

Research on telecommuting in South Africa has been conducted by Hoffman (2002), Hamilton (2002), Madlock (2012), Dahlstrom (2013) and Hawkins, Soe and Preiser-Houy (1999), and has largely centred around employers providing ICT for telecommuting, as well as the leadership, benefits and effectiveness of telecommuting. There is, however, limited literature available on telecommuting that investigates the role of employees in influencing the adoption of telecommuting. While it can be argued that employers must provide the tools of trade for their employees, however employees are getting more connected to the internet via their own devices.

World mobile internet penetration is forecast to reach at least 71% by 2019 (Internet Society, 2015). It is becoming easier, with cloud solutions, for employees to access work networks through mobile devices. As mentioned earlier, Johannesburg has some of the worst traffic jams in the world, which negatively affects FNB. No studies have been conducted to understand the implication of daily commuting on either FNB or its employees.

Furthermore, no studies have been conducted to understand the telecommuting adoption rate or any issues being encountered in FNB, i.e. there could be barriers that are preventing the adoption of telecommuting in FNB. In order to accelerate telecommuting in FNB's business segment, employees can play an important role in influencing the implementation and adoption of telecommuting (employee-initiated telecommuting). There is a lack of adequate management strategies to influence the telecommuting adoption rate in FNB, thus the findings of the study will go a long way in helping management to understand the role employees can play in influencing the adoption of telecommuting and the strategies to be implemented to increase the adoption of telecommuting.

1.5 The purpose of the study

According to Koch and van Brakel (2010) there are barriers to the adoption of telecommuting in South Africa namely privacy and security issues, as well as compromised work standards, hence implementation in South Africa is low compared to other countries. This quantitative study will address the influence of employees on employers who are considering introducing telecommuting as an alternative work arrangement, with the aim of identifying actions initiated by employees and recommendations that employers can use to accelerate telecommuting. The results could also be used to enhance telecommuting implementation strategies. Ultimately, the purpose of this study is to explore the influence and motivation that employees have when it comes to the adoption of telecommuting, to identify the actions employees are willing to take to embrace telecommuting, and to provide recommendations to telecommuting implementation strategies.

1.6 Research questions

The aim of this study was to explore attitudes of employees towards telecommuting adoption in a banking firm in South Africa. This study aimed to answer the following questions:

- What is the telecommuting adoption rate in FNB?
- What are the attitudes of employees towards adopting telecommuting in FNB?
- What are the attitudes of employees towards barriers to telecommuting adoption in FNB?
- What are the factors that positively influence employees to telecommute in FNB?
- How does telecommuting act as an incentive when deciding on future employment?
- What recommendations could be suggested to improve the adoption rate of telecommuting in banking?

1.7 The objectives of the study

The objectives of this study are as follows:

- To determine the telecommuting adoption rate in FNB.
- To assess attitudes of employees to adopt telecommuting in FNB.
- To identify attitudes of employees towards barriers to telecommuting adoption in FNB.
- To identify factors that positively influence employees in FNB to telecommute, and
- To provide recommendations that could improve the adoption rate of telecommuting in banking.

1.8 Expected outcome of the study

Telecommuting is a growing trend in the world, including in South Africa, however the adoption rate in South Africa has been slow. Little research has been conducted from the employees' perspective with regards to their motivation and willingness to influence employers to accelerate the adoption and implementation of telecommuting in the banking industry. This study will thus provide new information to the FNB business segment that can be used to accelerate the implementation of telecommuting

strategies, with a view to saving lost production time. With the findings of this study, FNB will be able to tailor its telecommuting implementation strategies to increase adoption.

1.9 Methodology

A quantitative research method was employed in this study. Quantitative research is an approach for testing objective theories that examine the relationships among variables (Creswell, 2014:p32). Quantitative research can be used in response to relational questions of variables within a study (Williams, 2007). The FNB business segment has a population of 4 561 employees working in Gauteng, thus a simple random sampling method was initially used to select a sampling frame of 355 employees. After factoring in the low response rates of online surveys, the sample size was adjusted upwards to 400 and this was based on four main question groups/categories identified and each group will be answered by a minimum of 25 respondents. Factoring the response rate of 25%, therefore the required number of respondents was 100 employees out of 400 employees.

First, an electronic questionnaire survey using QuestionPro 17.3 was provided to the sample identified for the study, after which the quantitative data collected from the questionnaires were captured onto the data analysis tool, STATA. Quality assurance was then conducted on the captured data. STATA version 14 was used to perform data analysis by means of descriptive and inferential statistics namely; correlation, principal component analysis and ordered logistic regression at $\alpha = 0.05$ level of significance. The general comments and suggestion data collected using questionnaires (open-ended questions) were coded into categories and analysed to draw conclusions from the input provided by the respondents.

The attitudes of the FNB business segment employees were investigated on both telecommuters and non-telecommuters. The descriptive and inferential statistic methods were used to measure the employees' willingness to adopt telecommuting, and to test whether the employees would initiate actions to adopt telecommuting. For the telecommuters, their satisfaction with the current level of telecommuting was assessed.

1.10 Limitations of the study

During the study some limitations were identified, the first of which was that the researcher had a limited time period (less than two months) in which to gather and analyse the data due to the ethics clearance process taking longer than expected. The first three chapters were not dependent on receiving ethical clearance, thus they were written in the interim.

Secondly, the researcher sought to obtain data from employees living in Gauteng and did not have access to all areas within Gauteng. For this reason, the areas in which the employees resided were grouped, so that the data obtained were representative and sufficient for the study. Thirdly, the study focused on employees in the business segment which is just one of FNB's four segments, therefore the findings do not reflect the views of all employees.

Fourth, the response rate of the participants to the online survey tool (QuestionPro) was slow, resulting in a lengthy data collection process. Finally, there is limited literature regarding telecommuting adoption and the effectiveness of telecommuting as a factor for consideration when employees are considering future employment.

1.11 Structure of the study

This dissertation is comprised of six chapters. Chapter one provides an introduction and sets out a background and the motivation for the study and the objectives of the study. It also outlines the research questions the study will answer.

Chapter two reviews the relevant literature regarding telecommuting in order to provide a broad understanding of the subject, and highlights the gaps in the literature which have necessitated the need for further research.

Chapter three discusses the methodology used in this study to answer the research questions and collect the data. This chapter also details the ethical considerations, confidentiality, validity and reliability of the study.

Chapter four offers a discussion of the results obtained from the analysis of the data collected. Descriptive and inferential statistics are used to highlight the relationships between the data sets.

Chapter five continues to discuss in detail the key results of the data by outlining the demographic characteristics and attitudes of the FNB business segment employees towards telecommuting, and links the study to previous studies.

Chapter six provides conclusions and recommendations for future research.

1.12 Chapter summary

This chapter provided an introduction and background to the study. The focus and importance of the research were also discussed, as were the business problem and research objectives. The following chapter seeks to discuss telecommuting in detail by critically reviewing the available literature.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Chapter two reviews the existing literature to understand the level of telecommuting adoption and employees' attitudes towards telecommuting from the FNB business segment's perspective. Due to limited literature on employee-initiated telecommuting, this chapter will review and discuss telecommuting in general, including employee-initiated telecommuting. This chapter aims to provide a greater understanding of telecommuting adoption statistics from the world, African and financial industry perspectives; different forms of telecommuting; telecommuting benefits for both employees and employers; disadvantages of telecommuting; factors influencing telecommuting; barriers to telecommuting and how telecommuting relates to employee satisfaction.

2.2 Telecommuting forces

Telecommuting is referred to teleworking, home-working, working-at-a-distance, off-site workers and remote working depending on the parts of the world you come from (Hamilton, 2002). Previous research has primarily focused on actions that employers must perform to implement telecommuting. In order to maximise the benefits of telecommuting for both employers and employees, the adoption of telecommuting must be increased. According to Internet Live statistics (2017), the overall world internet penetration rate is 46.1% and it is continuing to rise. The implication of this is that more and more employees are getting access to the internet.

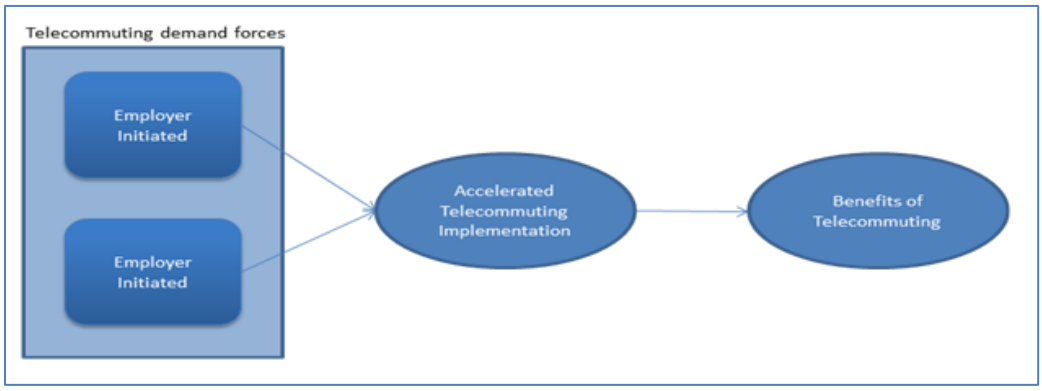

Figure 2.1: Telecommuting forces

Source: Adapted from Hamilton (2002, p6)

Figure 2.1 describes the forces that affect telecommuting adoption for both employees and employers. These forces are described in the sub-sections below.

2.2.1 Employee-initiated telecommuting

According to Hamilton (2002), two types of forces affect telecommuting. The first, employee-initiated telecommuting, is driven by employees because of their desire to decrease their commuting time, to reduce the amount of office disturbances, and to manage both office and family demands. Employees are initiating telecommuting to some extent; in the era of smartphones, employees are more likely to take work home, such as checking and responding to emails (Anon., 2017). Portable devices such as tablets and smartphones allow increased mobility and instant communication through text messages, camera photos, and video clips from anywhere and at any time (Mugwika et al., 2016).

2.2.2 Employer-initiated telecommuting

Hamilton (2002) noted that employer-initiated telecommuting is motivated by the need for the employer to reduce costs, such as facilities and productive time lost. According to Hendricks (2014), employers can reduce or completely avoid mortgages or leases, utilities, janitorial services, office supplies, coffee and water expenses, office equipment, furniture, and transit subsidies. According to Shafizadeh et al. (1998), employer's benefits are infrastructure related costs avoided as a result of telecommuting and this corroborates with the study by Hendricks (2014) and Hamilton (2002). A study by Kossek et al. (2006) has found that telecommuters had higher performance ratings than traditional employees as a result of productivity gains and this adds to the net benefits of telecommuting for the employer.

2.3 Telecommuting

Telecommuting is referred to as teleworking, home-working, working-at-a-distance, off-site workers and remote working depending on the parts of the world you come from (Hamilton, 2002). Hamilton (2002) describes telecommuting as a schedule in which employees perform their work off-site portion of working hours. Mokhtarian (1991) defined telecommuting as the use of telecommunications technology to occasionally or completely replace commuting to and from work.

2.3.1 Telecommuting from a global perspective

According to Allen et al. (2015), the growth of telecommuting is credited to advances in technology and changes in the economy. Telecommuting is a concept that has gained popularity across the globe; a study by Global Workplace Analytics (2016) showed that home-based telecommuting around the world grew by 103% between 2005 and 2016. The technology giant Yahoo has allowed all its employees to work from home, while according to Howington (2016), 3.3 million professionals in the US alone consider their homes to be their primary place of work.

According to Duke (2016), 51% of EMEA (Europe, the Middle East and Africa) teleworkers work from home one day a week or less, while 68% in APAC (Asian Pacific) and 58% in North America work from home one day a week or less. According to O'Brien (2015), knowledge workers around the world increasingly want the ability to telecommute. The statistics below in Figure 2.2 indicate that on average, 66% of employees are telecommuting at least a day or less per week, 22% are telecommuting two to three days a week, 4% are telecommuting four days a week, and 8% are telecommuting five days a week.

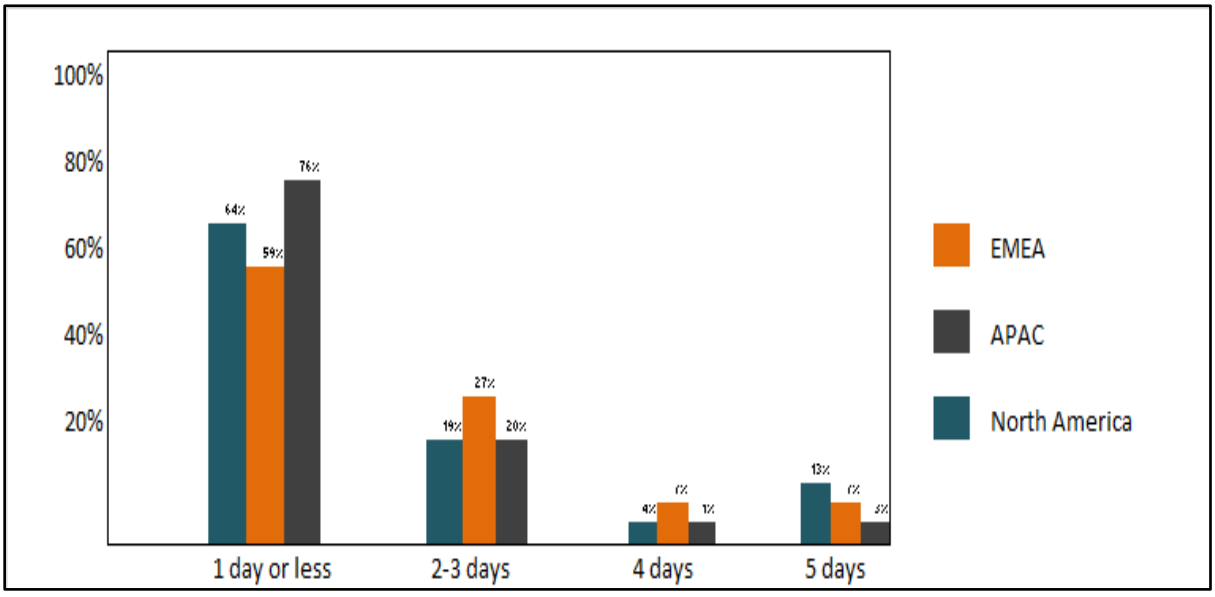

Figure 2.2: Number of days employees work outside the office

Source: Adapted from O'Brien (2015, p.8)

According to Miller (2015), analysts are positive about the telecommuting outlook and its growth. The author added that 30% of workers/employees in industrialised countries will be telecommuting in the coming years. One notable trend about telecommuting, according to Miller (2015), is that employees are willing to sacrifice other benefits that come with their job in order to be able to practice telecommuting, including part of their salary. According to study by Laura (2014), business leaders who participated in a survey stated that they anticipate that 34% of their full-time employees will work remotely by 2020.

2.3.2 Telecommuting from an African perspective

Figure 2.3 shows that South Africa is one of the countries in Africa where its employees are practicing telecommuting. The overall telecommuting adoption rate in South Africa is currently 32% for full-time telecommuters, while 82% are telecommuting at least one a week. This is on a par with India, which is a fellow BRICS partner. South Africa is currently ahead of Russia (9% full-time telecommuters and 42% telecommuting at least once a week), Brazil (9% full-time telecommuters and 28% telecommuting at least once a week) and China, 6% and 41% full-time telecommuters and telecommuting at least once a week, respectively (Worksnug, 2016).

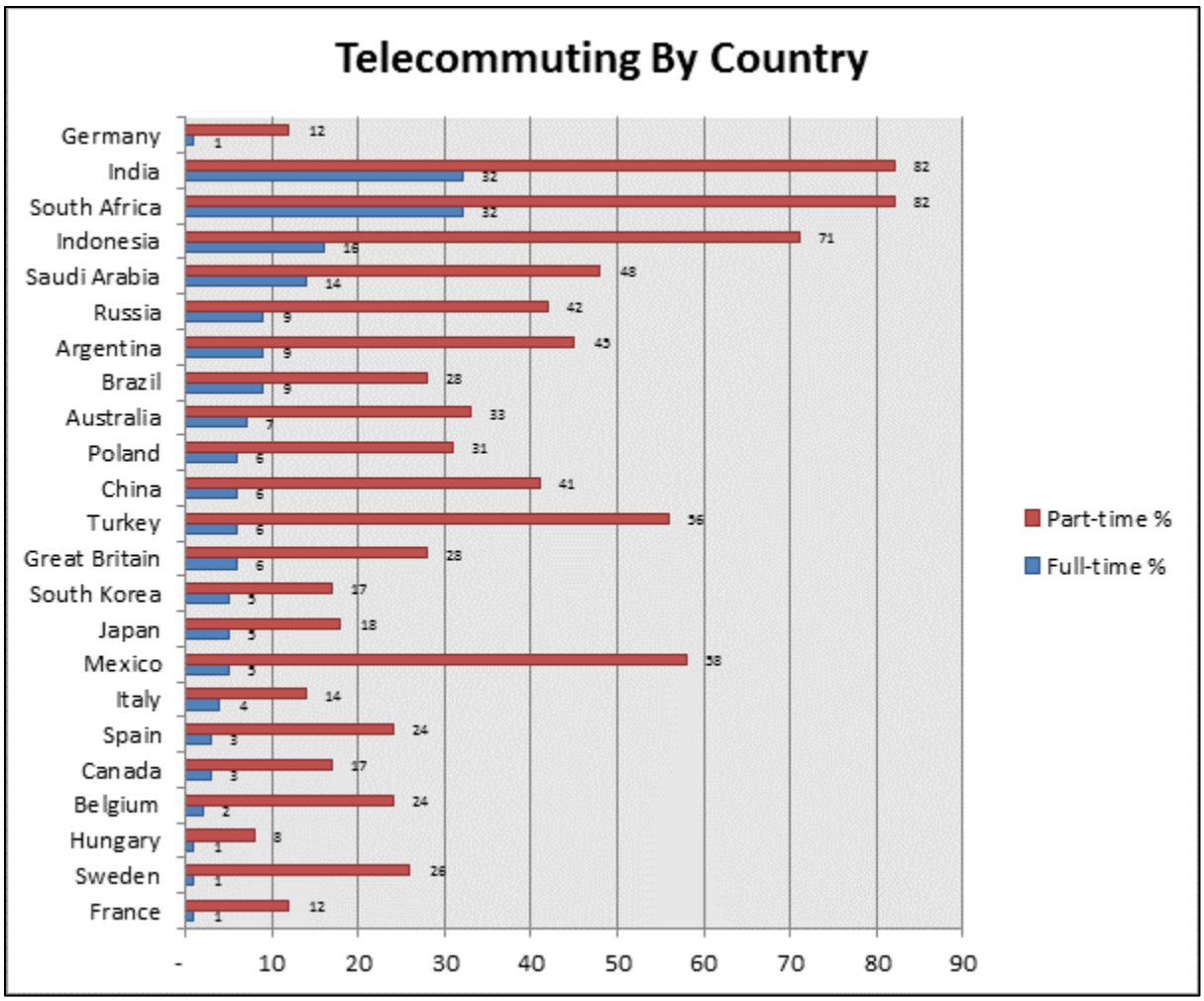

Figure 2.3: Telecommuting statistics per country

Source: Adapted from Worksnug (2016)

There are barriers to telecommuting adoption and according to Olorunfemi (2013), telecommuting barriers in Nigeria were due to a lack of, or non-availability of, the infrastructure required to telecommute; the main stumbling block was an erratic power supply.

Accorging to Ordendal and Roodt (2002), workforce demographics around the world are changing, but in South Africa there is a need for workplace flexibility. When compared to the global telework/telecommuting scene, it is evident that it could take a few years to implement all the major changes in South Africa, because South Africans often prefer to maintain a safe and familiar status quo (Hoffman, 2002). The findings of Ordendal and Roodt's (2002) survey indicate that all stakeholders should be

involved in telecommuting implementation, and there should be total commitment from top management in order for telecommuting to be more than just a one-time arrangement.

A study by Van den Berg (2016) found that over 90% of the respondents said that if they were given the tools to work remotely or flexibly, they would be happy to reengage with the economy. A large proportion of skilled and educated individuals are not able to join the corporate environment or a traditional office for various reasons, for example primary caregivers to small children or people who live in remote areas. The next section explores existing literature conducted from a South African banking perspective.

2.3.3 Telecommuting from a banking perspective

Telecommuting in the banking sector in South Africa is limited, and there is little research on whether or not employers are investing in the technology required for telecommuting. A major banking group in South Africa, Absa, proved its innovative spirit by considering the implementation of a pilot programme to test the viability of telework for the company (Hoffman, 2002). According to Hoffman, the initial cost-benefit analysis for the implementation of telecommuting showed that it could result in a 38% cost saving for items such as office space, furniture, parking and support staff. There is however limited literature available regarding telecommuting in banking sector in South Africa. According to Reynolds (2017), financial services including banks are the industries which offer telecommuting and flexible jobs. Jergler (2013) stated that insurance companies have employees working from home. The next section discusses the literature on different forms of teleworking.

2.4 Forms of telework/telecommuting

Jackson and van der Wielen (2002) identified different types of telecommuting/ teleworking, as per Figure 2.4.

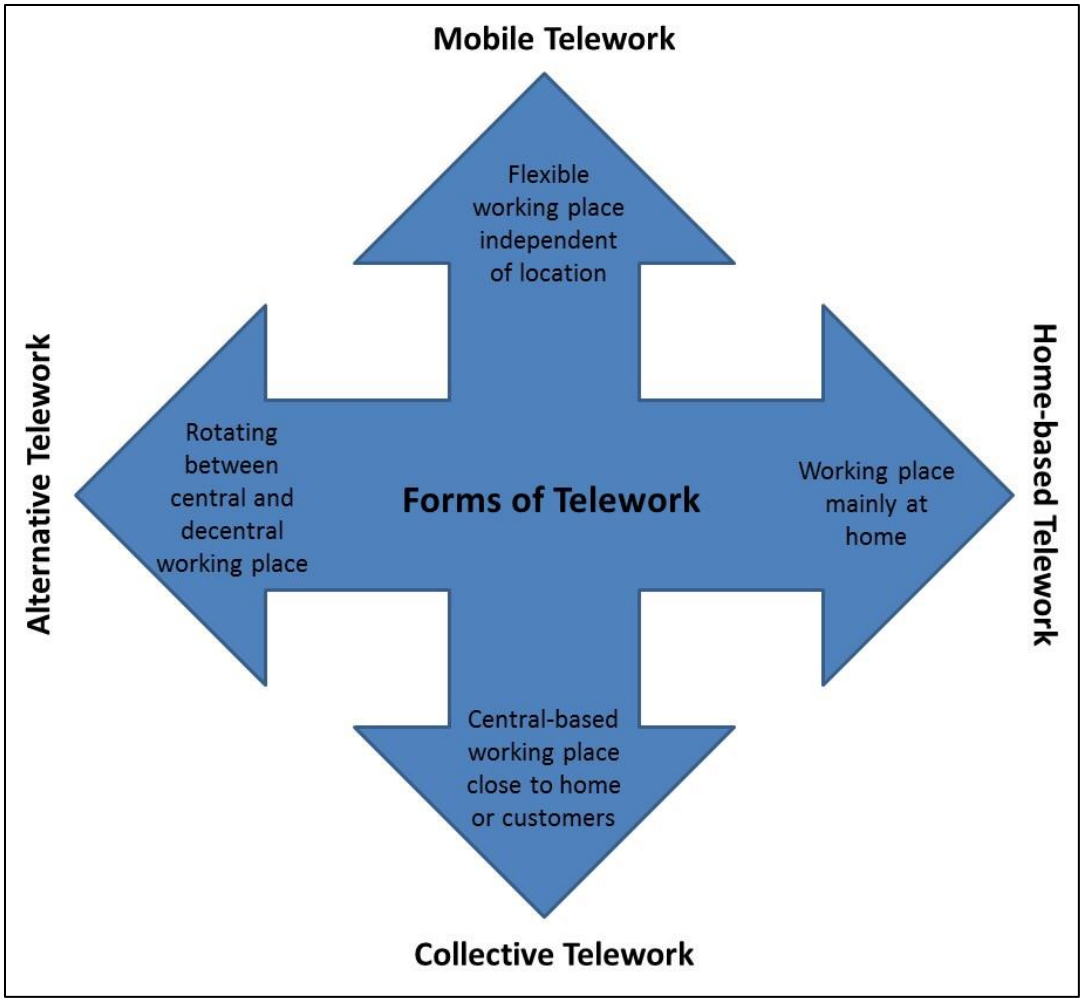

Figure 2.4: Organisational forms of teleworking

Source: Adapted from Jackson and van der Wielen (2002, p.145)

Telework centres are similar to satellite offices but involve multiple organisations (Bui, Kunihiko, Yen and Savikumar, 1996). Bui et al. (1996) described mobile teleworkers as being similar to telecommuters, but they stay at a site close to the frontline or their customers. Bui et al. (1996) defined telecommuters as full-time employees of organizations who stay at home and work rather than commute to the office and their needs for work assignment and delivery being met through computer and communications technology. Bui et al. (1996) described teleworkers as being geographically removed from the central office but they perform the same tasks as the central office.

2.5 Benefits of telecommuting

According to research conducted by Lesonsky (2010), employees are more productive when working remotely than when working in the office. This was supported by Patterson et al. (2014), who stated that productivity is increased due to a decrease in absenteeism and stress as a result of flexibility and autonomy. A Study by Kossef et al. (2006) found that telecommuters have higher performance ratings. This corroborates the findings by Patterson et al. (2014) and Lesonsky (2010). Lesonsky (2010) added that in order to facilitate telecommuting, businesses can utilise collaboration technologies including networks and communication tools to create a productive mobile workforce for staff. Lesonsky (2010) went on to state that in order for companies to succeed in implementing remote workplaces it is important for them to apply technology solutions that enable collaboration, and have clear policies and expectations for employees. The key benefits of telecommuting are stated below.

2.5.1 Increased job satisfaction

According to Hamilton (2002), time savings per employee for not travelling in a congested area is between one and two hours a day, or more. In addition, a telecommuting work arrangement leads to increased autonomy and a flexible work schedule. Gajendran and Harrison (2007) agreed that telecommuting has a clear upside, as there are small but favourable effects on perceived autonomy, work–family conflict, job satisfaction, performance, turnover intent, and stress.

According to study undertaken by Ordendal and Roodt (2002), it was found that telecommuting has a positive impact on job satisfaction, employee motivation, and general morale. However, the available literature has not explored whether employees will change jobs for the same emoluments if the new job has telecommuting as an option. The findings of this study will help employers to understand whether telecommuting is an attractive incentive for current employees, and whether telecommuting is a consideration for potential future employees.

2.5.2 Productivity

According to Patterson et al. (2014), telecommuting cuts fuel costs and 60% of the time saved from not commuting is spent working productively. In fact, employees who telecommute are more productive than employees who are office bound. Although this

autonomy and flexibility in managing work can lead to increased productivity and satisfaction among employees, it does also present two key challenges which are difficulty in separating work and home lives, and feelings of social isolation (Hamilton, 2002).

2.5.3 Talent pool

An organisation that allows telecommuting does not have geographical boundaries and is able to access a global talent pool. A study by Offstein, Morwick and Koskinen, (2010) found that through telecommuting, organizations are able to access more talent globally. The study by Bernardino, Roglio and Del Corso (2012) found that it was easy to recruit candidates from different locations when practicing telecommuting. According to research conducted by Boyd (1996), organisations find that telecommuting is used to retain an employee after their spouse is forced to relocate to another area.

2.5.4 Environmental

According to Global Workplace Analytics (2013), there are several benefits for the environment when it comes to telecommuting, such as a reduction in carbon emissions resulting from traffic congestion. Sun Microsystems reported that its 24,000 U.S. employees participating in the telecommuting program called Open Work Program, avoided producing 32,000 metric tons of CO2 last year by driving less often to and from work. Pyöriä (2011), found that telecommuting practice is good for the environment as it resolves most issues such as congestion, pollution, etc. related to commuting. Pyöriä (2011) further suggest that telecommuting improves traffic safety. Marcus (1995) found that telecommuting reduces per capita enviromental impacts associated with commuting such as car ownership.

2.5.5 Employer and employee cost savings

Employers and employees gain many benefits from telecommuting, including a reduction in relocation costs and office space costs. According to Global Workplace Analytics (2013), Nortel estimates that their saving per employee is $100,000 on relocation costs, and Sun Microsystems saves real estate costs of $68 million a year, which is estimated at $10,000 per employee per year. Pyöriä (2011) found that telecommuting lowers the costs of running office premises and this is corroborated

Shafizadeh, Niemeier, Mokhtarian, and Salomon (1998), who states that infrastructural construction cost can be avoided when employees are allowed to telecommute.

2.5.6 Employee well-being

Reducing commuting time and providing opportunities for employees to have a better work-life balance may increase employee well-being (Blount, 2015). If an employee feels overwhelmed and stressed by the need to be constantly available to answer emails or to accommodate various time zones, then performances are likely to be less efficient and effective (Patterson et al., 2014).

As South Africa is ranked the 6th worst country in the world for traffic jams (Numbeo, 2016), telecommuting is increasingly being considered as an alternative to conventional transportation. According to Hamsa and Rani (2007), the most significant advantage of telecommuting is a reduction in an employee's commute. Hamsa and Rani (2007) went on to argue that traffic congestion has worsened in many countries, especially during morning and evening peak-hours. This leads to ill-effects, such as a reduction in man-hours, negative effects to the economy, less manoeuvrability or flexibility, and mental stress for employees (Hamsa and Rani, 2007). Factors affecting telecommuting will be discussed in the next section.

2.6 Factors influencing telecommuting

The economic impact of congestion in South Africa in 2015 is over R1 billion; Johannesburg accounts for the highest loss, with more than 1.5 million vehicles registered across the metropolitan area (Wakefield, 2015). Economic activities in South Africa during the past decade have caused road traffic congestion to accelerate annually and road infrastructure to deteriorate rapidly (Brits, 2010). Johannesburg has a 30% congestion level and it can take up to an average of 60% more time to travel in peak hours (Bruwer, 2017).

According to Van den Berg (2016), traffic in Johannesburg is worsening, and Sandton is regarded as a hotspot for congestion. As much as it has not investigated widely literature that traffic congestion can lead to propensity to telecommute, there are other

factors that influence the propensity for employees to telecommute, which this study aims to investigate. The higher an employee's level of IT skills, the more likely it is that they will be given the opportunity to telecommute, that they prefer to telecommute, and that they practice telecommuting. Employees with less autonomy are assumed to be less likely to be given the opportunity to telework (Peters, Tijdens and Wetzels, 2002).

2.7 Telecommuting and employee satisfaction

A study by Smith, Patmos and Pitts (2015) found that there is a positive relationship between conscientiousness and job satisfaction amongst telecommuters. These findings corroborated a study by Fonner and Roloff (2010), who found that telecommuting for half a week affords employees more flexibity and work-life balance, which leads to job satisfaction. Golden and Veiga (2005) also found that an employee's level of job satisfaction increases when they telecommute, but decreases at a certain point when more and more employees begin telecommuting. Although their study found a relationship between job satisfaction and telecommuting, Golden and Veiga (2005) argued that the extent of telecommuting is related to the level of job satisfaction for people who telecommute. Job satisfaction is driven by an employee's motivators, which is explained by the motivational theories described below.

2.7.1 Motivational theories

Several factors determine employee motivation and are explained using motivational theories such as Maslow's Hierarchy of needs, Herzberg theory, Goal-setting theory and Adelfer's ERG theory. Maslow's Hierarchy of Needs states that individuals move up hierarchical motivations in an order based on needs. These needs, in order of importance, are physiological, safety, belongingness, love, self-esteem and self-actualisation (King-Hill, 2015). According to Kaur (2013), physiological needs are at the bottom of the pyramid and satisfy biological needs such as food, water, air and shelter. Safety needs are at the next level once physiological needs have been satisfied, and refer to a secure working environment (Kaur, 2013). Social needs, according to Kaur (2013), are a third level need that refer to love and affiliation. Esteem needs are self-respect and approval by others and are activated after social needs are met. Self-actualisation is the highest need, which refers to one becoming capable of performing to one's full potential (Kaur, 2013).

The Herzberg theory considers two factors that lead to job satisfaction and are motivators and hygiene. Hygiene factors include working conditions, company policies and leadership styles, whereas motivator factors are those that increase job satisfaction, for example rewards and recognition. According to Amoako and Dartey-Baah (2011), hygiene factors are similar to physiological, safety and love needs, and telecommuting is a hygiene factor. The authors referred to motivator factors as being intrinsic to the job itself, such as achievement, recognition, personal growth and advancement.

Goal-setting theory refers to the impact that setting goals has on performance as they direct action and attention (Lunenburg, 2011), while Vroom's Expectancy Theory describes the relationship between an employee's personal goals and the goals of the organisation, and how the organisation rewards and recognises an individual to meet the organisation's goals (Suciu et al., 2013). Adam's Equity Theory, meanwhile, describes how individuals compare themselves to others when providing output. Individuals assess the ratio of ouput from the input of others, and when there is inequality between the output of others and themselves, the individual is destressed and works harder (Huseman, Hatfield and Miles, 1967).

The last motivational theory is Adelfer's ERG theory, which is concerned with the factors that affect human behaviour. This theory takes Maslow's Hierarchy of Needs and re-categorises it into existence needs, relatedness needs and growth needs (Caulton, 2012).

Stroh, Northcraft, Neale and Kern (2001) stated that telecommuters are motivated by the same factors as office-bound employees, i.e. a desire for achievement/ accomplishment, recognition, work, responsibility, advancement and growth. The motivational theories all have in common that they highlight factors that motivate employees, and telecommuting is one of those factors. According to Stroh et al. (2001), flexibility and control over work, schedules and lives are regarded as strong motivators, which telecommuting provides. A study by Fonner and Roloff (2010) found that telecommuters' satisfaction is due to working away from workplace stressors, although there is limited research linking telecommuting to job satisfaction.

Telecommuting is a practice that human resources managers can explore, with benefits extending beyond simply work–life balance into attracting and retaining high quality employees (Lakshmi, Nigam and Mishra, 2017). According to a study that Knight and Westbrook (1999) conducted on telecommuters, 100% of them stated that they were satisfied with telecommuting, and more than 50% would not take a job without telecommuting as an option. Research by Knight and Westbrook (1999) suggested that emphasis must be placed on the retention of employees, and that telecommuting increases job satisfaction due to an increase in work/life balance caused by flexibility and autonomy. Yet if telecommuting contributes to job satisfaction, why is the adoption rate South Africa still so low? The next section explores disadvantages of telecommuting.

2.8 Disadvantages of telecommuting

Contrary to the expectations of both academic and practitioner literature, telecommuting also has no straightforward, damaging effects on the quality of workplace relationships or perceived career prospects (Gajendran and Harrison, 2007). Gajendran and Harrison (2007) added that the negative effect of telecommuting is that co-worker relationships suffer, while Patterson et al. (2014) noted that telecommuting has a negative effect on the relationship between an employer and his/her manager. Patterson et al. (2014) argued that while the consequenses of telecommuting have not been explored fully, it can be managed effectively through human resources policies.

Pyöriä (2011) stated that the biggest risk with telework, which is also the greatest potential benefit, derives from individual employees having the opportunity to decide when and where to work. Pyöriä (2011) argued that employers lack appreciation for productivity gain obtained from working outside working hours. According to Pyöriä (2011), telecommuting does not fit everybody's life situations, e.g. some families have small children who are at home all day, and for some people the workplace is like a home. The next section discusses barriers to telecommuting.

2.9 Barriers to telecommuting

The benefits of telecommuting for both employees and employers have been discussed and are significant, however there are also barriers to telecommuting. In a

2016 global telecommuting study, policy was highlighted as a barrier to telecommuting; 85% of EMEA and 62% of North American respondents cited a lack of a telecommuting policy in the workplace (Duke, 2016). Other barriers are a lack of teamwork, collaboration and employee engagement (Blount, 2015). According to Olorunfemi (2013), barriers in Nigeria are related to the unavailability of infrastructure (power/electricity) and the high costs of purchasing the hardware that would enable a workforce to telecommute.

The obstacles or barriers to telecommuting seem to be more organisational, stemming from managers' reluctance to give up direct supervisory control of workers and their fears of shirking among workers who telecommute (Noonan and Glass, 2012). Koch and van Brackel (2010) cited privacy and security as barriers to telecommuting in South Africa, as well as compromised work standards by employees.

2.10 Chapter summary

This chapter has reviewed the extant literature on telecommuting adoption from a global, African, South African and banking industry perspective. The available literature focuses on the benefits of telecommuting from both an employer and employee perspective. There has been progress in terms of telecommuting adoption in South Africa compared to other countries, including the BRICS nations, although there is little discussion on specific industries such as the banking sector, thus this study aims to provide more information in that regard.

This chapter has reviewed both the factors influencing telecommuting and the disadvantages of telecommuting. In Johannesburg, there is a 30% congestion level and it can take up to an average of 60% more time to travel during peak hours (Bruwer, 2017). Traffic congestion is factor influencing telecommuting, however there is no literature on banking to confirm this. The chapter further discusses the relationship between telecommuting and job satisfaction. The next chapter discusses the methodology used in this study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter addresses the research methodology that was applied in this study, outlines the data collection methods used, and describes the questionnaire used to collect data. The research design is described in detail, and the objectives of the study, participants, location, sampling strategies, data collection and ethical considerations are outlined.

3.2 Aim of the study

The main aim of this study was to understand telecommuting in banking, specifically with regards to the actions that FNB business employees are willing to take to influence the adoption of telecommuting.

The objectives of this study were to:

- To determine the telecommuting adoption rate in FNB.
- To assess attitudes of employees to adopt telecommuting in FNB.
- To identify attitudes of employees towards barriers to telecommuting adoption in FNB.
- To identify factors that positively influence employees in FNB to telecommute, and
- To provide recommendations that could improve the adoption rate of telecommuting in banking.

In order to achieve these objectives, data were collected and analysed into statistical data, which were interpreted and generalised in order to provide management in the FNB business information regarding the necessary strategies to increase telecommuting adoption.

3.3 Research paradigm

Creswell (2014) stated that world views are a general philosophical orientation about the world and the nature of research that a researcher brings to their study. Worldviews

arise based on discipline orientations, students' advisors/mentors' inclinations, and past research experiences. This worldview is sometimes called the scientific method, or doing science research (Creswell, 2014). Positivism is regarded as a research strategy and approach that is rooted in the ontological principle that truth and reality are free and independent of the viewer and observer (Aliyu, Bello, Kasim and Martin, 2014).

The knowledge that develops through a post-positivist lens is based on the careful observation and measurement of the objective reality that exists in the world. Thus, in the scientific method, the accepted approach to research by post-positivists is that a researcher begins with a theory, collects data that either support or refute the theory, makes any necessary revisions, and conducts additional tests (Creswell, 2014). A positivist research paradigm was chosen for this study, which according to Aliyu et al. (2014) highlights testing and experimentation in a real-life setting. Aliyu et al. (2014) added that lab tests and experiments approximate a true or real-world setting. Creswell (2014) asserted that developing numeric measures of observations and studying the behaviour of individuals is paramount for a post-positivist.

3.4 Research design

Survey research provides a quantitative or numeric description of trends, attitudes or opinions of a population, by studying a sample of that population (Creswell, 2014). Creswell (2014) added that the choice of method is determined according to whether to specify information to be collected in advance or emerge from data collected from participants as part of the study. Quantitative research is an approach for testing objective theories by examining the relationships among variables. In qualitative research, inquirers use the literature in a manner consistent with the assumptions of learning from the participant, not by prescribing the questions that need to be answered from the researcher's standpoint (Creswell, 2014).

3.5 Population and sample of the study

Population refers to the entire group of people, events, or things of interest that the researcher wishes to investigate, while an element is a single member of the population (Sekaran and Bougie, 2003). In this study, an element was a FNB business segment employee. As of 5 March 2017, the FNB business segment had 4,561 employees in Gauteng (as per the staff list), thus this number was used as the population for the study.

A population frame is a list of all the elements in a population from which a sample can be drawn (Sekaran and Bougie, 2003). For the purposes of this study, the population frame was restricted to the FNB employees within the Gauteng province offices, according to Human Resources' records.

3.6 Sampling methods

Murgan (2015) defined a sample as a representative of people or selected respondents object to be researched upon. A sample is a subset of a population, i.e. it is comprised of some members who are selected from a population (Sekaran and Bougie, 2003). According to Sekaran and Bougie (2003), simple random sampling is a probability sampling design in which every single element in the population has a known and equal chance of being selected as a subject. Sampling is the process of selecting a sufficient number of elements from the population, so that a study of the sample and an understanding of its properties or characteristics would make it possible to generalise such properties or characteristics to the population's elements (Sekaran and Bougie, 2003).

Simple random sampling was used in order to identify 400 employees to participate in this research. The required sample was obtained using the population of 4,561 employees. According to Table 3.1, based on a 95% confidence level and a 5% margin of error, a sample of 355 was required. Factoring in that a low response rate is usually found with online surveys, the sample size was adjusted upwards to 400 and was based four question groups identified and each group will be answered by a minimum of 25 respondents. Assuming a response rate of 25%, the required number of respondents was thus 100 employees. Table 3.1 shows the size of the population, the sample and the responses received.

Table 3.1: Sample size

Element	Population	Sample	Responses
FNB Business employees	4,651	400	183

There was a total of 217 non-responses and 183 responses were received. Of the 183 responses, 111 came from telecommuters and non-telecommuters. Eleven (11) responses were obtained from non-telecommuters who were not interested in telecommuting and were not profiled for any other questions. The rest of the responses were deemed invalid responses and were excluded from analysis. The response rate was thus 45.75%.

3.7 Construction of the survey instrument

Questionnaires are a common form of data collection, particularly in the social sciences (Murgan, 2015). A questionnaire is a preformulated written set of questions for which respondents record their answers, usually within rather closely defined alternatives (Sekaran and Bougie, 2003). The questionnaire for this research was created with an informed consent document inserted as part of the questionnaire to inform participants of their right to withdraw from participating at any time.

Questions were created to accumulate the data required to meet each objective of the research study. According to Murgan, questionnaires can be filled in and completed at the respondent's convenience, which makes them a popular and generally acceptable tool for data gathering. The questionnaires were created electronically using the QuestionPro survey tool (see Appendix 3 for the questionnaire). The characteristics of the sample were the same and no criteria such as managerial level, years of experience, etc. were used to select the sample. All the participants were selected randomly when the survey questionnaire was sent out.

The structure of the questionnaire was as follows:

Section A: Demographic Information - Questions 1 to 11: this section contained questions regarding issues such as gender, marital status and employment level.

Section B: Telecommuters - Questions 1 to 21: this section contained questions for participants that are telecommuters. They covered, amongst other things, the participants' telecommuting experience, willingness and factors influencing telecommuting.

Section C: Non-telecommuters - Questions 1 to 30: this section contained questions for participants who were not telecommuting, and included questions regarding what actions employees were willing to take to influence the adoption of telecommuting, and whether they regarded telecommuting as an incentive or a perk that they require in a job.

Section D: General - Questions 1 to 4: this section contained general questions for the participants to capture their opinions on topics such as telecommuting benefits and risks, and any additional comments.

The questionnaire was designed to have distinct sections in such a way that it caters for respondents to answer questions that are relevant (telecommuters' questions were different to non-telecommuters). Additionally, non-telecommuters that were not interested in telecommuting were not provided any additional questions and therefore not profiled based on other demographical questions.

The majority of the questions on the questionnaire required the participants to choose an option according to a Likert scale, ranging from 'strongly agree' to 'strongly disagree'. The rest of the questions were open-ended, i.e. the participants could capture their own answer or list answers. The Likert scale was designed to examine how strongly subjects agree or disagree with statements (Sekaran and Bougie, 2003). The responses over a number of items tapping a particular concept or variable are then summated for every respondent (Sekaran and Bougie, 2003). Sekaran and Bougie (2003) stated that a Likert Scale is an interval scale that uses five anchors which are namely, strongly disagree, disagree, neither disagree nor agree, agree, and strongly agree.

3.8 Data collection method

According to Sekaran and Bougie (2003), data can be obtained from primary and secondary sources. Sekaran and Bougie (2003), further added that primary data refer to information obtained first-hand by a researcher on the variables of interest for the purpose of the study. Interviewing, administering questionnaires, and observing people and phenomena are the three main data collection methods in survey research (Sekaran and Bougie, 2003). The choice of data collection method depends on the facilities available, the degree of accuracy required, the expertise of the researcher, the time span of the study, and other costs and resources associated with data gathering (Sekaran and Bougie, 2003).

According to Sekaran and Bougie (2003), questionnaires are an efficient data collection mechanism when the researcher knows exactly what is required and how to measure the variables of interest, and questionnaire was chosen for this study. Participants were recruited by means of a combination of verbal and written information about the study which were communicated to the subjects. Information was disseminated to some subjects through the managers in specific areas. Of the three participant recruitment strategies applied in this study, the most successful was the one that involved information dissemination and questionnaire distribution by a shift manager, with a high overall response rate of 81% after the issuing of reminders (Khamisa, Peltzer, Llic and Oldenburg, 2014).

Subjects in the nearby offices were contacted verbally to provide information about the study, the benefits of conducting the study, and what the findings of the study will be used for. An introductory email containing information about the research and contact details was sent to the participants prior sending the questionnaire to the participants. Data were collected from 8 May 2017 to 2 June 2017. During this period, three reminder correspondences were sent to the participants to complete the survey and no additional responses has been obtained thereafter data collection process was concluded.

3.9 Data analysis

Figure 3.1 depicts the data collection and analysis process that was used in this study. Responses were solicited using survey questionnaires and the data obtained from the respondents were captured electronically using the QuestionPro tool. The data collected

from QuestionPro was captured onto the STATA version 14 and quality assurance was performed to ensure that there were no capturing errors. Responses to the questionnaire were collected using QuestionPro's electronic survey and were anonymously captured. Descriptive and inferential statistics techniques were used to analyse the data.

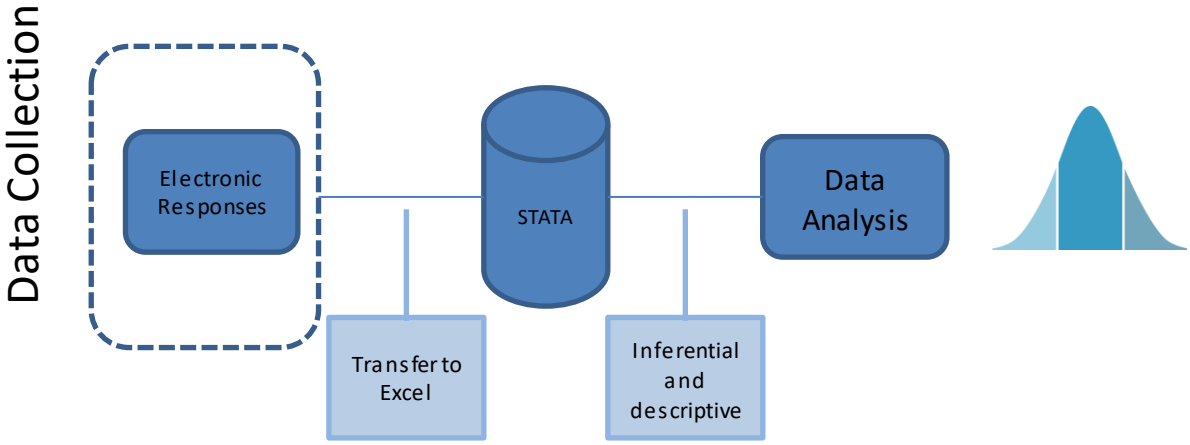

Figure 3.1: Data collection and analysis process

Source: Compiled by the author

Furthermore, data captured by the respondent using open text/open-ended questions were extracted, clustered, and arranged into groups and variables. The statistical methods used to analyse data are explained in the sections below.

3.10 Descriptive statistics

Descriptive statistics were used to present the variables of the data gathered, which were comprised of demographic, willingness to telecommute, and factors influencing telecommuting. Sekaran and Bougie (2003) explained that descriptive statistics describe the phenomena of interest by using graphs, frequency, mean, the extent of variability and dispersion.

3.11 Inferential statistics

Sekaran and Bougie (2003) described inferential statistics as understanding how variables relate to each other and testing any differences that may exist. The sub-sections below describe the inferential statistics that were conducted in this study.

3.11.1 Principal Component Analysis

Principal Component Analysis (PCA) is a statistical technique used for data reduction (STATA, 2014), and is used to pick out factors in each dimension that are critical in affecting another dimension. The objective of PCA is to find unit-length linear combinations of the variables with the greatest variance (Afifi, May and Clark , 2012). The factor loadings for the default varimax orthogonal rotation represent both how the variables are weighted for each factor, as well as the correlation between the variables and the factor. For a factor to be critical, the Eigenvalue should be greater than 1.

3.11.2 Ordinal regression analysis

When a dependent variable has more than two categories and the values of each category have a meaningful sequential order where a value is indeed 'higher' than the previous one, an ordered logit regression is used (Long and Freese, 2014). This type of ordinal regression estimates the relationships between an ordinal dependent variable and a set of independent variables. An ordinal variable is a variable that is categorical and ordered, in this case, 'strongly agree', 'agree', 'neutral', 'disagree' and 'strongly disagree'. The chi-squared (Prob > chi2) value has to be significant in order to claim that there is a relationship between two variables (Long Freese, 2014).

3.11.3 Multivariate regression analysis (MANOVA)

MANOVA is used to identify differences between unknown cases to quantify the strength between variables (Mathew, 1989). The pre-model fit statistics indicate that the overall predicted model is fit (Prob > F =0.08). These results should be interpreted with caution. The R-squared is the proportion of variance in the dependent variable (telecommuting), which can be explained by the independent variables (factors). The R-squared is 0.54, indicating that the explanatory power of the model is 54%. The better the fit, the less the estimation error. Looking at the p-value of the t-test for each predictor, each of the factors contributed to the model, with two factors that were negative. The β (coefficient) weight indicated that each added point on the independent factors increases or decreases the expected outcome for telecommuting by a certain percentage. The root mean square error (MSE) is a way of estimating the difference between the values predicted by a statistical model and the measured values from the actual system.

- **Post model estimation**

Measurement error can cause heteroskedasticity as some respondents might provide more accurate responses than others. If the error terms do not have constant variance, they are said to be heteroskedastic (differing variance). The Breusch-Pagan/Cook-Weisberg Test for Heteroskedasticity is designed to detect any linear form of heteroscedasticity (Breusch and Pagan, 1979; Cook and Weisberg, 2003), i.e. it tests the null hypothesis that the error variances are all equal. Post estimation results for the two models applying the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity indicate that there is no multi-collinearity among the independent variables and the p-value is less than 5%, hence the null hypothesis that the error variances are all not equal variance is rejected.

3.11.4 Paired t-test

T tests are a type of parametric method that can be used when the samples satisfy the conditions of normality, equal variance, and independence (Kim, 2015). The independent samples t-test compares the difference in the means from two groups to a given value. Stata calculates the t-statistic and its p-value under the assumption that the sample comes from an approximately normal distribution.

3.12 Reliability and validity

In order to ensure validity of the data obtained from this study, methods prescribed by Creswell (2014) were used. The reliability of a measure indicates the extent to which it is without bias (error free) and hence ensures consistent measurement across time and across the various items in the instrument (Sekaran and Bougie, 2003).

According to Tavakol and Dennick (2011), Cronbach's alpha provides a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1. For the purposes of this study, Cronbach's alpha was used for internal consistency. It describes the extent to which all the items in a test measure the same concept or construct, hence it is a necessary but not sufficient condition for measuring homogeneity or unidimensionality in a sample of test items. The closer Cronbach's alpha coefficient is to 1.0, the greater the internal consistency of the items in the scale (Gliem and Gliem, 2003).

Validity was established by the following process: 1) linking of the research questions on the survey questionnaire to the research objectives; and 2) establishing whether the study explores the attitudes towards telecommuting and whether actions employees are willing to take are positively influencing telecommuting adoption.

Content validity ensures that the measure includes an adequate and representative set of items that discusses the concept (Sekaran and Bougie, 2003). The more the scale items represent the domain or universe of the concept being measured, the greater the content validity (Sekaran and Bougie, 2003). Pilot testing was performed before the main study was conducted.

Face validity indicates that the items that are intended to measure a concept, do so. (Sekaran and Bougie, 2003). Assistance was sought from four colleagues from other areas in FNB to conduct a pilot test in order to measure face validity.

Criterion-related validity is established when the measure differentiates individuals on a criterion it is expected to predict. This can be done by establishing concurrent validity or predictive validity (Sekaran and Bougie, 2003). This type of validity was irrelevant to this study, therefore it was not used.

Construct validity testifies to how well the results obtained from the use of the measure fit the theories around which the test is designed (Sekaran and Bougie, 2003). This type of validity was irrelevant to this study, therefore it was not used.

Reliability means that scores from an instrument are stable and consistent (Yasar and Cogenli, 2013). The survey instrument was broadly designed to capture data from all employees, regardless of their level in the organisation. The number of sample in the study was 400 and the data collected from the study were analysed for consistency in order to ensure reliability.

3.13 Bias

Bias means that if non-respondents had responded, their responses would have substantially changed the overall results (Creswell, 2014). Pretesting involves the use of a small number of respondents to test the appropriateness of the questions and their

comprehension (Sekaran and Bougie, 2003). This helps to rectify any inadequacies, in time, before administering the instrument orally or through a questionnaire to respondents, and thus reduce biases (Sekaran and Bougie, 2003).

In order to ensure that there were no problems with data collection, questionnaires were pretested by administering a pilot survey to four FNB employees between 5 May 2017 and 7 May 2017 before data collection of data for the main study commenced, in order to test whether the questionnaire was accurate and would provide the relevant data. In this way, any potential problems with the data collection tool were resolved prior to conducting the main study, and data from sample test were checked and confirmed against the research objectives. The responses from this study were monitored week-by-week in order to identify any changes in the average responses. No changes to the average responses were noted, thus there is no bias in the results.

3.14 Ethical considerations

Sekaran and Bougie, (2003) emphasised that the confidentiality of the data obtained, and not ask for the individual or group responses to be disclosed to them, or ask to see the questionnaires. Appendix 1 contains the informed consent and Appendix 4 contains gatekeeper letter which was obtained in order to comply with the University of Kwazulu-Natal (UKZN) ethics requirements. The details regarding the nature of the study and the purpose of the study were provided to the participants. The data collected in QuestionPro version 17.2 was downloaded and then uploaded into STATA version 14, and were locked away in an access-controlled location.

Participant of the study were anonymous (did not identify themselves) and the findings of the study will be treated confidentially. The participants were notified of their right to withdraw or opt out of the study at any point during the survey. The research abided by UKZN's ethical guidelines for conducting research, and as per this process, ethical clearance was sought and granted by the registrar's office at UKZN on 19 April 2017.

A gatekeeper letter was obtained granting permission to conduct this study, and informed consent forms were obtained from each participant. Appendix 1 contains the

informed consent letter, Appendix 3 contains the gatekeeper letter, and Appendix 4 contains the ethical clearance approval certificate.

3.15 Chapter summary

This chapter highlighted the research methodology that was used, as well as the population, elements, sample and location of the study. This chapter further discussed the research philosophy, research design, research methods, sampling strategies and data collection method employed. The research instrument content was discussed in detail by covering the goodness of measure in terms of reliability and validity, including pretesting of the research instrument. The following chapter discusses the study results and data analysis.

CHAPTER FOUR: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the results and findings from the study based on the analysis of the data that were obtained from the participants by means of a questionnaire, to investigate the attitudes of employees towards telecommuting adoption in a banking firm in South Africa. The data collected were analysed according to the sequence of the questionnaire and the questions were categorised according to question groups for ease of understanding. Section 4.2 is comprised of descriptive statistics in the form of bar graphs and tables, Section 4.3 summarises central tendency (mean) and measure of dispersion (standard deviation) descriptive statistics, Section 4.4 presents general comments and suggestions, Section 4.5 discusses the reliability of the data, Section 4.6 presents the results of the normal distribution test, Section 4.7 (principal component analysis), 4.8 (ordinal logistical regression), 4.9 (paired t test), Section 4.10 (MANOVA) presents the inferential statistics conducted and Section 4.11 summarises the chapter.

4.2 Quantitative data – descriptive statistics

According to Larson (2006), descriptive statistics is defined as presenting data in tables and graphs representing frequencies, means and standard deviations. The question sets were arranged according to demographic information, including gender, marital status, where the employees were commuting from, how they were commuting, telecommuters' questions and non-telecommuters' questions. The survey was administered to the sample of 400 employees, and 183 participants responded. The questions were designed in such a way that the survey was terminated if the participants were non-telecommuters and were not interested in telecommuting and therefore were not profiled for the other demographic questions such as gender, marital status and place of residence.

4.2.1 Gender

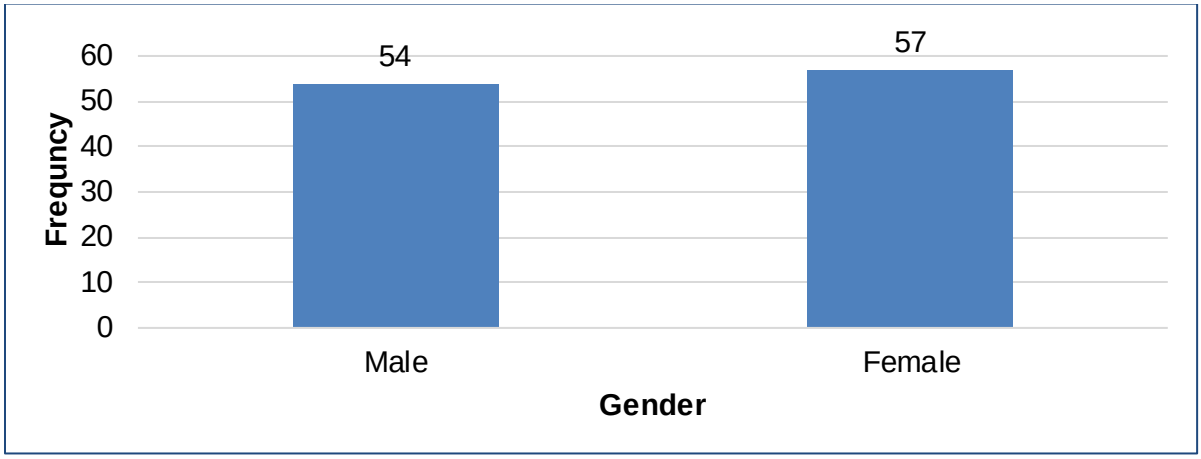

Figure 4.1: Respondents' gender

The graph indicates gender and there were 57 female (51.4%) and 54 male respondents (48.6%). The number of males and females were fairly even, thus it can be concluded from the data that both genders were sufficiently represented.

4.2.2 Marital status

Marital status is important in understanding the participants' demographics, thus Figure 4.2 depicts the marital status of the telecommuting and non-telecommuting participants. The purpose of the question was to determine the spread of participants by marital status.

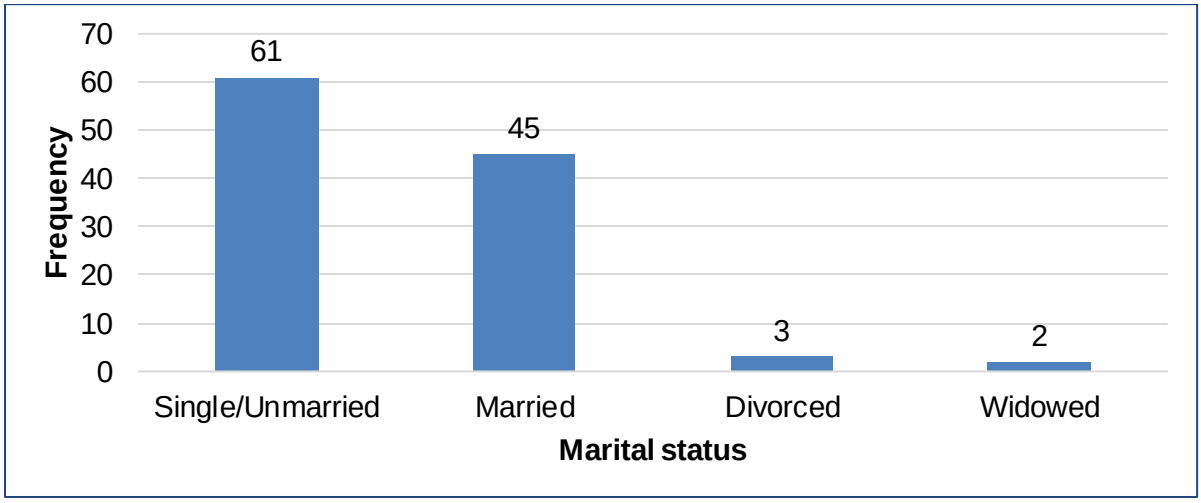

Figure 4.2: Respondents' marital status

Figure 4.2 indicates that slightly more than half of the respondents were single or unmarried (55%), followed by those who were married (40.5%). A few respondents were either divorced or widowed.

4.2.3 Employment level

Employment level was important in the study and Figure 4.3 depicts employment of participants that are categorized as telecommuters and non-telecommuters. The purpose of this question was to understand the demographic characteristics of the respondents in terms of employment level.

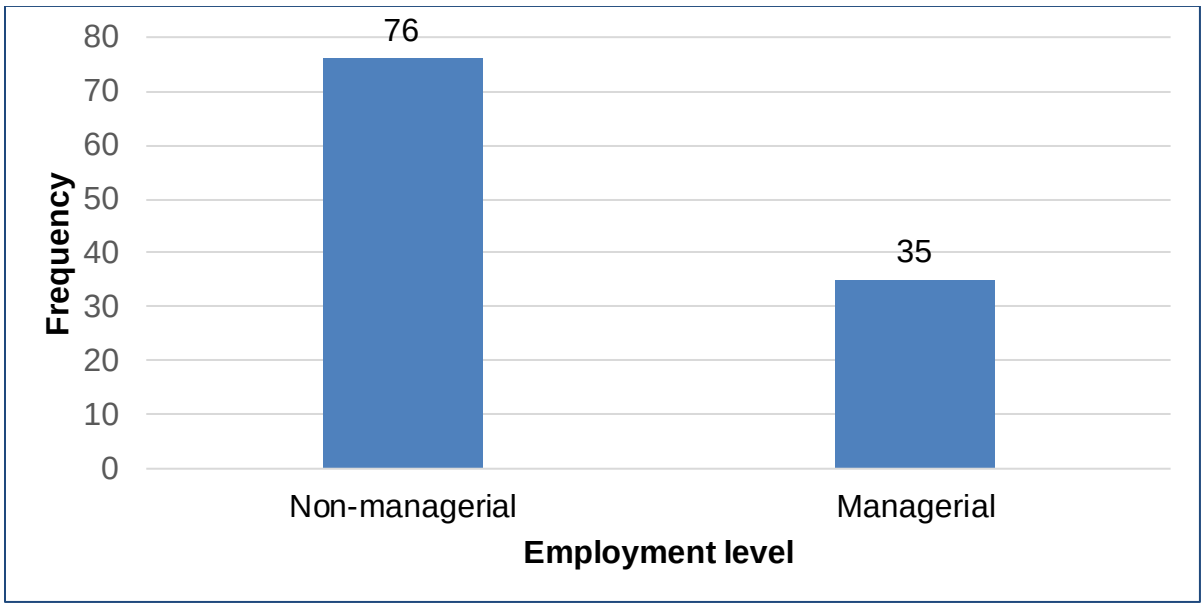

Figure 4.3: Respondents' employment level

Figure 4.3 shows that almost seven out of every ten respondents (68.5%) were non-managerial, while the remainder were managers. It can be concluded that employees were sufficiently represented during the survey as this study focused on employees.

4.2.4 Tenure

Number of years employment was important in the study and Figure 4.4 depicts number of years (of employment) of participants categorized as telecommuters and non-telecommuters.

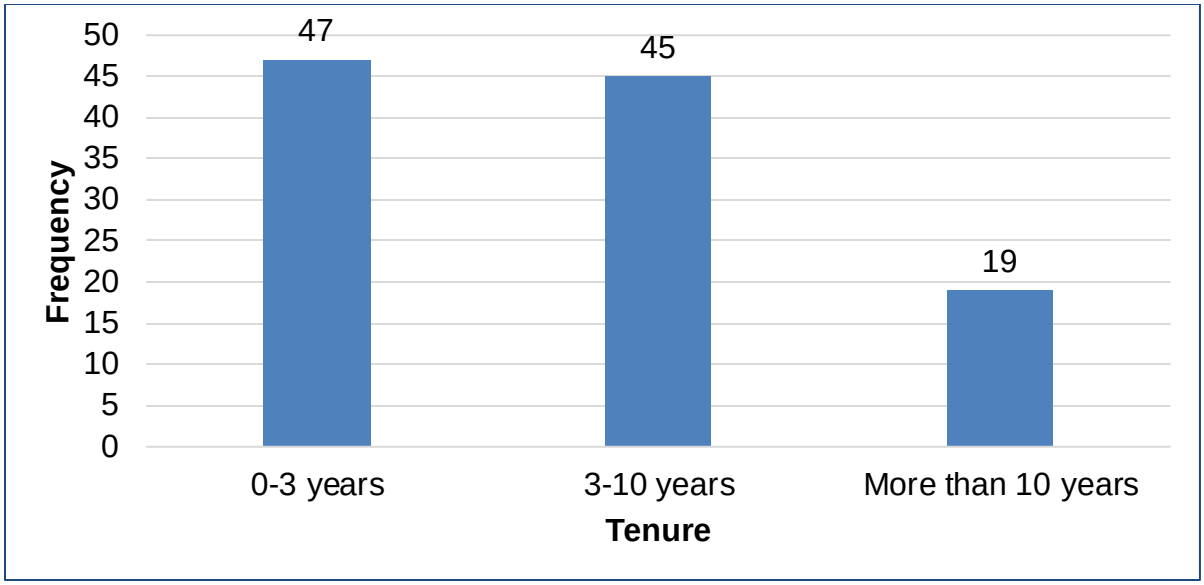

Figure 4.4: Respondents' tenure

It can be seen in Figure 4.4 that 42.3% of the respondents had been employed at FNB for up to three years. A similar proportion (40.5%) had been at FNB for between three and ten years, while the minority (17.1%) had been there for over ten years.

4.2.5 Place of residence

Figure 4.5 depicts geographical area of participants that are categorized as telecommuters and non-telecommuters. The main purpose of this question was to determine the geographical dispersion of the participants and which areas in Gauteng they were travelling from.

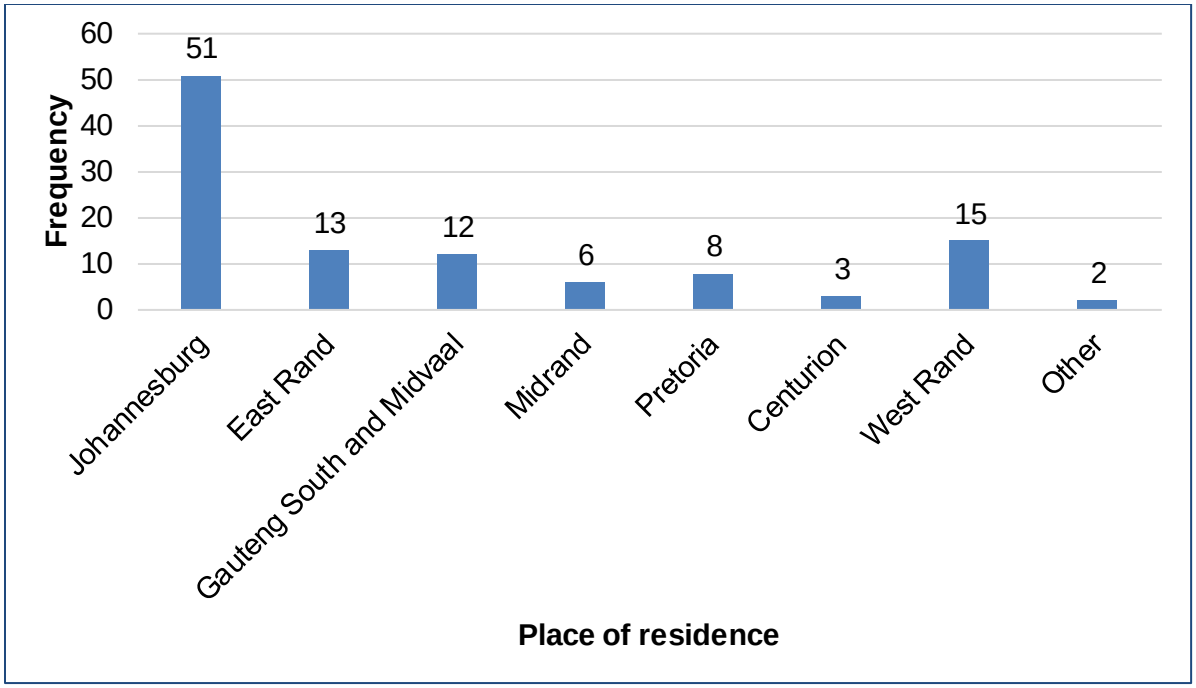

Figure 4.5: Respondents' place of residence

The results in Figure 4.5 show that a larger proportion of the respondents lived in Johannesburg (40%), followed by those on the West Rand (13.6%), East Rand (12%) and Midvaal (11%). Very few respondents were from Midrand, Pretoria, and Centurion. Just 1.8% of the respondents came from Innerdale and Johannesburg North. The participants travelled an average of 33.4 kilometres to get to the office.

4.2.6 Mode of transport

The main purpose of this question was to determine what modes of transport participants used to travel to work.

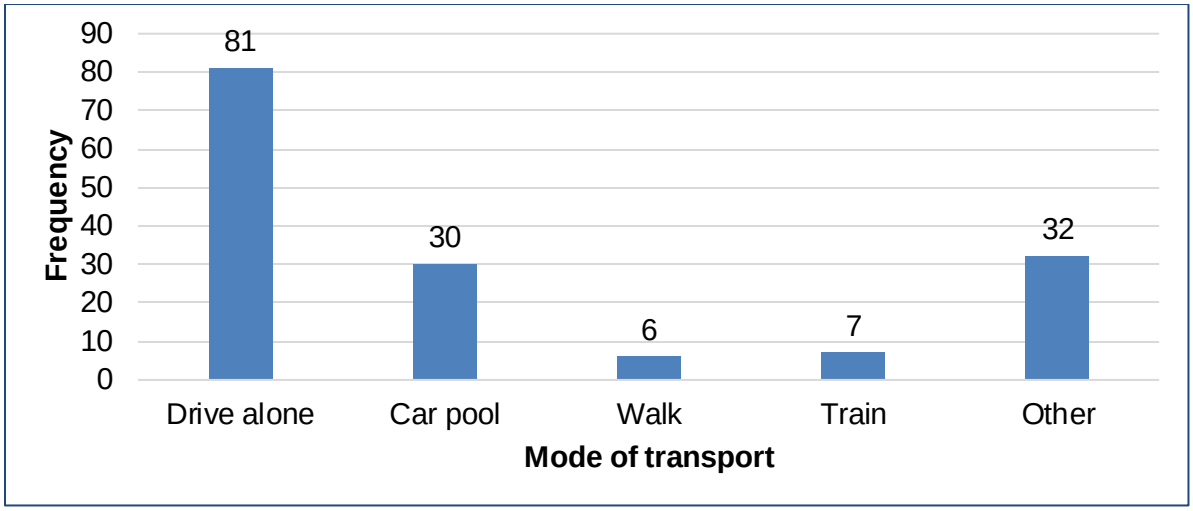

Figure 4.6: Respondents' mode of transport

Figure 4.6 depicts that slightly over half (52%) of the respondents drove alone to the office, while 19% had a car pool. Very few walked (3.8%) or used a train (4.5%), but 20.5% used taxis and buses. Majority of modes of transport selected and are susceptible to traffic congestion are relevant for the study.

4.2.7 Starting time at work

The rationale for this question was to investigate what the participants' starting time was in order to understand if they had any flexibility - either formally or informally.

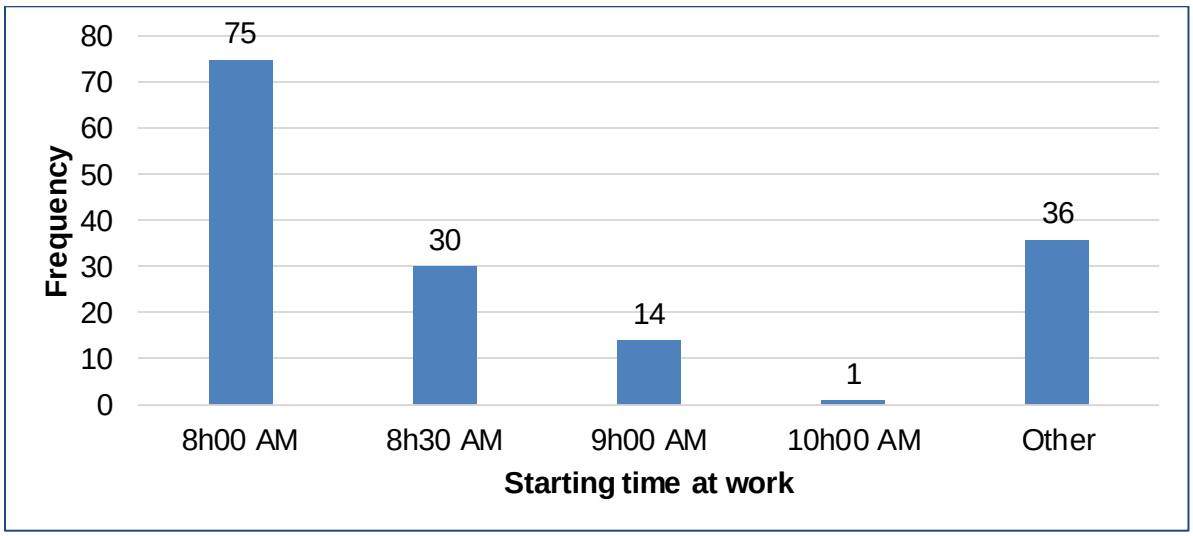

Figure 4.7: Respondents' starting time at work

Figure 4.7 shows that two thirds of the respondents had a starting time of between 8h00 and 8h30; very few started after 9h00. These results indicate that the employees are provided with a flexible time arrangement.

4.2.8 Telecommuting adoption rate

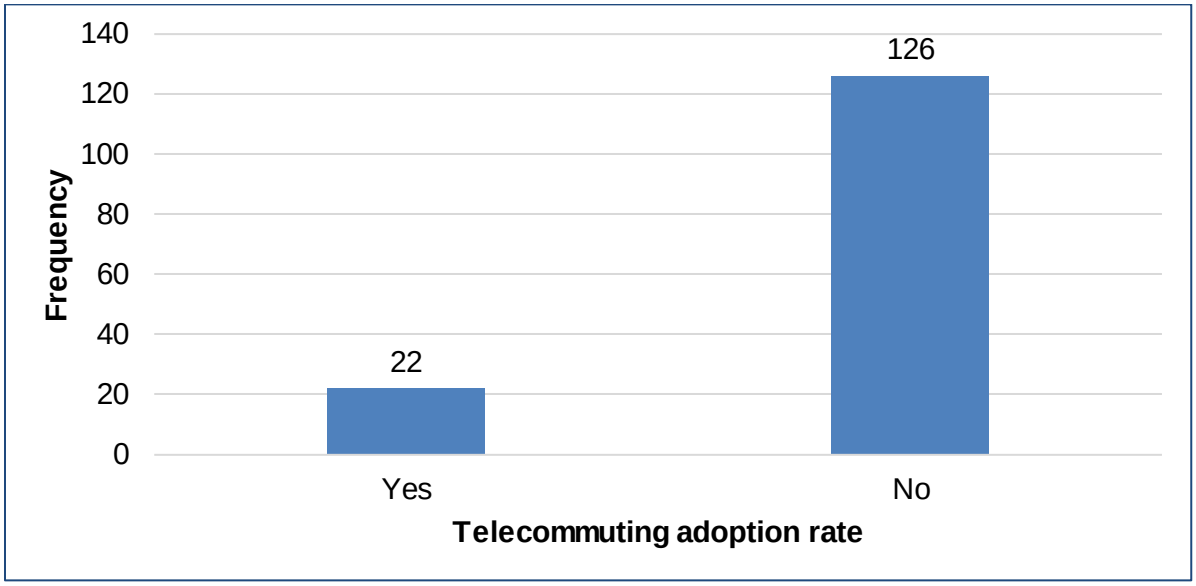

Figure 4.8: Telecommuting adoption rate

Figure 4.8 indicates that eight out of ten (85.2%) of the respondents did not telecommute. The purpose of this question was to evaluate the current state of telecommuting and the adoption rate in FNB. The telecommuting adoption rate in FNB is lower than the national average of 32% for full-time and 82% for part-time workers.

4.2.9 Telecommuting frequency

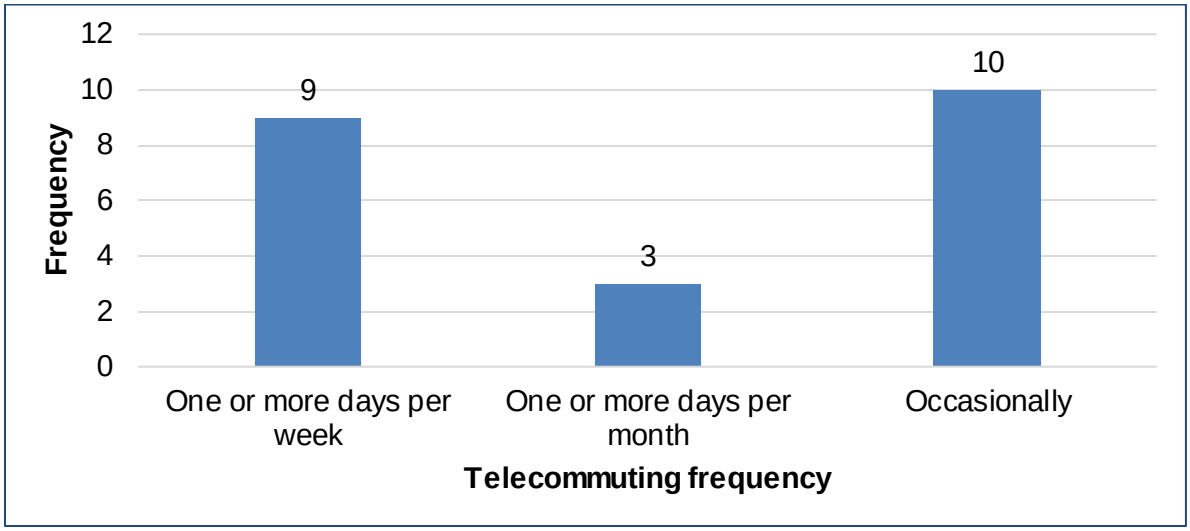

Figure 4.9: Telecommuting frequency

Figure 4.9 depicts the number of times participants telecommute and indicates that almost half of the respondents (45.5%) occasionally telecommute, followed by those who commute one or more days per week (40.9%). A few (13%) of the respondents reported commuting one or more days a month. These results show that the participants who are telecommuting are doing so frequently.

4.2.10 Telecommuting arrangements

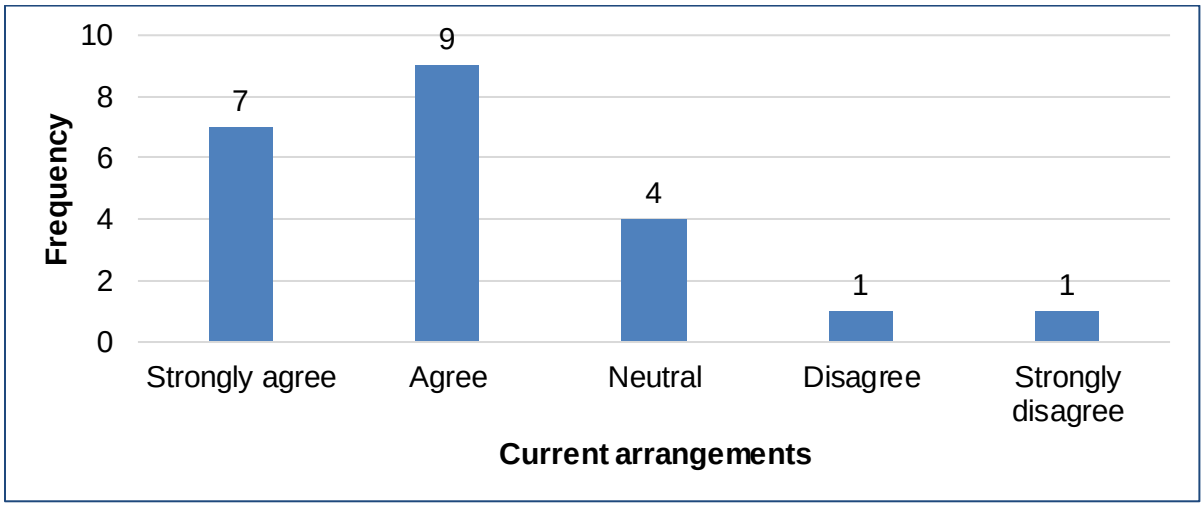

Figure 4.10: Telecommuting arrangements

Figure 4.10 shows the telecommuting respondents' views regarding their telecommuting arrangement with the organisation in terms of whether it is working for them or not. The

results show that 72.7% (31.8% strongly agree and 40.9% agree) of the participants responded positively that their current telecommuting agreement is working for them.

4.2.11 Telecommuting agreement type

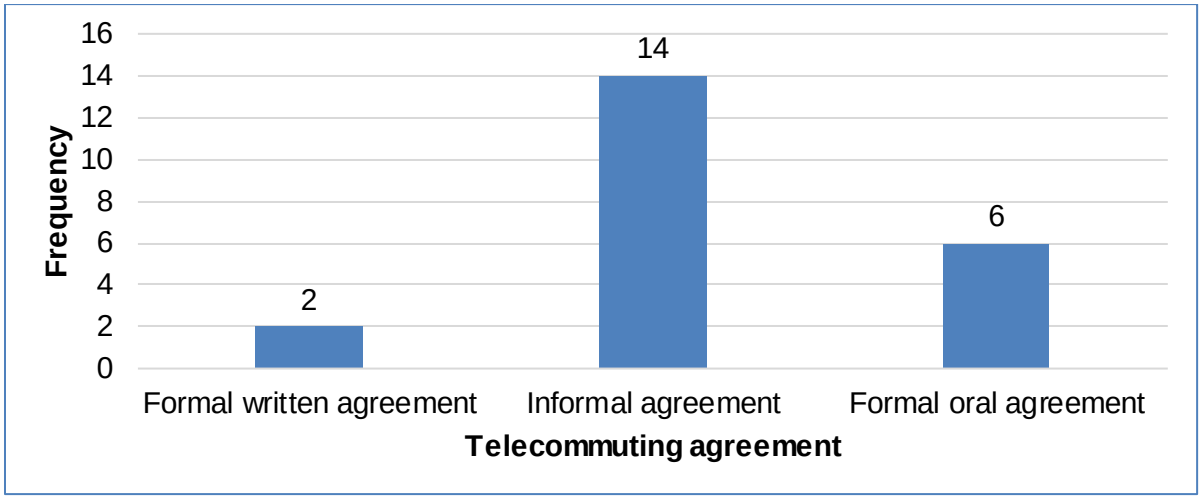

Figure 4.11: Telecommuting arrangement type

The purpose of this question was to understand what agreement the company has put in place for the employees who telecommute. Figure 4.11 indicates that 63.6% of the respondents had an informal telecommuting agreement with the company, followed a quarter who had a formal oral agreement. Very few had a formal written agreement.

4.2.12 Telecommuting tools

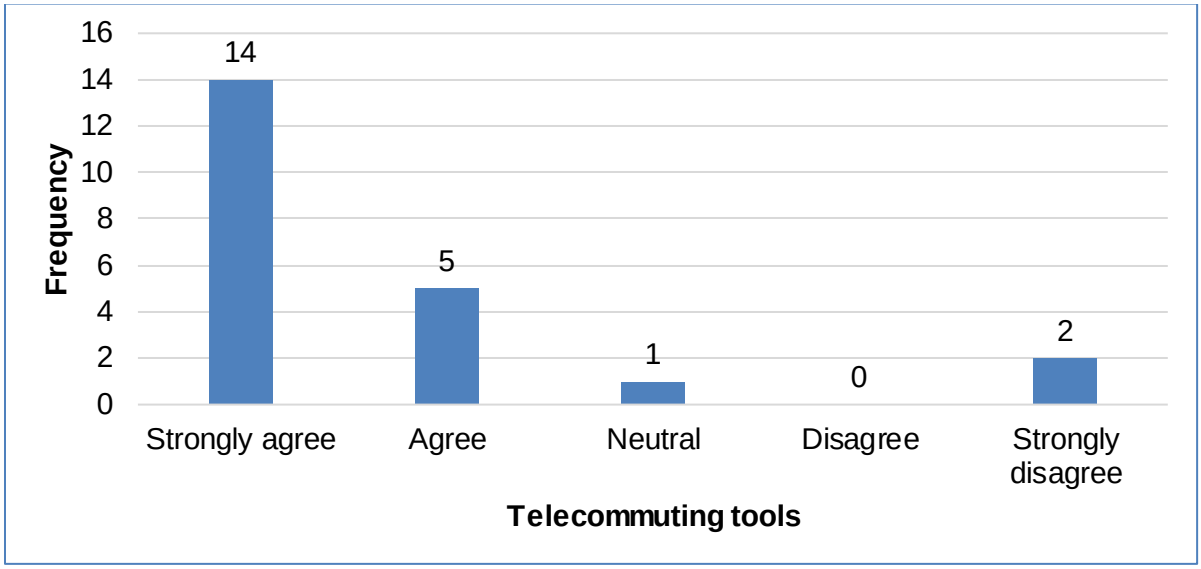

Figure 4.12: Telecommuting tools for employees

Figure 4.12 depicts the responses regarding whether non-telecommuting respondents have all the tools they need to telecommute. The rationale for this question was to investigate whether the participants have the necessary tools for telecommuting. 86.3% of the telecommuting respondents agreed, while 4.5% and 9.1% indifferent and strongly disagreed, respectively.

4.2.13 Telecommuting eases traffic congestion

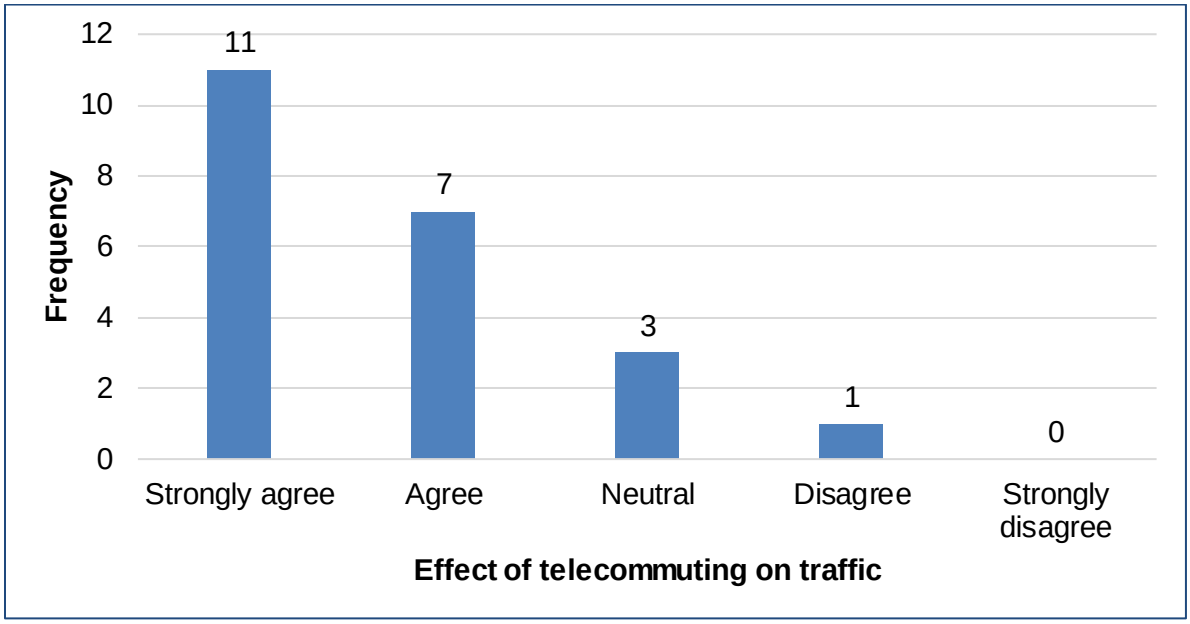

Figure 4.13: Telecommuting effect on traffic

The purpose of this question was to investigate whether telecommuters think that telecommuting eases traffic congestion. Figure 4.13 highlights that 81.8% of respondents felt that they would recommend telecommuting to ease traffic congestion, however 13% were undecided and 4.5% disagreed.

4.2.14 Telecommuters spend more time on tasks

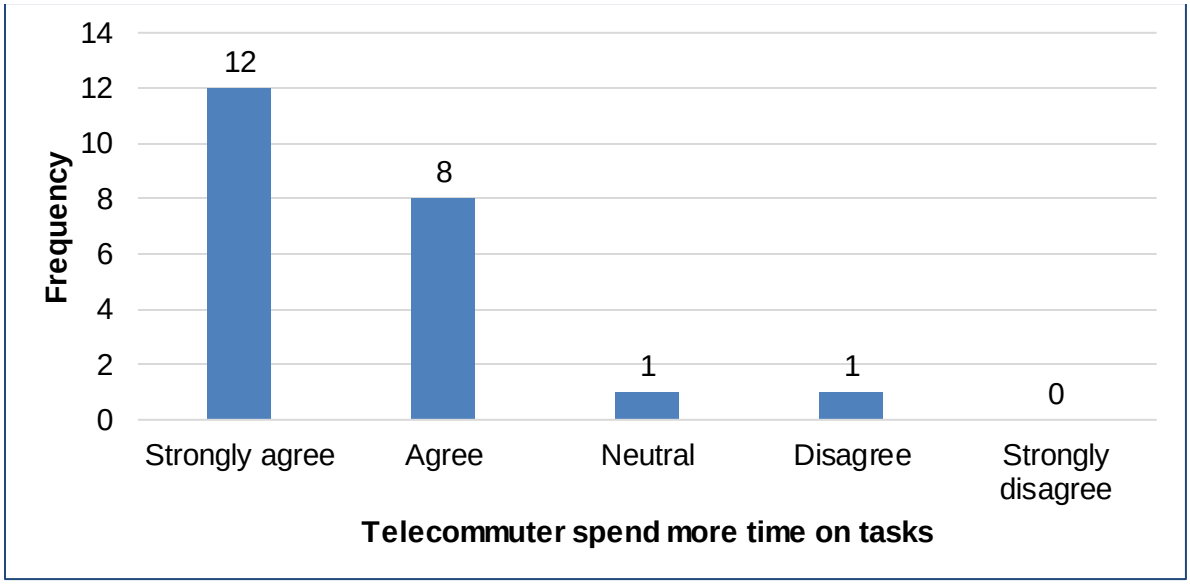

Figure 4.14: Telecommuters spend more time on tasks

Figure 4.14 shows that the vast majority (90.9%) of respondents felt that telecommuting helps them spend more time working on tasks and objectives, and that because of telecommuting their productivity has increased. The rationale of this question was to understand if telecommuting provides the participants more time to spend on tasks and objectives.

4.2.15 Telecommuting improves productivity

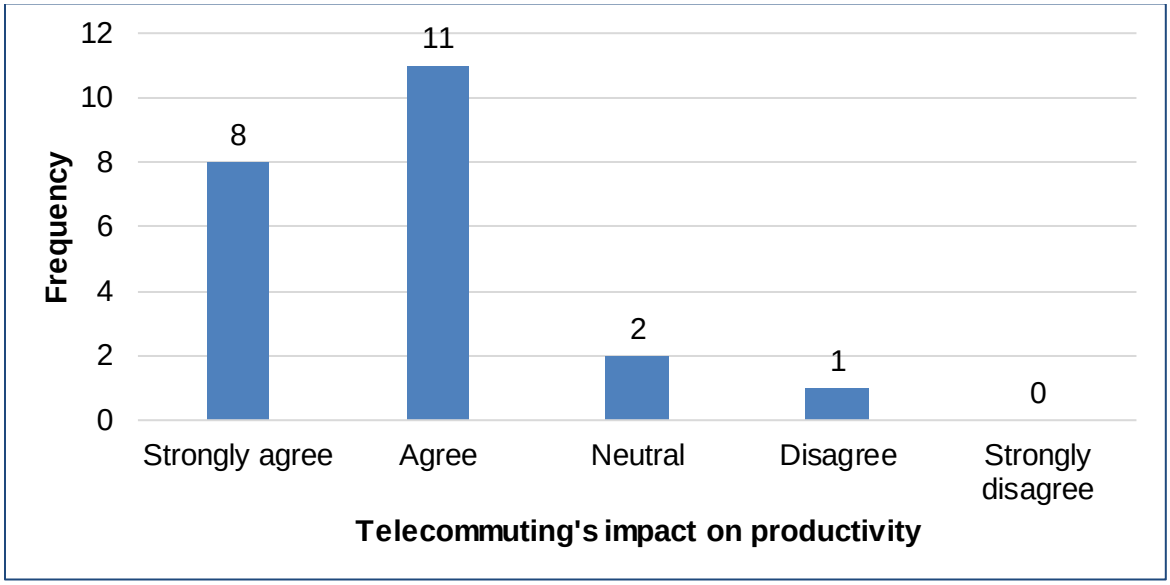

Figure 4.15: Telecommuting's impact on productivity

The purpose of this question was to investigate whether the participants' productivity levels have increased because of telecommuting. Figure 4.15 shows that the vast majority (92.9%) felt that telecommuting has helped to increase their productivity, while 9% were indifferent and 4.5% disagreed.

4.2.16 Telecommuting's impact on time saving

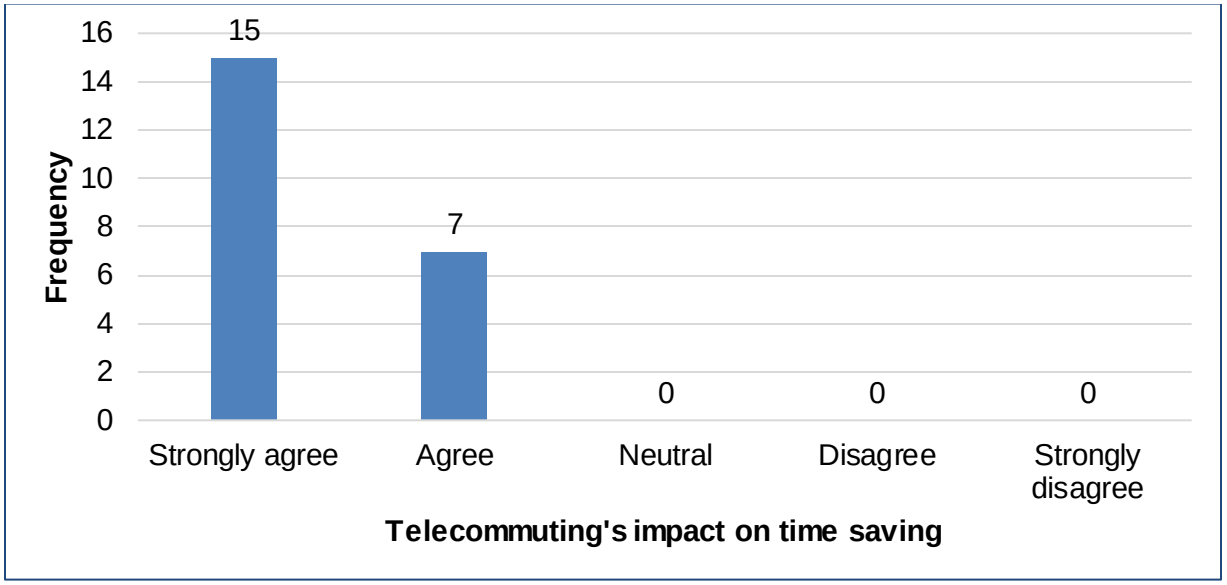

Figure 4.16: Telecommuting saves travelling time

The rationale of this question was to investigate whether telecommuters believe that telecommuting saves travelling time. It can be shown in Figure 4.16 that all the respondents agreed that telecommuting helps them to save on travelling time, with almost seven out of ten strongly agreed and three out of ten agreed. The data obtained from this question were supported by the time savings of 2 hours on average per respondent that they use to travel based on the question, "how many hours do you spend travelling to and from work per day?" which equate to a savings of R1,170 per month on travelling costs.

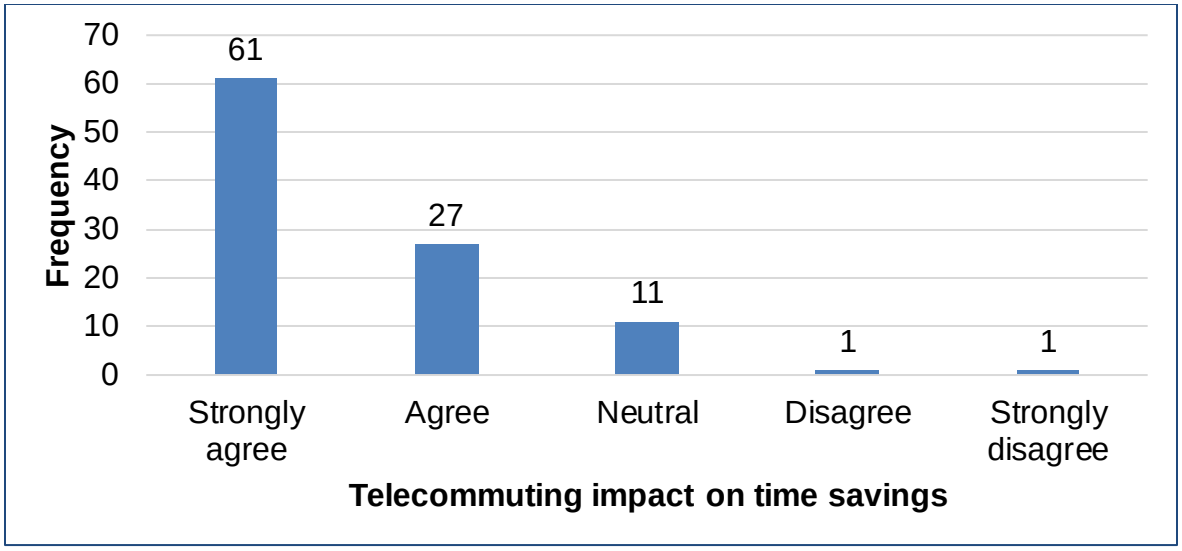

Figure 4.17: Telecommuting will save travelling time

Figure 4.17 shows that the majority (87%) of non-telecommuters believe that telecommuting would help them save on travelling time, while 12% were unsure of the benefits, 1% disagreed and 1% strongly disagreed.

4.2.17 Telecommuters spend more time on work

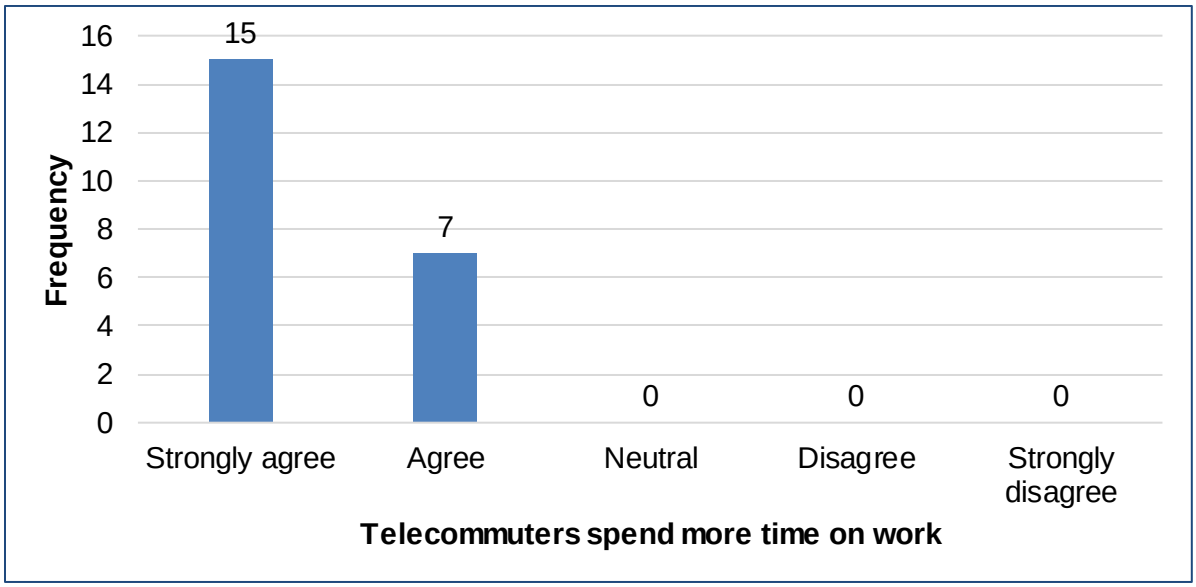

Figure 4.18: Telecommuters spend more time on work

The main purpose of this question was to understand whether telecommuters use the travelling time they save to perform work. Figure 4.18 shows that the majority (90.9%) use the travel time to do work, none were neutral, disagreed and strongly disagreed.

Although no specific question was asked regarding the time savings, an average of two hours a day per participant was provided based on “How many hours do you spend travelling to and from work per day?”, although the question was asked to both telecommuters and non-telecommuters.

4.2.18 Telecommuting impact on work-life balance

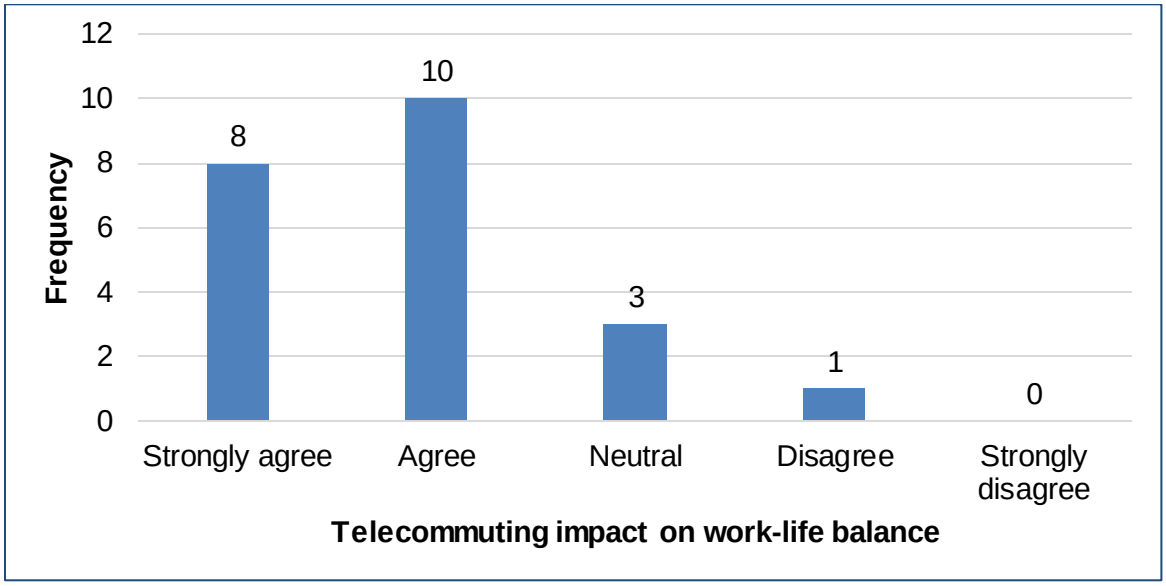

Figure 4.19: Telecommuting impact on work-life balance

The rationale of this question was to investigate whether the respondents believed that telecommuting helps improve work-life balance. The majority (81.8%) felt that telecommuting improves work-life balance, as depicted in Figure 4.19.

4.2.19 Use of personal tools

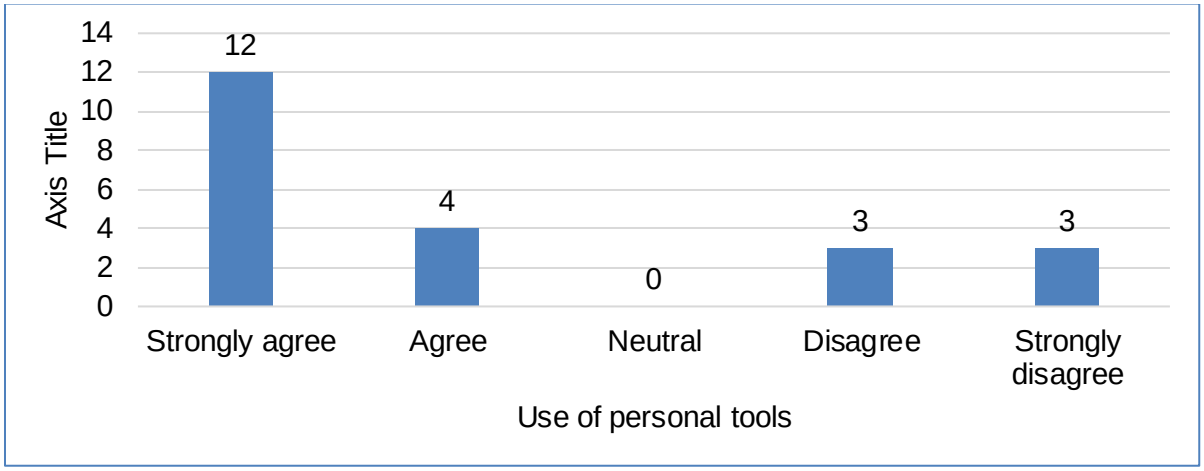

Figure 4.20: Usage of personal tools to telecommute

The purpose of this question was to investigate whether employees are willing to make sacrifices in order to telecommute, i.e. by using their own hardware and tools. From Figure 4.20, it can be seen that more than 82% of participants (55% strongly agree and 27% agree) use their own personal devices to telecommute, yet 18% strongly disagreed. Comparing the results of the same question below in Figure 4.21 but for non-telecommuters, 45% (23% strongly agree and 22% agree) would be willing to use their own hardware and spend their own data in order to telecommute, 25% were neutral, 17% disagreed and 13% strongly disagreed.

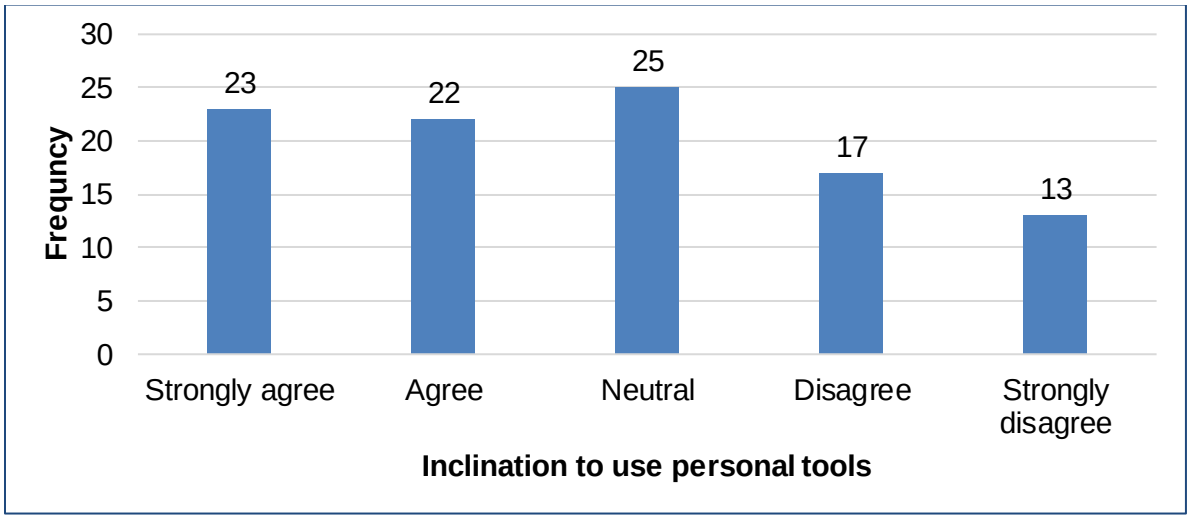

Figure 4.21: Inclination to use personal tools to telecommute

(Note: Six missing values, no response due to data recording inconsistencies in QuestionPro)

4.2.20 My job does not require me to be in the office

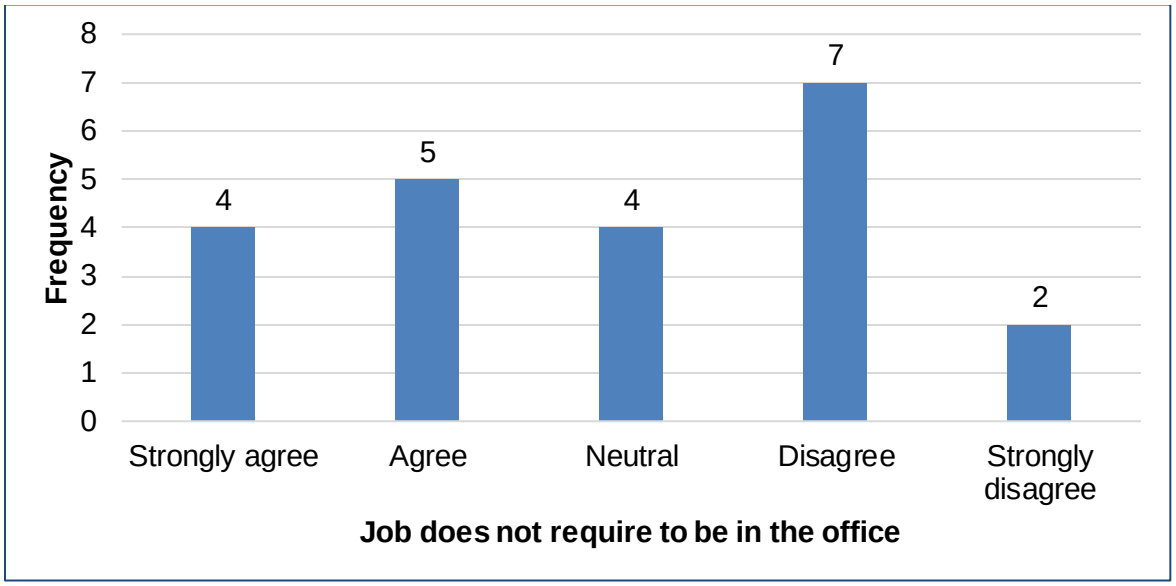

Figure 4.22: My job does not require me to be in the office

The aim of this question was to investigate whether the respondents are required to be in the office or not. Figure 4.22 highlights that 40.9% of the respondents (18.2% strongly agree and 22.7% agree) think that there is no need for them to physically be in the office to execute their job, while 18.2% were neutral, 31.8% disagreed and 9.1% strongly disagreed. This question did not take into account the nature of the work of the participants, which determines whether they have to be in the office or not.

4.2.21 Collaboration amongst telecommuters

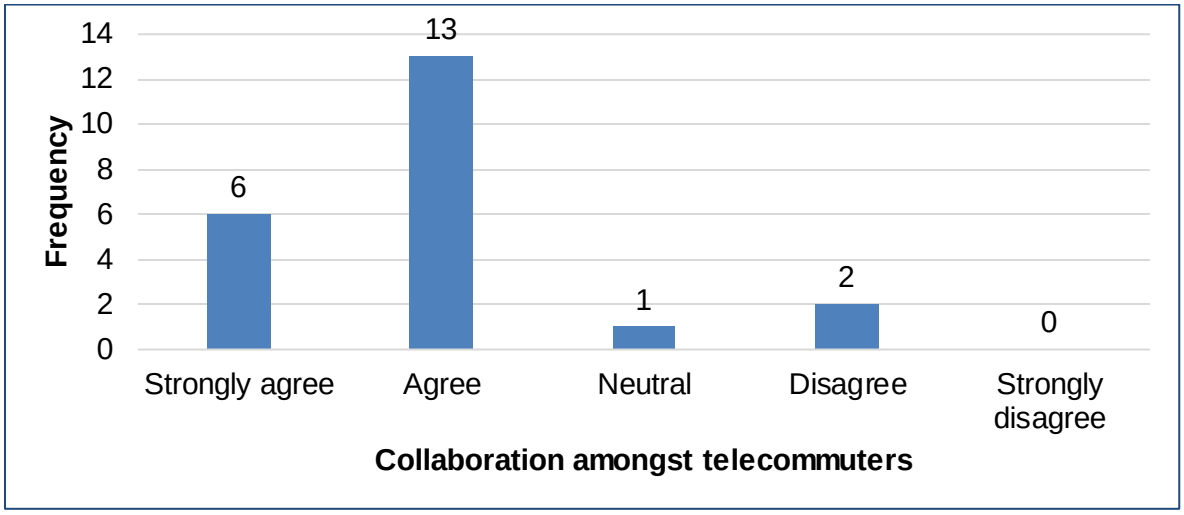

Figure 4.23: Collaboration amongst telecommuters

Figure 4.23 shows the collaboration that respondents are able to do while telecommuting. The rationale for this question was to investigate whether respondents are able to collaborate with colleagues and customers remotely. The majority of the telecommuters (86.4%) indicated that they are able to collaborate remotely.

4.2.22 Telecommuting is beneficial

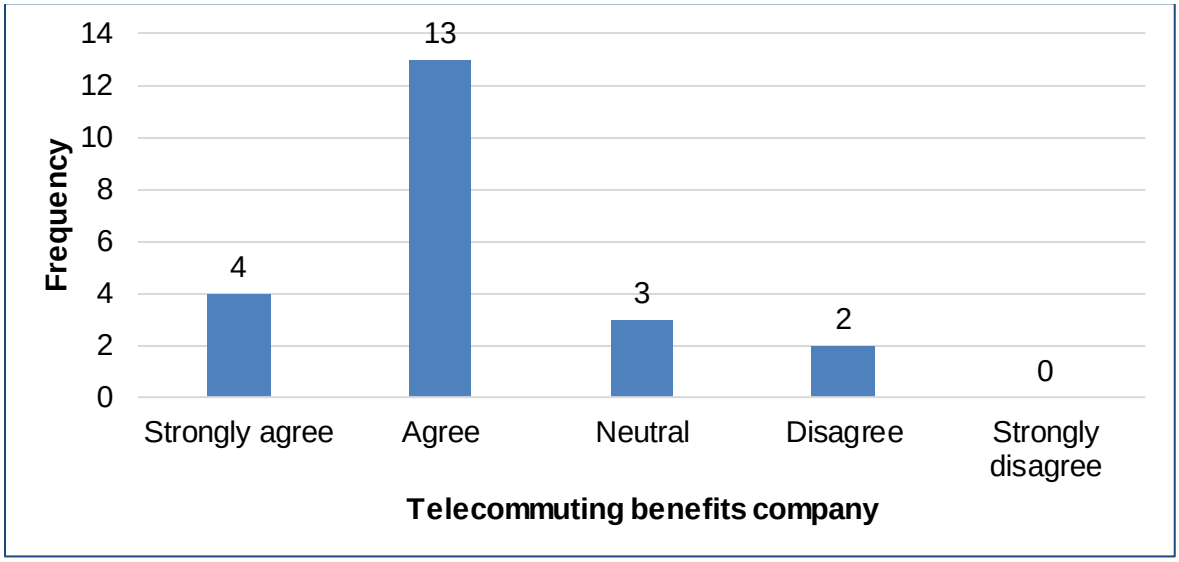

Figure 4.24: Telecommuting benefits company

The rationale for this question was to investigate whether the respondents think that telecommuting is beneficial for the organisation. Figure 4.24 shows that the majority believe it is beneficial (77. 3%), while the remainder were neutral or disagreed.

4.2.23 Telecommuting and job satisfaction

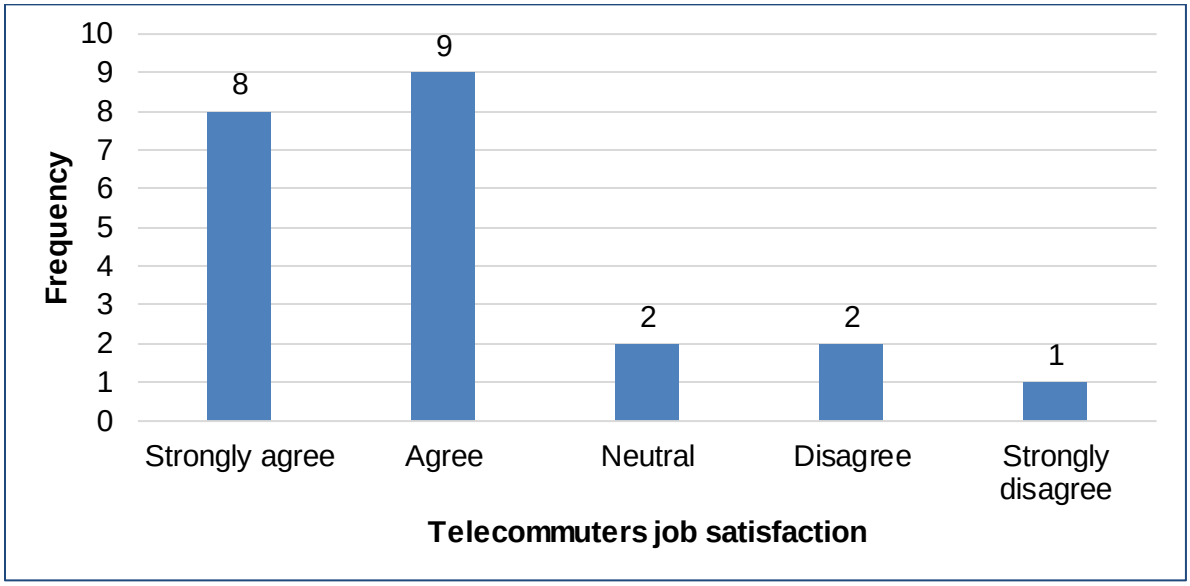

Figure 4.25: Telecommuters' job satisfaction

The purpose of this question was to establish whether telecommuting participants place value on telecommuting when making future employment decisions. Figure 4.25 depicts that over three-quarters (77.3%) considered telecommuting to be an important factor to consider when assessing future employers, while the rest of the respondents were neutral or disagreed. Figure 4.26 below shows the responses from non-telecommuters for the same question, which resulted in 42% strongly agreeing, 31% agreeing, 16% being neutral, 11% disagreeing and 0% strongly disagreeing.

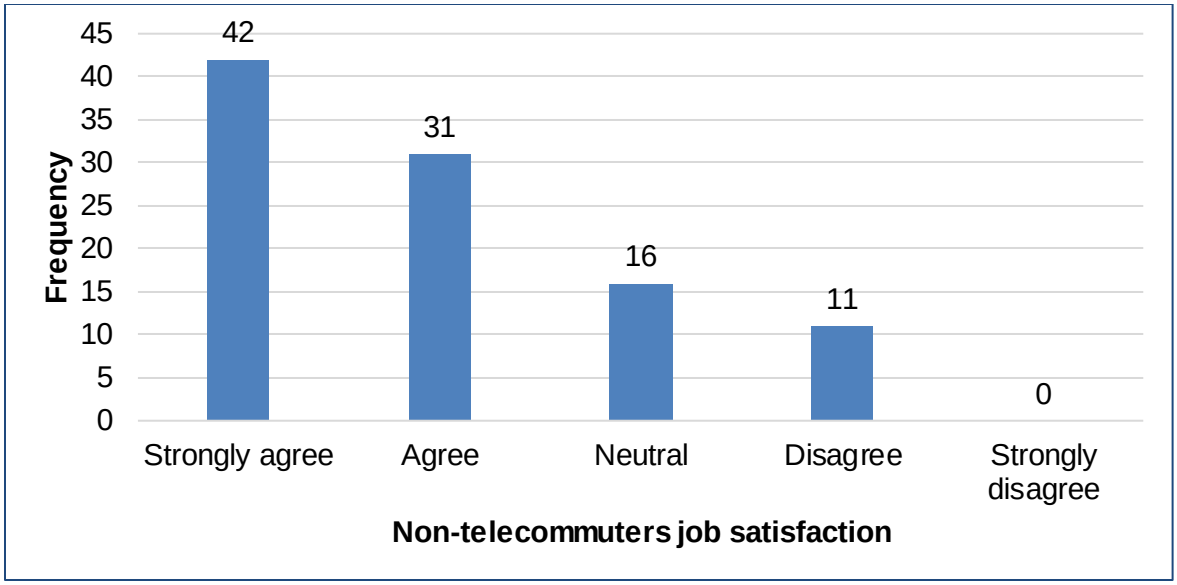

Figure 4.26: Non-telecommuters Job satisfaction

(Note: Six missing values, no response due to data recording inconsistencies in QuestionPro.)

4.2.24 Telecommuting as a perk

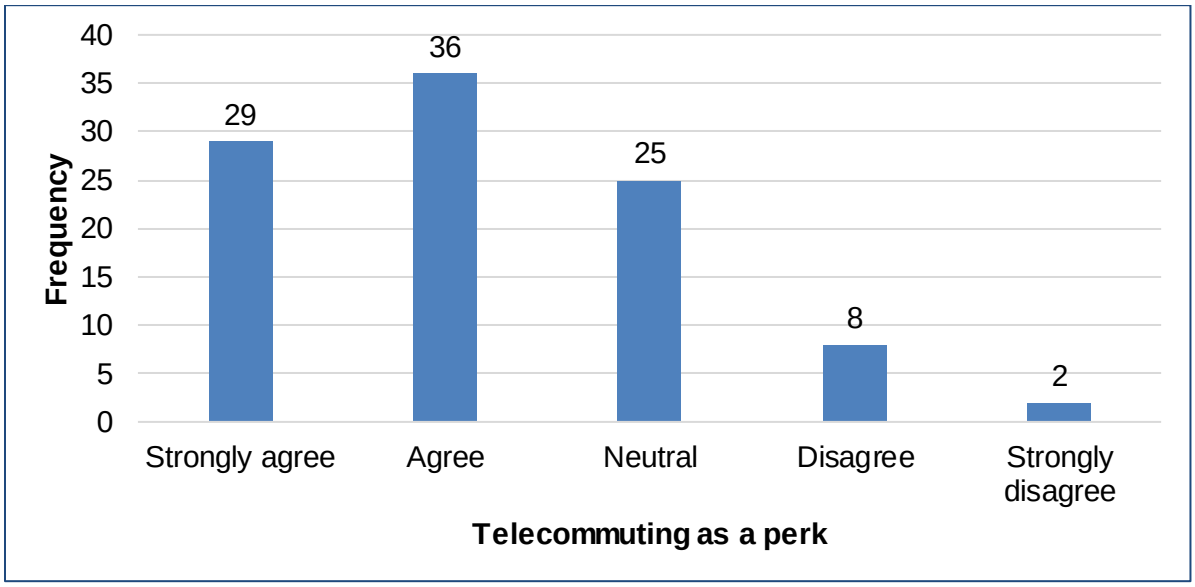

Figure 4.27: Telecommuting as a perk – non-telecommuters

(Note: Six missing values, no response due to data recording inconsistencies in QuestionPro.)

The rationale for this question was to ascertain whether participants regard telecommuting as a perk that they look for in a job. Figure 4.27 shows that most respondents (61%) felt that they would consider changing their job for the same

emoluments if the job offered telecommuting, yet 23.6% were indifferent and 9.4% disagreed. Table 4.27 shows that 65% of the respondents felt that they regard telecommuting as a perk they require in a job, with a quarter being neutral.

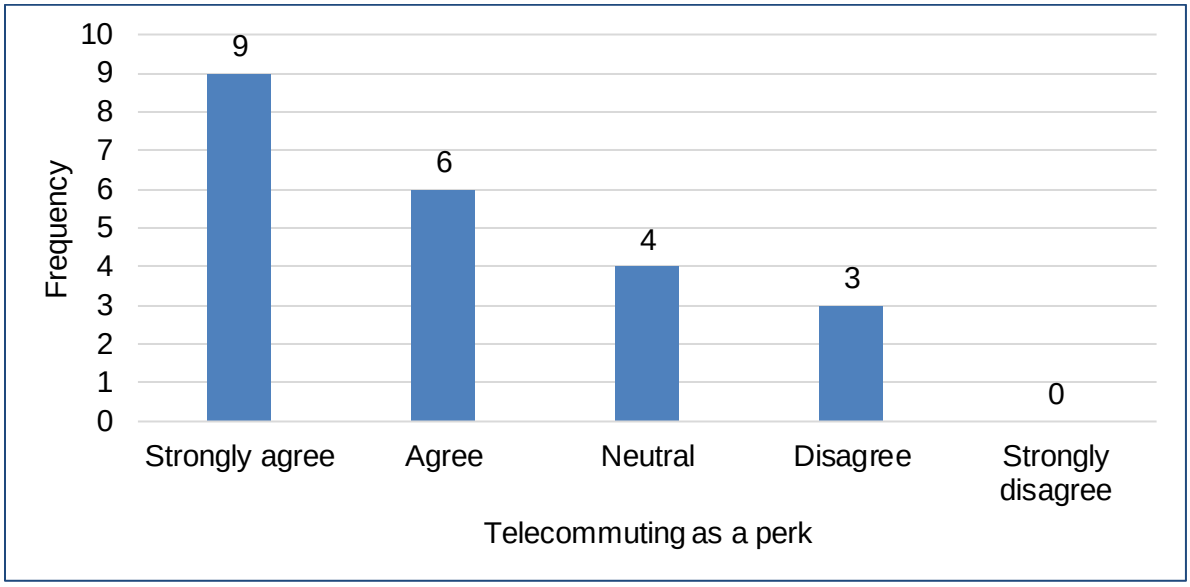

Figure 4.28: Telecommuting as a perk –telecommuters

Figure 4.28 shows the responses to the question above when it was posed to non-telecommuters. It can be concluded from the results obtained from both telecommuters and non-telecommuters that the majority (68%) of respondents value telecommuting and consider it a necessary perk.

4.2.25 Telecommuting desirability

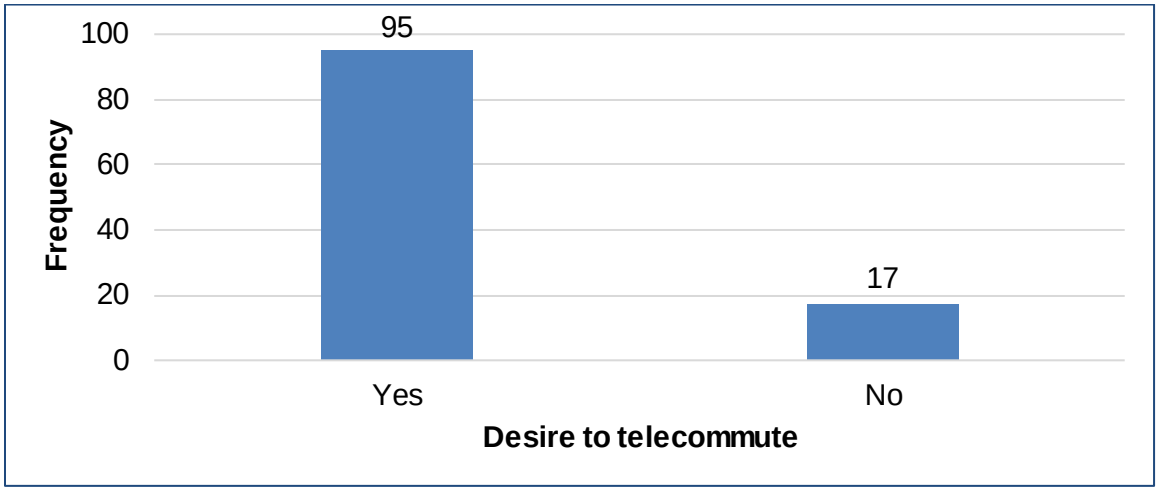

Figure 4.29: Desire to telecommute

The main purpose of this question was to understand from the non-telecommuters whether they would be willing to telecommute if given the opportunity. Figure 4.29 shows that out of the non-telecommuters, 89.6% would like to telecommute and 10.4% would not.

4.2.26 Telecommuting frequency

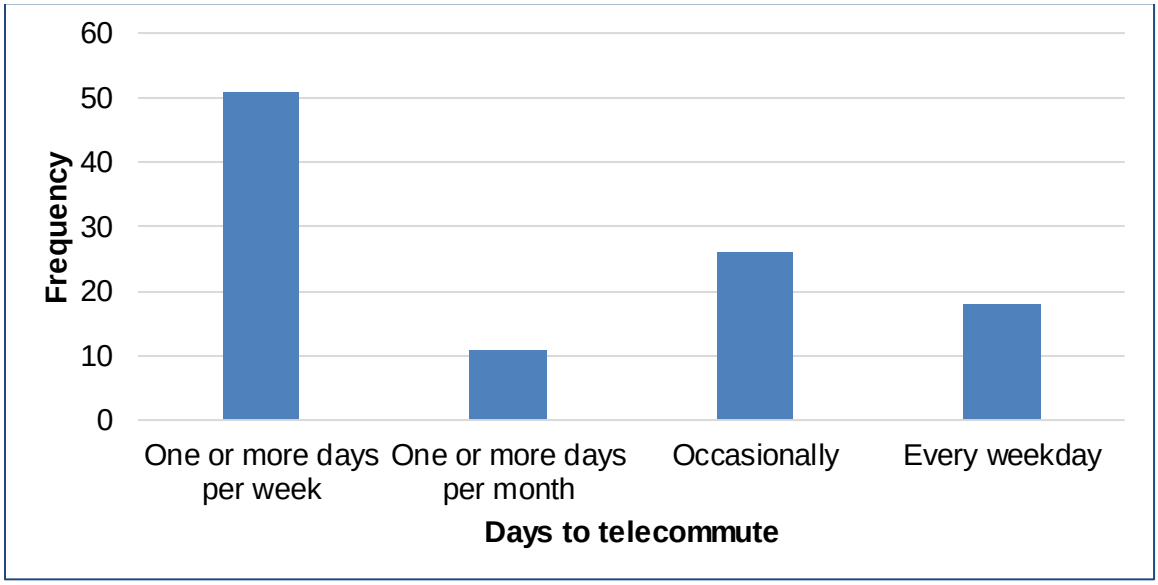

Figure 4.30: Days to telecommute

The main purpose of this question was to establish how often the non-telecommuters would like to telecommute. Figure 4.30 indicates that four to five (48.1%) of the

respondents would telecommute one or more days per week, given the opportunity. A quarter (25%) indicated they would do so occasionally.

4.2.27 Actions that employees are willing to take

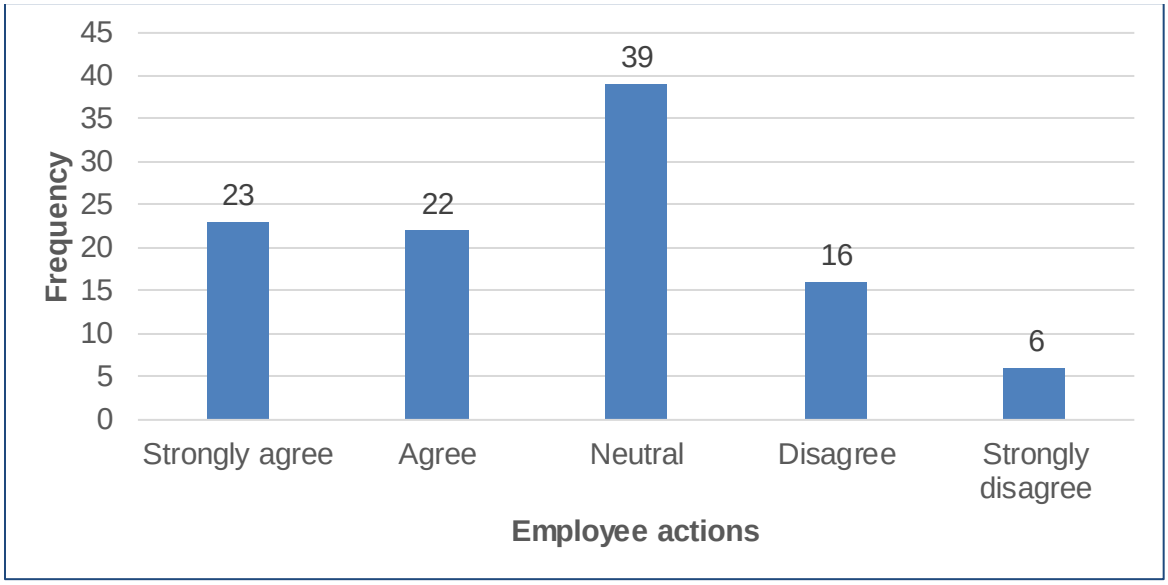

Figure 4.31: Actions that employees are willing to take

The main purpose of this question was to understand the willingness of employees to approach their company or manager to create a telecommuting agreement. Figure 4.31 depicts that 42.5% of the respondents indicated that they are planning to approach their managers to put a telecommuting agreement in place, while 20.7% disagreed and 36% were undecided.

4.2.28 Tools employee have to telecommute

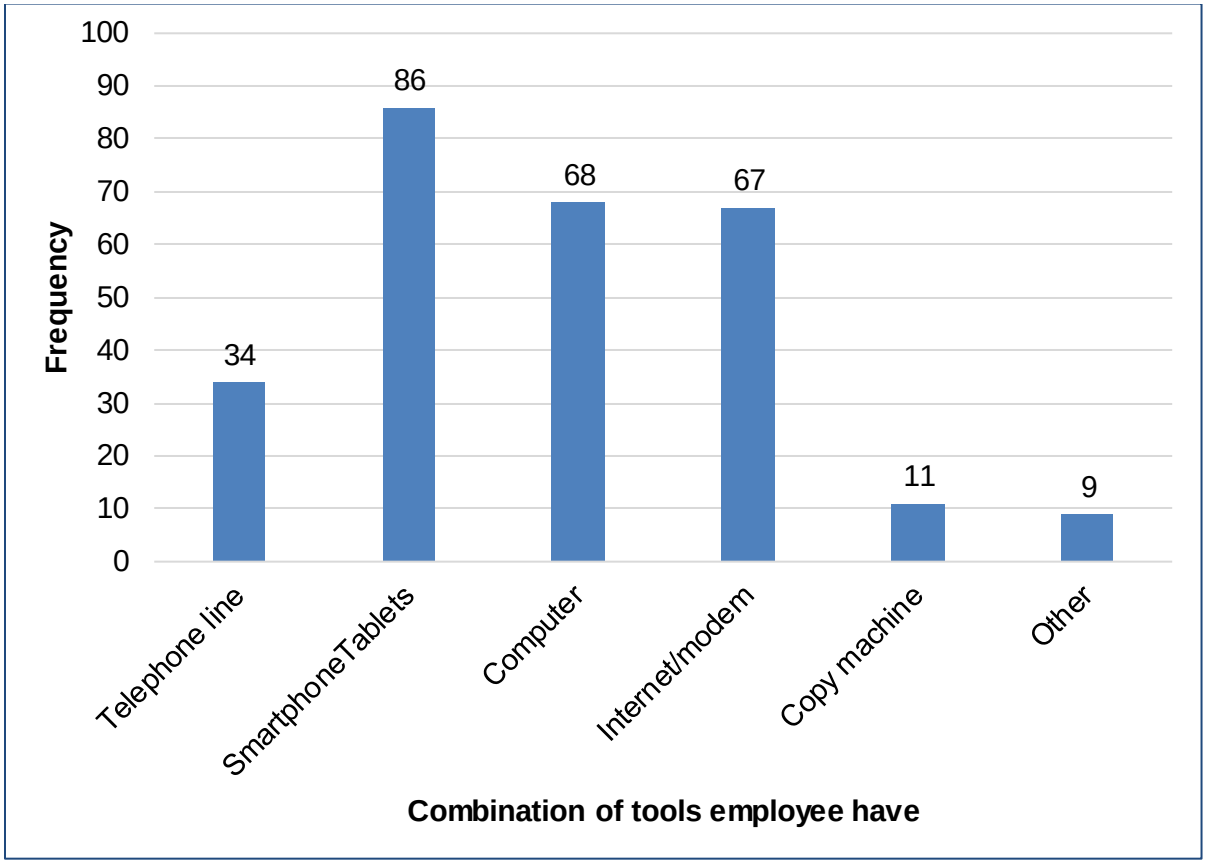

Figure 4.32: Tools employees have to telecommute

The main purpose of this question was to understand the technology that the participants had in their homes. The respondents were asked to indicate the ICT (information and communications technology) hardware they had. These (tools) were evenly spread and respondents owned more than one tools, hence the multiple responses. Figure 4.32 depicts that the highest proportion was smartphones (29%), followed by computers (23%), and internet modems (22.7%). Some respondents also owned telephone lines, printers and copy machines. Majority of respondents have the basic tools to provide internet connectivity, and can access the necessary tools to facilitate telecommuting.

4.2.29 Hardware or software requirements

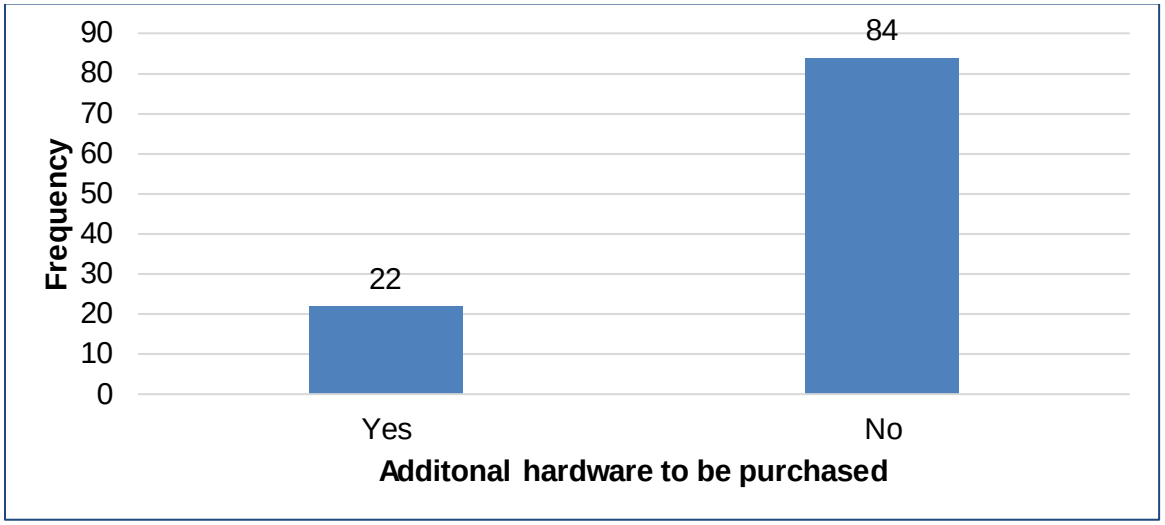

Figure 4.33: Additional hardware or software to be purchased

The main purpose of this question was to understand if the non-telecommuting respondents believed that they had the necessary hardware or software for telecommuting. As shown in Figure 4.33, the majority (79%) of the respondents indicated that they or their company would anticipate purchasing additional hardware or software if they were to telecommute, while one fifth indicated they would not. This question shows that the majority of the respondents have the necessary hardware and software for telecommuting.

4.2.30 Taking work home

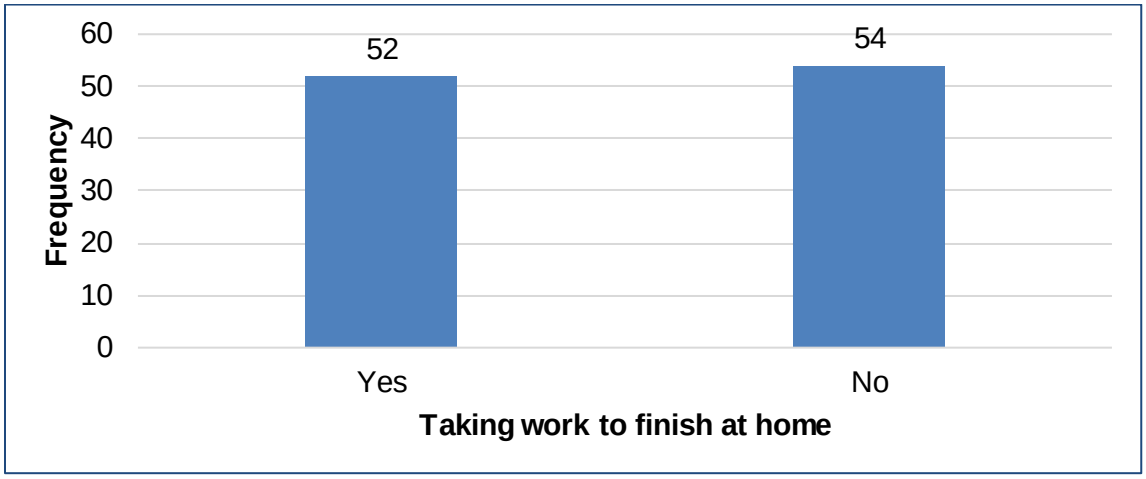

Figure 4.34: Taking work to finish at home

The rationale behind this question was to establish whether the non-telecommuting participants take work to finish at home. Figure 4.34 shows that close to half of the respondents felt they would consider taking work home (49%) and 51% disagreed with taking work home.

4.2.31 Not able to finish work as a result of telecommuting

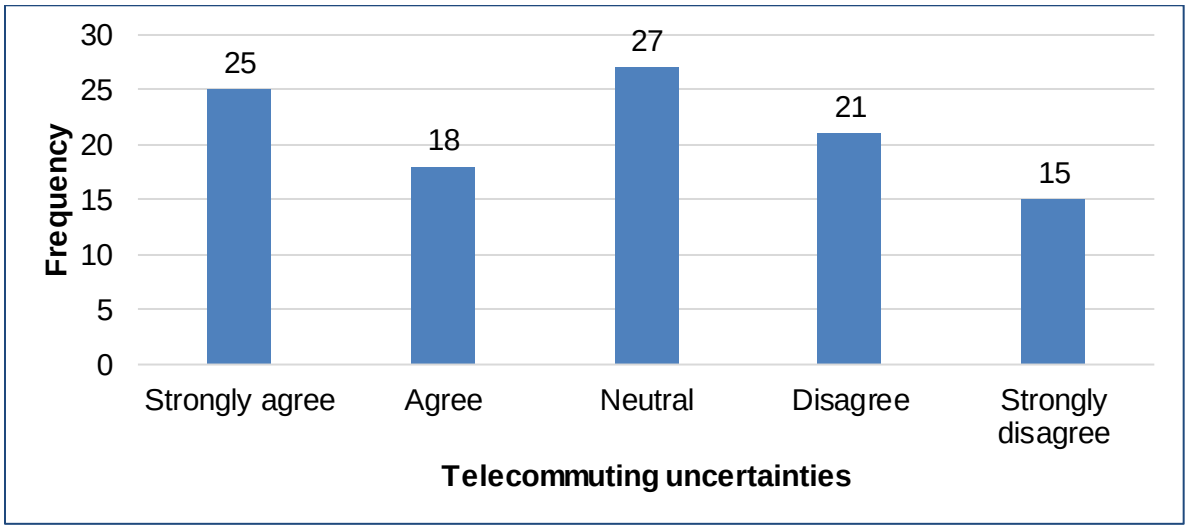

Figure 4.35: Not able to finish work

The main purpose of this question was to understand any concerns that non-telecommuters have regarding telecommuting. As can be seen in Figure 4.35, 21.7% of

the participants strongly agreed, 20.8% agreed, 36.8% were neutral, 15.1% disagreed and 5.7% strongly disagreed.

4.2.32 Employee concerns regarding telecommuting

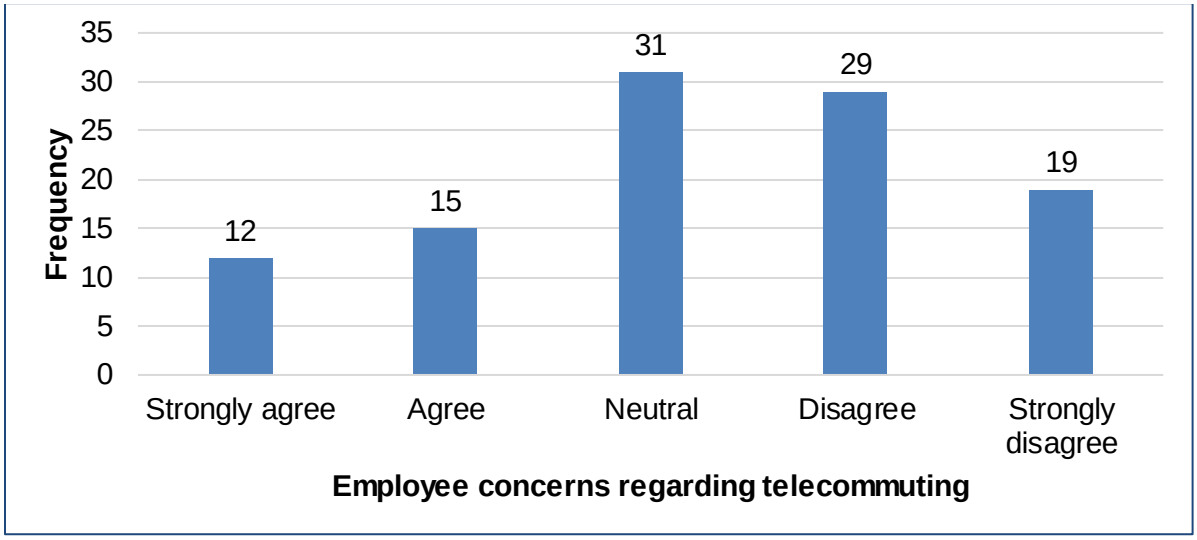

Figure 4.36: Employee concerns regarding telecommuting

The main purpose of this question was to understand any concerns that non-telecommuters have regarding telecommuting. Just over a quarter of the respondents (25.5%) agreed that they were concerned that the relationship between their supervisor and themselves would change if they were to begin telecommuting. More respondents disagreed (45%), however, while just under 30% were neutral on the issue.

4.2.33 Telecommuting can improve quality of work

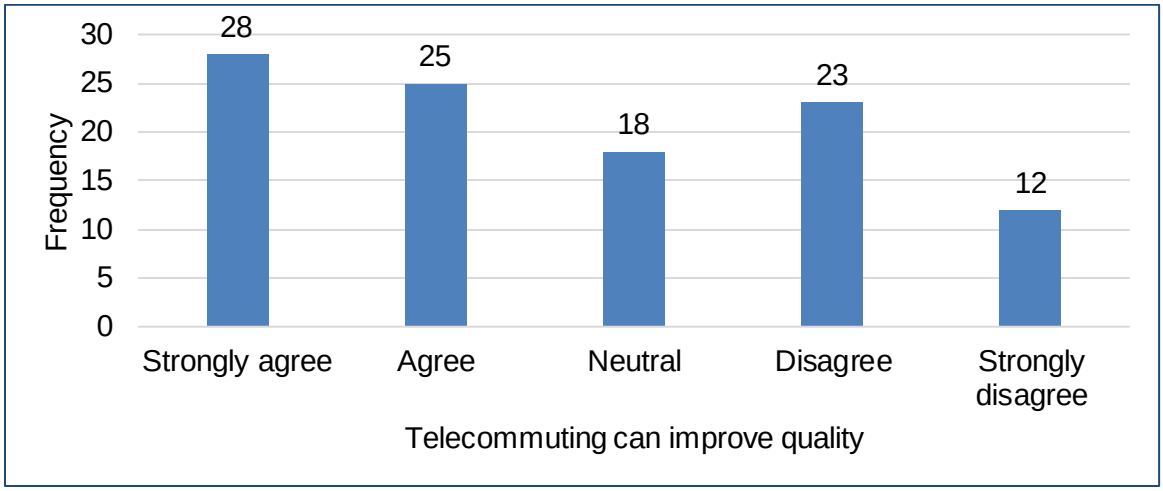

Figure 4.37: Telecommuting can improve quality

The rationale for this question was to understand whether the participants believed that telecommuting would positively impact the quality of their work. Figure 4.37 shows that 26% strongly agreed, 23.6% agreed, 17% were neutral, 21.7% disagreed and 11.3% strongly disagreed. It can thus be seen that the respondents had mixed opinions about whether telecommuting would result in an improvement in the quality of their work.

4.2.34 Telecommuting can impact productivity

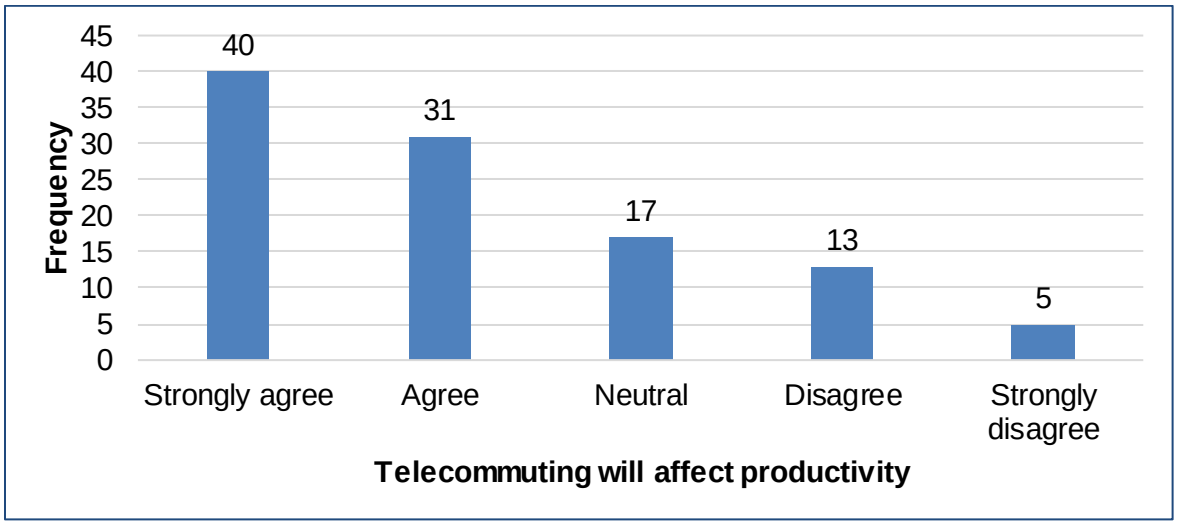

Figure 4.38: Telecommuting will affect productivity

The rationale for this question was to establish whether the respondents believed that their productivity would improve as a result of telecommuting. Figure 4.38 shows that the majority (two thirds) believed that their productivity would be positively affected, while the remainder either disagreed or were neutral.

4.2.35 Time management

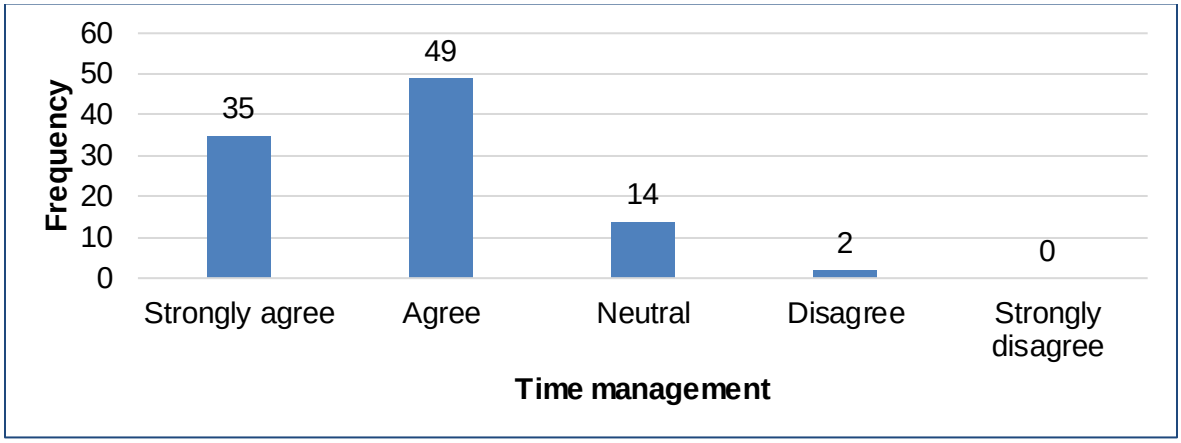

Figure 4.39: Telecommuting and time management

The rationale for this question was to understand whether non-telecommuting respondents believed telecommuting would help them manage the time they spend on their work, i.e. would telecommuting bring about more flexibility. It can be seen in Figure 4.39 that the majority (83.2%) believed that they would manage their time better and the remainder either neutral or disagree.

4.2.36 Inclination to do more work

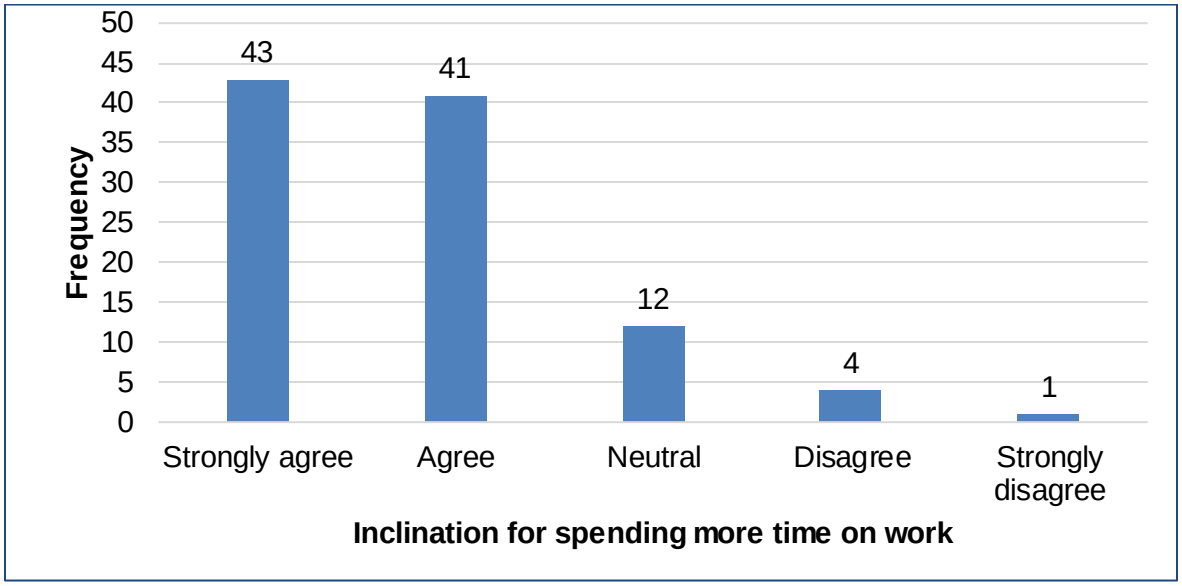

Figure 4.40: Inclination to spend would more time on work

(Note: Five missing values, no response due to data recording inconsistencies on QuestionPro.)

The rationale for this question was to investigate whether the non-telecommuters were willing to use the time they currently spend travelling to do work instead. Based on Figure 4.40, the majority of respondents (83%) felt that if they were not travelling to and from work, they would use the time to do their work, with a few who did not feel the same. Based on the question "How many hours do you spend travelling to and from work per day?", an average of two hours per day could be used as additional productive time.

4.2.37 Personal responsibilities

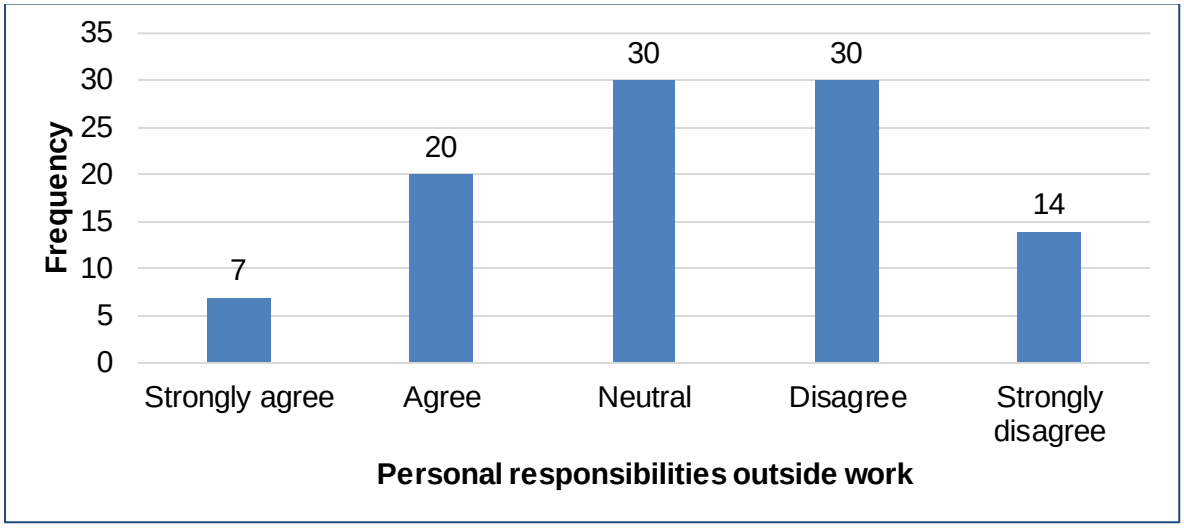

Figure 4.41: Personal responsibilities

The purpose of this question was to investigate if the respondents had commitments outside work that restricted them from being productive at work, such as family and any other commitments. Figure 4.41 shows that few respondents (26.7%) felt that their personal responsibilities or commitments restrict their ability to be productive at work, while more (43.5%) felt they would not be restricted and 29% were neutral. The results of this question contradict some of the reasons for telecommuting that the respondents provided during the study.

4.2.38 Telecommuting is beneficial to the organization

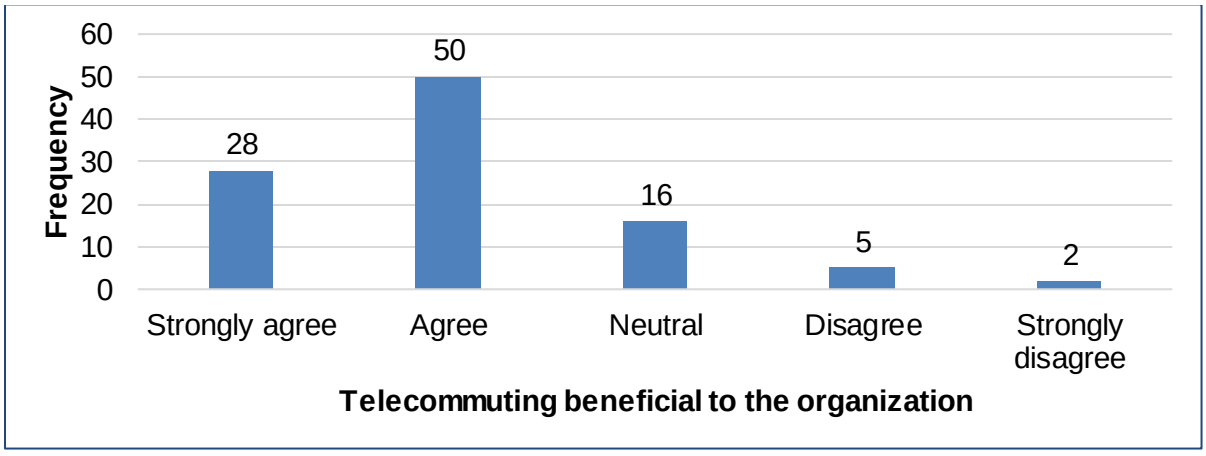

Figure 4.42: Telecommuting beneficial to the organisation

The rationale behind this question was to investigate whether the non-telecommuting respondents perceived that there are any benefits to the organisation that can be derived from telecommuting. Figure 4.42 shows that 27.7% of the participants strongly agreed, 49.5% agreed, 15.8% were neutral, 5% disagreed, and 2% strongly disagreed.

4.2.39 Company readiness to telecommute

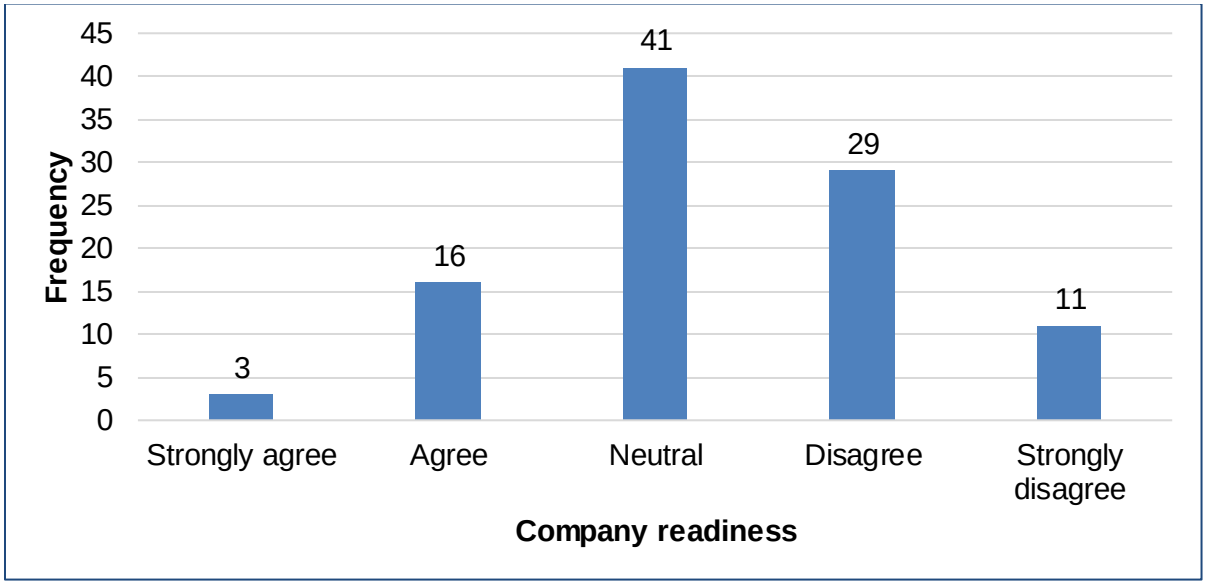

Figure 4.43: Company readiness to telecommute

The purpose of this question was to investigate whether the participants believed that the company is ready to adopt telecommuting. Figure 4.43 shows that just 3% of the participants strongly agreed, 16% agreed, 41% were neutral, 29% disagreed and 11% strongly disagreed.

4.2.40 Telecommuting implementation in Gauteng

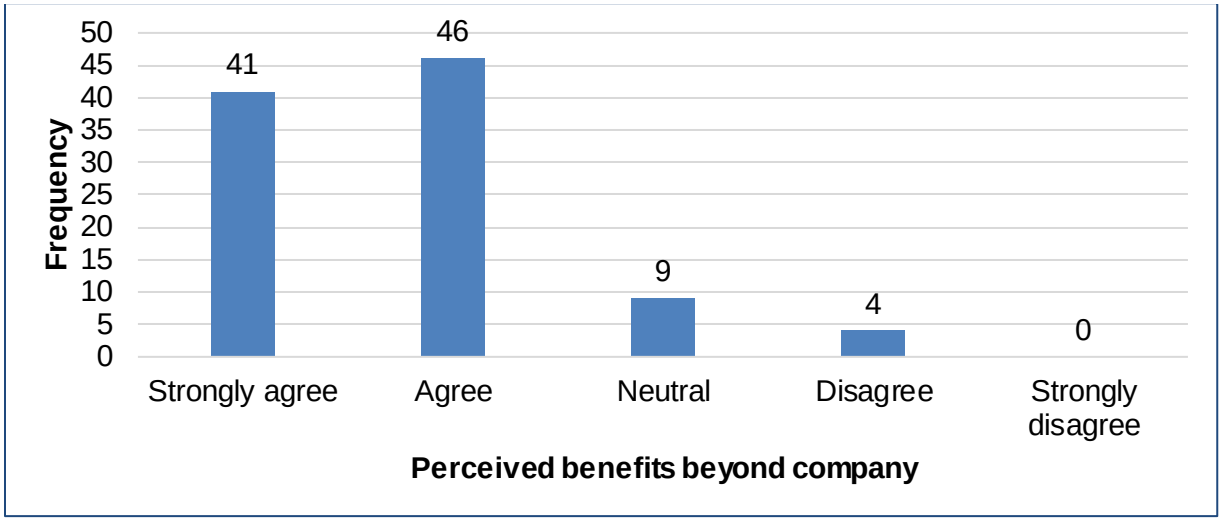

Figure 4.44: Gauteng implementation of telecommuting

(Note: Six missing values, due to data recording inconsistencies on QuestionPro.)

The main purpose of this question was to understand whether non-telecommuters believed that the benefits of telecommuting transcends beyond them and their company, in other words, will Gauteng as a province benefit from companies implementing telecommuting. As per Figure 4.44, the majority (87%) supported the idea that companies in Gauteng should implement telecommuting where possible, with a few who either disagreed or were neutral.

4.2.41 Non-telecommuters' readiness to telecommute

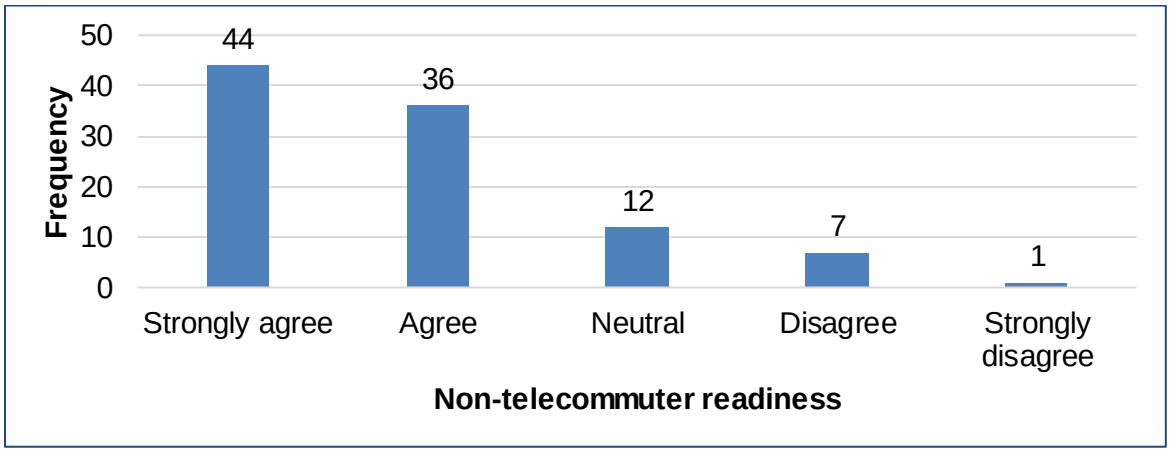

Figure 4.45: Non-telecommuters' readiness to telecommute

The rationale behind this question was to understand the readiness of respondents to telecommute. Based on Figure 4.48, the majority (80%) believe that they are ready to

telecommute, while the remainder either disagreed or were neutral. It can be concluded from the results that the non-telecommuting respondents would like to telecommute.

4.2.42 Telecommuting and time savings

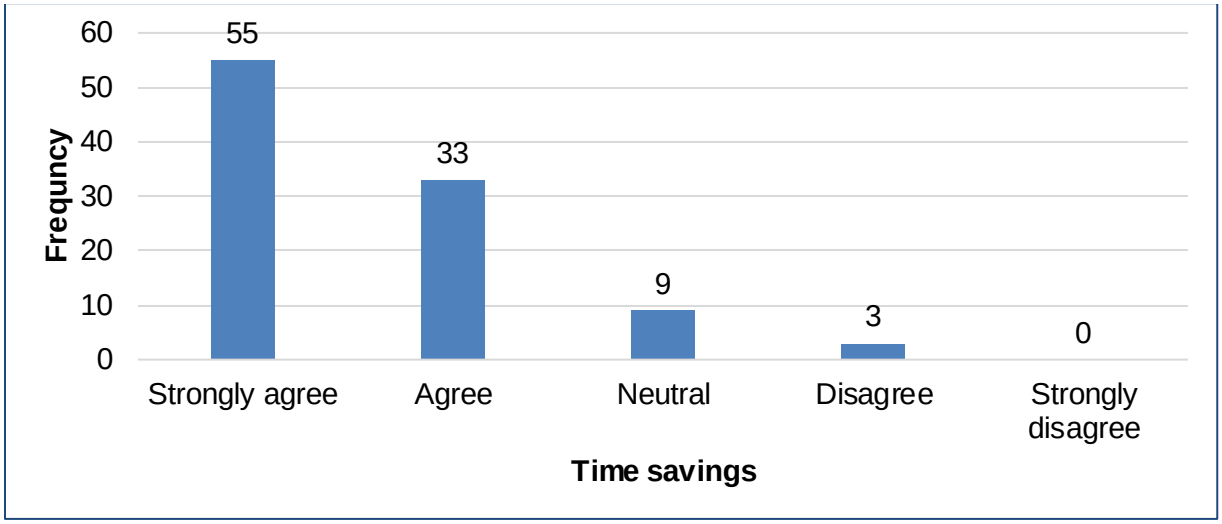

Figure 4.46: Non-telecommuters' time savings

The rationale for this question was to understand whether time and cost savings are regarded as a factor for the adoption of telecommuting. It can be seen from Figure 4.46 that the vast majority (88%) of the non-telecommuting respondents agreed that telecommuting would save the time and cost of travelling and, the rest felt otherwise.

4.3 Mean, Standard Deviation, Min and Max values

Central tendency analysis was performed by using a mean test to understand cases with a higher order of importance; the cases with higher mean scores were identified for both telecommuters and non-telecommuters. A standard deviation test was conducted to understand by how much the cases differ from the mean value. This section provides a summary of descriptive statistics for the responses for both telecommuters and non-telecommuters.

Table 4.1: Mean, Standard Deviation, Min and Max – telecommuters

Telecommuters	Obs	Mean	Std. Dev.	Min	Max
Telecommuting helps me save on travelling time	22	4.68	0.48	4	5
When I am not travelling to and from work, I use the time to do work	22	4.41	0.80	2	5
I have all the tools (Smartphone, tablet, 3G/network line, etc. laptop/computer I need to telecommute	22	4.32	1.21	1	5
I would recommend telecommuting to ease traffic congestion	22	4.27	0.88	2	5
Because of telecommuting, my productivity has increased	22	4.18	0.80	2	5
Telecommuting improves my work-life balance	22	4.14	0.83	2	5
I am able to collaborate with my colleagues and customers remotely	22	4.05	0.84	2	5
I would consider changing my job for the same emoluments if the job offered same emoluments	22	3.95	1.13	1	5
I regard telecommuting as a perk I require in a job	22	3.95	1.09	2	5
Current telecommuting arrangement is working for me	22	3.91	1.06	1	5
I use my personal hardware such as 3g/internet, etc. and spend my own data/airtime…	22	3.86	1.55	1	5
Telecommuting is beneficial to my department/company	22	3.86	0.83	2	5
There is currently no need for me to physically be in the office	22	3.09	1.31	1	5

Table 4.1 shows that the respondents generally agreed on the top three cases, which are listed in order of importance: 'Telecommuting helps me save on travelling time'; 'When I am not travelling to and from work, I use the time to do work' and 'I have all the tools (smartphone, tablet, 3G/network line, laptop/computer etc.) I need to telecommute' (Mean scores >4.3). The second most important ranked factors were: 'I would recommend telecommuting to ease traffic congestion'; 'Because of telecommuting, my productivity has increased'; and 'Telecommuting improves my work-life balance' (Mean scores >4.0). 'The current telecommuting arrangement is working for me', there is currently no need for me to be in the office and 'Telecommuting is beneficial to my department/company' were the least rated factors among telecommuters.

Willingness to telecommute factors were ranked lowly as follows: 'I am able to collaborate with my colleagues and customers remotely'; 'I would consider changing my job for the same emoluments if the job offered telecommuting'; I regard telecommuting as a perk I require in a job'; and 'I use my personal hardware such as 3g/internet, etc. and spend my own data/airtime to telecommute' (Mean scores = 3.0 indicating slight agreement). The least rated willingness factor was 'There is currently no need for me to physically be in the office'.

Table 4.2: Mean, Std. Deviation, Min and Max – non-telecommuters

	Obs	Mean	Std. Dev.	Min	Max
Telecommuting will help save on travelling time	101	4.49	0.73	2	5
Telecommuting will save mytime and cost of travelling	100	4.40	0.78	2	5
Telecommuting is the solution to traffic congestions	100	4.32	0.78	2	5
Companies in Gauteng should implement telecommuting, where possible	100	4.24	0.78	2	5
If I were not travelling to and from work, I would use the time to do my work	101	4.24	0.81	2	5
I am ready to telecommute	100	4.19	0.91	2	5
Telecommuting will improve my work-life balance	101	4.19	0.86	2	5
Telecommuting will help me manage the time I spend on my tasks and objectives	101	4.18	0.74	2	5
I would consider changing myjob for the same emoluments	100	4.04	1.01	2	5
Telecommuting has the potential to benefit my department/company	101	4.04	0.81	2	5
Telecommuting will affect my productivity positively	106	4.02	1.04	2	5
I regard telecommuting as a perk I require in a job	100	3.90	0.94	2	5
Telecommuting will favourablyaffect the quality of my work	106	3.77	1.17	2	5
I can use my personal hardware such as 3g/internet, etc. and spend myown data to telecommute	100	3.77	1.12	2	5
I will feel uneasyor uncomfortable about no able to finish my work on time	106	3.73	1.17	2	5
I am concerned that my relationship between my supervisor and I would change if I were to telecommute	106	3.45	1.18	2	5
Person responsibilities or commitments outside work	101	3.32	1.11	2	5
My companyis ready to adopt telecommuting	100	3.15	1.00	2	5

Table 4.2 depicts the top three rated factors among non-telecommuters, i.e. 'Telecommuting will help save on travelling time'; 'Telecommuting will save my time and cost of travelling'; and 'Telecommuting is the solution to traffic congestion' (Mean scores >4.3). The three least rated factors as follows: 'I am concerned that my relationship between my supervisor and myself would change if I were to telecommute', 'Person responsibilities or commitments outside work restrict my ability to be productive at work'; and 'My company is ready to adopt telecommuting' (Mean score indicates neutrality).

4.4 General comments and suggestions

The questionnaire was comprised of structured (close-ended) and unstructured (open-ended) survey questions. The comments (from the open-ended questions) were categorised into themes for ease of analysis. The sub-sections below discuss the comments provided.

4.4.1 Problems/issues/suggestions

Table 4.3: Problems/issues/suggestions regarding telecommuting

Theme	Frequency
Productivity	6
Less distractions	5
Cost and time savings	3
Communication	2
Convenience	2
Work-life balance	2

Respondents were provided with an open-ended question regarding "problems/issues/suggestions regarding telecommuting", the answers to which were categorised into themes as per Table 4.3 above. The themes identified are discussed below.

- **Productivity**

The telecommuting respondents identified productivity as something beneficial about telecommuting, as they are able to manage their time better with little interference at home compared to at work. The respondents indicated that they get more work done and work longer hours due to not travelling to the office. One of the respondents stated that:

> *Get more actual work done. Less stress. Not as tired after a full day's work, in some cases I would even work longer hours. I can save on travelling costs.*

Another respondent said that:

> *When I don't have interruptions of people coming to my desk without setting up a meeting, I can get so much done. When working from home, my work usually gets done within 3hrs and I have time to concentrate on other work-related matters.*

- **Cost and time savings**

The respondents identified cost and time savings as being beneficial, as they save on travelling time. Another aspect mentioned by respondents is that the company saves on infrastructure and other costs. One of the respondents stated that:

> *Save time in traffic which is then put toward an earlier start to work. Uninterrupted, no distractions working at home.*

- **Communication**

The respondents noted that communication works well in telecommuting because people are able to talk to each other without necessarily putting everything in writing.

- **Work-life balance**

The respondents indicated that telecommuting provides them with work-life balance as they are able to attend to both work and personal demands. Additionally, they noted that they can do work even when they are sick, thus minimising the need for leave.

- **Convenience**

The respondents regard telecommuting as convenient as it provides the flexibility they require. The telecommuters were generally happy with telecommuting and did not indicate that they had encountered any problems.

4.4.2 Reasons for telecommuting

The non-telecommuting respondents were provided with an open-ended question asking them to indicate their reason(s) for wanting to telecommute. The answers are provided in Table 4.4.

Table 4.4: Reasons for telecommuting

Theme	Frequency
Traffic	28
Convenience	14
Office distractions	12
Cost savings	10
Flexibility	7
Family commitments	3
Work-life balance	3
Productive	1
Strikes	1
Total	**79**

It can be seen from Table 4.4 that 79 comments were provided which were coded into categories. It can be concluded from the data in the table that traffic is the main reason for the respondents wanting to telecommute, with 28 respondents mentioning it.

- **Traffic**

The respondents identified traffic congestion as their reason for wanting to telecommute, and indicated that they would save on travelling time and respondents stated:

> *It makes life easier seeing that I spent almost most of my time on the road.*

Another respondent said that:

> *It would be very convenient as I would be able to start working earlier and stop working a bit later compared to normal, I won't start work tired as we always tired when we get to work due to the traffic.*

And another respondent said that:

> *Spend more time stuck in traffic which I would rather use to work.*

These results confirmed the terrible state of traffic congestion in Gauteng. Other respondents cited strikes as their reason for wanting to telecommute, as strikes increase traffic congestion.

- **Convenience**

The second highest reason for telecommuting was listed as convenience, which was mentioned 14 times. It can thus be concluded from the results that the respondents regard telecommuting as being convenient.

- **Office distractions**

The third most common reason listed was office distractions (mentioned 12 times); the respondents believe that telecommuting will help them focus on their jobs as there will be fewer interruptions. A respondent stated:

> *As a project manager, a lot of work is of administrative nature and people in the office keep you out of your work.*

Another respondent said that:

> *My mind works best when I simply wake up and work from the bed or home - I get more done in the morning when I do not have to travel. I can also work in a mentally stimulating environment that allows me to think freely without having to interact with noise levels around the office that are distracting.*

- **Cost savings**

The fourth highest reason mentioned for telecommuting was savings (10 times) in terms of travelling and fuel costs.

- **Flexibility**

The respondents discussed flexibility as another reason for telecommuting (mentioned seven times):

> *Besides the costs of travelling and traffic, work would begin at an earlier time.*
> *I can even work at night and I work better on my own.*

Family commitments (mentioned three times) and work-life balance (mentioned three times) were the other reasons cited by respondents.

4.4.3 Perceived benefits of telecommuting

The respondents were provided with an open-ended question regarding the benefits of telecommuting for employees and the organisation; the answers are below in Table 4.5. Some of the benefits were provided in the "general comments" section.

Table 4.5: Benefits of telecommuting

Theme	Frequency
Productivity	39
Cost savings	18
Work-life balance	6
Less congestion	2
Less sick leave	2
Accountability	1
Better time management	1
Convenience	1
Employee loyalty	1
Employee satisfaction	1
Independence	1
Less absenteeism	1
Quality of work	1
Responsibility	1
Retention of employees	1
Time savings	1
Total	78

It can be seen from Table 4.5 that 78 comments were provided, which were coded into categories.

- **Productivity**

It can be seen from the data in the table that productivity is regarded as the greatest benefit, with 39 respondents mentioning it. Below are some of the quotes provided:

A respondent said that:

> *More is done as there will no longer be a rush for travelling time. When comfortable at home more work is executed.*

Another respondent said that:

> *I'll get enough time to do my work tasks. It will save me from stressing about the horrible traffic we have in RSA and it will improve my accountability and responsibility of finishing my work at the time committed to.*

It can be concluded that the respondents believe that they will be more productive when telecommuting, as most of the comments cite the ability for the respondents to work longer periods at their own leisure.

- **Cost benefit**

The second most rated benefit (mentioned 18 times) was cost savings, particularly for office rentals. It can thus be concluded that the respondents believe that there are financial benefits associated with telecommuting.

- **Work-life balance**

The third highest benefit (mentioned six times) was work-life balance and one of the respondents said:

> *Health benefits: employees would have more time for gym or taking care of their health, this is an advantage for organizations as there would be a reduction in sick employees and an increase in mental health. There would be a balance between work and life resulting to happier employees which is beneficial for the*

employer because this would increase employee loyalty and this could result in employees working more hours voluntarily.

Another respondent mentioned:

Healthier lifestyle (work life balance).

The other benefits are not as popular as the first three, however the respondents have mentioned, less congestion twice and one of the quotes was

less traffic congestion - more working time.

The rest of the benefits were mentioned once included accountability (more control of own work); better time management (due to flexibility); convenience (linked to flexibility); employee loyalty; employee satisfaction (as the respondents will be happier); independence; less absenteeism; improved quality of work; giving more responsibility to employees; retention of employees; and time savings. It can be concluded from the answers provided that the respondents are very knowledgeable about the topic and can see the immediate benefits that telecommuting would bring.

4.4.4 Barriers/risks to telecommuting

The respondents were provided an open-ended question where they were prompted to consider the risks of, and barriers to, increased telecommuting adoption.

Barriers that the respondents cited are specified below:

- **Lack of telecommuting policy** - although there is an acknowledgement that flexible working hours are implemented in the organisation, there is lack of a telecommuting policy and one of the quotes cited is.

A respondent said that:

Trust from leadership and commitment to adopt new policies.

- **Trust** – this barrier was identified by the respondents as a reason why telecommuting adoption is very low, and one of the quotes is:

A respondent said that:

> *Management need to trust employees.*

Another respondent said that:

> *Management must let go of control. Management must trust their employees.*

- **Access controls** – the respondents identified access controls and a lack of access to systems as a barrier:

Respondent said that:

> *Allow for access mechanisms and controls to enable more people than the elite the ability to work from home*.

- **Education** – the respondents identified that some managers and employees are not aware of the benefits that telecommuting can bring:

Respondent said that:

> *Getting employers to understand the benefits of telecommunication.*

Another respondent said that:

> *Advise companies as to how it will benefit especially when staff cannot attend work due to unforeseen circumstances as they can now work from home.*

- **Data costs and broadband speed** – the respondents identified the cost of data and the slow broadband speed in South Africa in general as inhibitors to telecommuting:

A respondent said that:

> *SA internet speeds and costs.*

Another respondent said that:

> *Improve the internet connection and lowering the cost of acquiring data.*

- **Millennial workforce and sophistication** – the respondents identified the need for organisations to adapt to managing a millennial workforce and sophistication in terms of how to engage them, citing that organisations are slow to implement strategies to manage millennial generation.

Respondent said that:

> *I think that you should look at millennial integration into organisations. Companies are still trying to use old ways to get millennials productive at work and it is not working. Organisations need to feed on the strengths of their different generations they have on their payroll. It also seems that organisations have this fear that if I do not see you are not working - why not create a set of tasks to complete for a specific day I am working from home and monitor if telecommuting is working or not then take it from there? I support telecommuting primarily also that it will decrease the carbon footprint that organisations are trying to work towards.*

The respondents also cited some risks related to telecommuting implementation:

- **Lack of collaboration** - the respondents identified a lack of collaboration as one of the risks related to telecommuting and below are the quotes from respondents:

A respondent said that:

Negative impact of decreased human interaction.

Another respondent said that:

Lack of brainstorming opportunity.

Another respondent said that:

Immediate communication, if you really need help about explanations in person and meetings with your team will be a bit of a challenge.

Another respondent said that:

Loss of relationships. Getting or feeling out of touch and disconnected.

Another respondent said that:

Communication problem between managers and subordinates.

- **Difficulty in managing telecommuters** - the respondents identified the difficulty and complexity of managing telecommuters as one of the risks, and identified monitoring whether employees are actually working during working hours as a possibility. One of the quote is:

  Individuals might not work at work or work the full hours that they are supposed to work. Monitoring productivity would be difficult.

And another respondent said that:

Not everyone will work as hard from home as it requires discipline which not everyone has based on various job levels.

- **Data privacy** - the respondents identified data privacy as one of the risks related to telecommuting. Below are the quotes from the respondents:

Respondent said that:

> *Risks lie in employees having access to important or confidential information in an environment that is not controlled.*

Another respondent said that:

> *Losing confidential information of clients if working from public place.*

Another respondent said that:

> *Company / Clients' information ending up in the wrong hands.*

Another respondent said that:

> *Secure connection to work systems.*

Another respondent said that:

> *Misuse of company property, property can be easily lost, stolen or damaged if staff is not careful with it, Idle time could increase as they are not being monitored.*

4.4.5 Recommendation/suggestions

The respondents were provided an open-ended question which prompted them to provide suggestions regarding what could be done to increase telecommuting adoption.

- **Awareness**

Most of the respondents identified awareness as one of the strategies that can be put in place to increase telecommuting:

A respondent said that:

> *Companies must be made aware that other staff work better at their own time in their own comfort zones.*

Another respondent said that:

> *Awareness campaigns to companies.*

- **ICT equipment provision and upgrades**

The respondents identified the provision or upgrade of ICT systems that are not fit for purpose as a strategy that can be implemented to increase telecommuting adoption and the answers were beyond the company being studied. Below is one of the quotes respondents have provided:

> *Organisations must provide the correct tools that will enable telecommuting. (Chats, VCs etc. on a single gadget).*
> *Depends on the job that you are doing. If a company would pay for the data and use other alternative methods for meetings i.e. Skype.*

- **Pilot studies**

Pilot studies were suggested to increase telecommuting adoption:

> *To introduce it to the departments that are not working directly with teams/ customers/queries.*

And another respondent said that:

> *Start by allowing a day off a week and see if productivity increases on that day or not.*

4.5 Reliability

Reliability was tested using Cronbach's alpha, which is designed to calculate the average of all possible split-half reliability coefficients (Bryman et al., 2014). Tables 4.6 and 4.7 depict the reliability tests for telecommuters and non-telecommuters.

Table 4.6: Reliability test – telecommuters

Items	correlation	Correlation	covariance	alpha
Telecommuting helps me save on travelling time	0.14700	0.00700	0.27448	**0.83000**
Telecommuting will help me spend more time working on tasks and objectives	0.13100	-0.02900	0.27855	**0.83800**
When I am not travelling to and from work, I use the time	0.45600	0.27100	0.23743	**0.82200**
I have all the tools (Smartphone, tablet, 3G/network line, etc. laptop/computer,	0.51200	0.36700	0.23224	**0.80600**
I would recommend telecommuting to ease traffic congestion	0.43700	0.3400	0.24853	**0.80400**
Because of telecommuting, my productivity has increased	0.69400	0.62600	0.22575	**0.78400**
Telecommuting improves my work-life balance	0.76700	0.71800	0.22411	**0.78100**
I am able to collaborate with my colleagues and customers remotely	0.68300	0.62000	0.23063	**0.78700**
I would consider changing my job for the same emoluments if the job offered telecommuting	0.43900	0.38600	0.2578	**0.80400**
I regard telecommuting as a perk I require in a job	0.71900	0.66200	0.22777	**0.78400**
Current telecommuting arrangement is working for me	0.76800	0.71700	0.22200	**0.77900**
I use my personal hardware such as 3g/internet, etc. and spend my own data/airtime to telecommute	0.80400	0.75900	0.21911	**0.77700**
Telecommuting is beneficial to my department/company	0.78100	0.71100	0.20585	**0.77300**
There is currently no need for me to physically be in the office	0.69000	0.60300	0.21745	**0.78300**
Test scale			0.23584	**0.8090**

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Table 4.6 indicates that the Cronbach's Alpha coefficient for all sub scales is greater than 0.7, and overall greater 0.82. This is an indication of a high level of consistency and reliability of the data in this study. This means that the questions asked measured what the study set out to measure.

Table 4.7: Reliability test – non-telecommuters

Item	correlation	Correlation	covariance	alpha
I will feel uneasy or uncomfortable about no able to finish my work on time if I were to telecommute	0.50180	0.36820	0.29407	**0.89390**
I am concerned that my relationship between my supervisor and I would change if I were to begin telecommuting?	0.45550	0.34350	0.30123	**0.89760**
Telecommuting will favorably affect the quality of my work	0.67730	0.60050	0.27929	**0.88660**
Telecommuting will affect my productivity positively	0.60550	0.51500	0.29207	**0.89020**
Telecommuting will help me manage the time I spend on my work	0.73260	0.69690	0.29392	**0.88610**
Telecommuting will help save on travelling time	0.72380	0.68770	0.29507	**0.88650**
If I were not travelling to and from work, I would use the time to do my work	0.73440	0.69500	0.29052	**0.88540**
Telecommuting will improve my work-life balance	0.73120	0.68920	0.28882	**0.88520**
Person responsibilities or commitments outside work restrict my ability to be productive at work	0.45970	0.36910	0.30086	**0.89580**
Telecommuting has the potential to benefit my department/company	0.73920	0.70060	0.29023	**0.88520**
My company is ready to adopt telecommuting	0.19260	0.09700	0.32342	**0.90360**
Companies in Gauteng should implement telecommuting, where possible	0.76500	0.73060	0.29011	**0.88470**
I am ready to telecommute	0.79720	0.76140	0.28218	**0.88260**
I can use my personal hardware such as 3g/internet, etc. and spend my own data/airtime to telecommute	0.36750	0.26830	0.30880	**0.89950**
Telecommuting will save my time and cost of travelling	0.76360	0.72910	0.29027	**0.88480**
I would consider changing my job for the same emoluments if the job offered telecommuting	0.70280	0.64740	0.28445	**0.88570**
I regard telecommuting as a perk I require in a job	0.58600	0.52130	0.29566	**0.89000**
Telecommuting is the solution to traffic congestions	0.73370	0.69590	0.29209	**0.88570**
Test scale			0.29406	**0.89500**

Table 4.7 indicates that the Cronbach's Alpha coefficient (non-telecommuters) for all sub scales is greater than 0.7 and overall greater 0.895. This is an indication of higher levels of consistency and reliability than for telecommuters. All questions in the study showed a very high degree of internal reliability, as the Cronbach's alpha values are close to 1.

4.6 Normal distribution

A Shapiro-Wilk W test was conducted on the data obtained, which were found to be normally distributed.

The results can be seen in Tables 4.8 (telecommuters) and 4.9 (non-telecommuters).

Table 4.8: Shapiro-Wilk W test – telecommuters

Variable	Obs	W	V	z	Prob>z
Current telecommuting arrangement is working for me	22	0.85843	3.586	2.59	0.0048
I have all the tools (Smartphone, tablet, laptop/computer, 3G/network line, etc.) I need to telecommute	22	0.49203	12.869	5.18	0
I use my personal hardware such as 3g/internet, etc. and spend my own data/airtime to telecommute	22	0.84225	3.996	2.809	0.00248
There is currently no need for me to physically be in the office	22	0.9937	0.16	-3.72	0.9999
I am able to collaborate with my colleagues and customers remotely	22	0.86886	3.322	2.434	0.00746
I would recommend telecommuting to ease traffic congestions	22	0.84894	3.827	2.721	0.00325
Telecommuting will help me spend more time working on tasks and objectives	22	0.71557	7.206	4.004	0.00003
Because of telecommuting, my productivity has increased	22	0.87764	3.1	2.294	0.01089
Telecommuting helps me save on travelling time	22	0.94228	1.462	0.770	0.22052
When I am not travelling to and from work, I use the time to do work	22	0.71557	7.206	4.004	0.00003
Telecommuting improves my work-life balance	22	0.90579	2.387	1.764	0.03887
Telecommuting is beneficial to my department/company	22	0.94554	1.38	0.653	0.257
I would consider changing my job for the same emoluments if the job offered telecommuting	22	0.84448	3.94	2.780	0.00272
I regard telecommuting as a perk I require in a job	22	0.93812	1.568	0.912	0.18099

Table 4.9: Shapiro-Wilk W test – non-telecommuters

Variable	Obs	W	V	z	Prob>z
I will feel uneasy or uncomfortable about no able to finish my work on time if I were to telecommute	106	0.99288	0.618	-1.073	0.85832
I am concerned that my relationship between my supervisor and I would change if I were to begin telecommuting?	106	0.99079	0.799	-0.5	0.69148
Telecommuting will favorably affect the quality of my work	106	0.98941	0.918	-0.19	0.57535
Telecommuting will affect my productivity positively	106	0.97311	2.331	1.884	0.02981
Telecommuting will help me manage the time I spend on my work	101	0.93822	5.143	3.635	0.00014
Telecommuting will help save on travelling time	101	0.90415	7.98	4.61	0
If I were not travelling to and from work, I would use the time to do my work	101	0.93221	5.644	3.841	0.00006
Telecommuting will improve my work-life balance	101	0.94808	4.323	3.249	0.00058
Person responsibilities or commitments outside work restrict my ability to be productive at work	101	0.99116	0.736	-0.68	0.75177
Telecommuting has the potential to benefit my department/company	101	0.96553	2.87	2.34	0.00964
My company is ready to adopt telecommuting	100	0.97936	1.704	1.182	0.11858
Companies in Gauteng should implement telecommuting, where possible	100	0.92454	6.23	4.058	0.00002
I am ready to telecommute	100	0.9436	4.657	3.412	0.00032
I can use my personal hardware such as 3g/internet, etc. and spend my own data/airtime to telecommute	100	0.99274	0.6	-1.134	0.8716
Telecommuting will save my time and cost of travelling	100	0.88443	9.542	5.004	0
I would consider changing my job for the same emoluments if the job offered telecommuting	100	0.96977	2.496	2.029	0.02123
I regard telecommuting as a perk I require in a job	100	0.98631	1.131	0.272	0.39275
Telecommuting is the solution to traffic congestions	100	0.91014	7.42	4.446	0

4.7 Principal Component Analysis

Principal component analysis was carried out in order to determine what the most influential factors are that affect telecommuting. The results shown in Tables 4.10 and 4.11 represent the PCA for telecommuters and non-telecommuters.

Table 4.10: Principal component analysis – telecommuters

Component	Eigenvalue	Diff	Proportion	Cumulative
Telecommuting will help me spend more time working on tasks and objectives	5.481	3.801	0.422	0.422
When I am not travelling to and from work, I use the time to do work	1.680	0.490	0.129	0.551
I would consider changing myjob for the same emoluments if the job offered telecommuting	1.190	0.068	0.092	0.642
I would recommend telecommuting to ease traffic congestion	1.121	0.266	0.086	0.729
Comp5	0.856	0.013	0.066	0.795
Comp6	0.843	0.279	0.065	0.859
Comp7	0.564	0.097	0.043	0.903
Comp8	0.467	0.145	0.036	0.939
Comp9	0.322	0.100	0.025	0.963
Comp10	0.222	0.037	0.017	0.981
Comp11	0.185	0.139	0.014	0.995
Comp12	0.046	0.024	0.004	0.998

Note: Comp represents the rest of the factors outside the top 4

Table 4.10 indicates that there were four key influential factors (eigenvalues >1) out of 12 factors among telecommuters, which accounted for a cumulative 72.9% of total variance in the sub scale. These results suggest that the first factor could have 5.4 times as much influence on telecommuting, and accounts for 42% of the total variation in the scale. The second has twice the influence and accounts for 12.9% of the total variance, while factors 3 and 4 both account for 1.1 times the influence on telecommuting and account for very little variance.

Table 4.11: Principal component analysis – non-telecommuters

Component	Eigenvalue	Diff	Proportion	Cumulative
Telecommuting will help save on travelling time	7.769	6.223	0.432	0.432
Telecommuting will save mytime and cost of travelling	1.547	0.332	0.086	0.518
I can use my personal hardware such as 3g/internet, etc. and spend my own data to telecommute	1.215	0.168	0.068	0.585
Telecommuting will affect my productivity positively	1.047	0.122	0.058	0.643
Comp5	0.926	0.133	0.051	0.695
Comp6	0.793	0.084	0.044	0.739
Comp7	0.709	0.035	0.039	0.778
Comp8	0.674	0.119	0.037	0.816
Comp9	0.555	0.060	0.031	0.846
Comp10	0.496	0.036	0.028	0.874
Comp11	0.460	0.077	0.026	0.899
Comp12	0.383	0.053	0.021	0.921
Comp13	0.330	0.055	0.018	0.939
Comp14	0.275	0.034	0.015	0.954
Comp15	0.241	0.007	0.013	0.968
Comp16	0.234	0.051	0.013	0.981
Comp17	0.183	0.018	0.010	0.991
Comp18	0.165	.	0.009	1.000

Note: Comp represents the rest of the factors outside the top 4

Table 4.11 indicates that there were four key influential factors (eigenvalues >1) out of 12 factors among non-telecommuters, which accounted for a cumulative 64.3% of the total variance in the sub scale. These results suggest that the first factor could have 7.7 times as much influence on telecommuting, and accounts for 43% of the total variation in the scale. The second factor has twice the influence and accounts for 0.1% of the total variance, while factors 3 and 4 account for 1.2 and 1 times the influence on telecommuting and account for very little variance.

4.8 Ordinal logistic regression

An ordinal logistic regression was applied in order to find out which employee factors influence telecommuting among the respondents in the bank. “The number of days per week I would telecommute” question was the dependent variable, while the rest of the factors among the non-telecommuters were the independent variables (predictors).

Table 4.12: Ordinal logistic regression

	Coef.	Std. Err.	P>z	[95% Conf. Interval]	
Number of days per week I would telecommute					
Telecommuting will help save on travelling time	- 0.04	0.19	0.81	-0.409	0.319
Telecommuting will save mytime and cost of travelling	0.74	0.21	0.05	0.335	1.154
Telecommuting is the solution to traffic congestions	0.11	0.19	0.576	-0.270	0.485
Companies in Gauteng should implement telecommuting, where	0.37	0.23	0.101	- 0.072	0.815
If I were not travelling to and from work, I would use the time to do my work	-0.88	0.55	0.109	-1.951	0.195
I am ready to telecommute	1.10	0.50	0.027	0.127	2.079
Telecommuting will improve my work-life balance	0.24	0.46	0.599	- 0.662	1.148
Telecommuting will help me manage the time I spend on my work	- 0.18	0.46	0.691	- 1.090	0.723
I would consider changing myjob for the same emoluments	0.07	0.35	0.849	- 0.628	0.763
Telecommuting has the potential to benefit my department/company	0.37	0.22	0.09	- 0.059	0.808
Telecommuting will affect my productivity positively	- 0.40	0.56	0.475	- 1.502	0.699
I regard telecommuting as a perk I require in a job	0.10	0.33	0.767	- 0.557	0.755
Telecommuting will favourably affect the quality of my work	- 0.13	0.19	0.497	- 0.508	0.247
I can use my personal hardware such as 3g/internet, etc. and spend my own data to telecommute	1.11	0.59	0.059	- 0.044	2.259
I will feel uneasy or uncomfortable about not being able to finish my work on time	-0.40	0.41	0.328	- 1.190	0.398
I am concerned that my relationship between my supervisor and I would change if I were to telecommute	0.34	0.36	0.337	- 0.359	1.047
co or commitments outside work	- 0.20	0.55	0.72	- 1.268	0.876
My company is ready to adopt telecommuting	-0.13	0.45	0.777	- 1.012	0.757
Marital status	- 0.52	0.40	0.189	- 1.299	0.257
Employment level	-1.55	0.59	0.008	- 2.699	- 0.395
Years of employment in FNB	0.44	0.33	0.191	- 0.217	1.088
Area you reside in	0.16	0.10	0.103	- 0.032	0.350

Log likelihood = -108.14419

Figure 4.12 shows that six factors are statistically significant in determining what influences employees in a banking firm in South Africa to telecommute. Telecommuting help me save time and cost (β =0.74; $p<0.05$) is positively related to telecommuting. Second factor is that companies in Gauteng should implement telecommuting, where possible (β =0.37; $p<0.05$). The third factor, not travelling to and from work, I would use the time to do work has negative effects on telecommuting (β = -0.88; p0.05).

The fourth factor, 'Readiness to telecommute', has a positive effect on an employee's chance of telecommuting (β =1.1; $p<0.05$), while the fifth factor, 'Telecommuting's potential to benefit the department/company' has a positive effect on increasing the number of employees who telecommute (β =0.37; $p<0.05$). The sixth factor, 'Use of

personal hardware such as 3g/internet, etc. and spending my own data' has a positive effect on increasing the number of employees who are willing to telecommute (β =1.1; p<0.05). 'Type of employment' has a negative effect on the willingness to telecommute (β =-1.6), while residence has a positive effect.

4.9 Paired t-test

This section examines the relationship between the factors 'telecommuters' and 'non-telecommuters' through paired t-tests for paired observations.

Table 4.13: Paired t-tests for differences between telecommuters and non-telecommuters

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Do you currently telecommute?	100	0.16	0.01	0.14	-.008	0.048
Given a chance I would telecommute	100	0.02	0.04	0.37	1.087	1.233
Diff	100	0.14	0.04	0.38	- 1.215	-1.065

mean(diff) = mean (telecommute-telecommute (given a chance)) t = -3.3 Pr(T < t) = 0.009

The results indicate that there is a positive (0.14) difference between the means of telecommuting-I would telecommute if given a chance, the p-value associated with the t-test is statistically significant at 5% level (p <0.05). Hence, the null hypothesis (Ho: mean(diff) = 0) that the perceptions of telecommuters and non-telecommuters are not similar is rejected. A conclusion can therefore be made that there is a positive relationship between telecommuters and non-telecommuters.

4.10 Multivariate regression analysis (MANOVA)

A MANOVA test was conducted on factors affecting telecommuting, where telecommuting was used as an independent variable which is explained by independent variables (factors).

Table 4.14: Regression analysis: factors affecting telecommuting

Telecommuting (Dependent Variable)	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]	
Current telecommuting arrangement is working for me	0.097	0.25	0.39	0.705	- 0.441	0.635
I have all the tools (Smartphone, tablet, etc..)	- 0.199	0.19	-1.03	0.321	- 0.613	0.216
I would recommend telecommuting to ease traffic congestion	0.134	0.19	0.69	0.504	- 0.284	0.551
Telecommuting will help me spend more time working on tasks	0.122	0.37	0.33	0.745	- 0.667	0.911
Because of telecommuting, my productivity has increased	0.154	0.34	0.46	0.653	- 0.567	0.876
Telecommuting helps me save on travelling time	- 0.014	0.37	-0.04	0.97	- 0.808	0.780
Telecommuting improves my work-life balance	0.074	0.23	0.33	0.75	- 0.414	0.562
_cons	1.489	0.48	3.11	0.008	0.461	2.517

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance: Variables: fitted values of Telecommuting
hi2(1) = 4.28 Prob > chi2 = 0.0386

An increase in productivity is positively related to telecommuting (β=0.15; p>0.05), i.e. it is likely to be a result of telecommuting. Telecommuting helps me spend more time working on tasks is positively related to telecommuting (β=0.12; p>0.05). telecommuting ease traffic congestion is positively related to telecommuting (β=0.13; p>0.05). The current telecommuting arrangement is working for me is positively related to telecommuting (β=0.1; p>0.05). Telecommuting helps improve my work-life balance is weakly and positively related to telecommuting (β=0.1; p>0.05). Having all the tools e.g. smartphones etc. is negatively related to telecommuting (β=0.2; p>0.05), i.e. a decrease in the tools is likely to decrease telecommuting. Saving on travelling time is negatively and very weakly related to telecommuting (β=-0.004; p>0.05), i.e. telecommuting may lead to a decrease in time spent in travelling.

- **Willingness to telecommute**

Table 4.15: Overall model fit

Source	SS	df	MS	Number of obs	=	22
				F(7, 14)	=	1.67
Model	3.313	7.00	0.473	Prob > F	=	0.095
Residual	3.959	14.00	0.283	R-squared	=	0.456
				Adj R-squared	=	0.183
Total	7.273	21.00	0.346	Root MSE	=	0.332

The R-squared is 0.46, indicating that the explanatory power of the model is 46%, probably due to the small sample size. The pre-model fit statistics indicate that the overall predicted model is fit (Prob > F =0.09. The root mean square error (MSE) is 0.53, indicating that the predicted values vary by 33% from the actual.

Table 4.16: Regression analysis: willingness to telecommute

Q21	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
I use my personal hardware	0.065	0.09	0.74	0.469	- 0.123	0.254
There is currently no need for me to physically be in the office	**0.117**	0.09	1.3	0.214	- 0.075	0.309
I am able to collaborate with my colleagues and customers remotely	0.097	0.14	0.68	0.506	- 0.207	0.401
When I am not travelling to and from work, I use the time to do	- 0.010	0.23	- 04	0.966	- 0.510	0.490
Telecommuting is beneficial to my department/company	0.344	0.19	1.8	0.093	- 0.066	0.754
I would consider changing myjob for the same emoluments if the job offered telecommuting	- 0.010	0.16	0.06	0.952	- 0.350	0.330
I regard telecommuting as a perk I require in a job	0.007	0.14	0.05	0.957	- 0.287	0.302
_cons	0.800	0.38	2.11	0.053	- 0.011	1.611

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance Variables: fitted values of Telecommuting
chi2(1) =0.87 Prob > chi2= 0.035

The factor with the greatest effect on telecommuting was that telecommuting is beneficial to the department/company (β=0.34; p>0.05). This suggests that because telecommuting is viewed as beneficial, it is likely to increase. The second rated factor is that there is currently no need for respondents to physically be in the office (β=0.12; p>0.05); the more the respondents believe that they do not need to be in an office, the more they will be willing to telecommute. Remotely collaborating with my colleagues and customers is positively related to telecommuting (β=0.1; p>0.05), thus an increase in remote collaboration is likely to increase telecommuting. Use of personal hardware is positively related to telecommuting (β=0.1; p>0.05), therefore an increase in personal

hardware is likely to increase willingness to telecommute. ‘Telecommuting is a perk I require in a job’ seems to have negligible effect on telecommuting.

4.11 Chapter summary

This chapter presented the results of the quantitative data analysis from the survey. Sections 4.2 and 4.3 of the chapter dealt with descriptive statistics, Section 4.4 presented general comments and suggestion data, Section 4.5 presented the reliability test that measured the data’s reliability, Section 4.6 presented normally distribution which made data analysis easier. Sections 4.7, 4.8, 4.9 and 4.10 presented inferential statistics. The majority of the respondents were non-managers, which made the research balanced as it aimed to understand employee attitudes. Only one question was queried by a participant who requested clarity regarding one of the survey questions, which implies that the participants were familiar with the domain that the questionnaire was covering.

Based on the study, it has been found that the majority of the participants perceive that telecommuting has many benefits from the perspective of themselves, the company and South Africa. They are willing and ready to telecommute, however there are barriers and risks that are inhibiting telecommuting adoption, including the fact that the company is not ready to embrace telecommuting. The findings further suggest that participants would like to have pilot studies on telecommuting in order to yield these benefits, and are interested in making sacrifices to telecommute. Chapter 5 presents a discussion of the results.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

This study investigated the attitudes of employees towards telecommuting adoption in a banking firm in South Africa in Gauteng province. This chapter discusses the findings as presented in Chapter four in relation to the objectives that were set out for the study, which will be explained in conjunction with previous research. Objectives are discussed in the following sections and the findings are summarised according to those objectives.

5.2 Findings

This section discusses the findings of the study in accordance with the objectives of the study.

5.2.1 Objective 1: Telecommuting adoption rate in FNB

The telecommuting adoption rate was investigated based on participants who were telecommuting versus those who were not telecommuting, as well as telecommuting frequency. The telecommuting adoption rate in FNB business segment was 14.8%. Of the telecommuters, 67% of the participants were female and 33% were male. The study further showed that of the non-telecommuters, 53.75% of the respondents who are wanting to telecommute were female and 46.25% were male. A study conducted by Worksnug (2016) found that telecommuting adoption is 32% of full-time telecommuters and 82% part-time. The results from this study thus show that the telecommuting adoption rate in FNB is lower than South Africa's telecommuting adoption rate.

The frequency of telecommuters was investigated and it was found that 40.9% of the respondents were telecommuting one or more days a week, 45.5% were telecommuting occasionally, and 13.6% were telecommuting one or more days a month. The telecommuting frequency of 40.9% (one or more days a week) is slightly above 33%, which was found in a study by Worksnug (2016).

The majority of the telecommuters indicated that they were happy with their current telecommuting agreement, and did not indicate that they had experienced any problems as a result of telecommuting. They did highlight increased productivity, less distractions,

cost and time savings, improved communication and better work-life balance, however. The results of the study confirm the research of Hamilton (2002), Ordendal and Roodt (2002), Golden and Veiga (2005), Fonner and Roloff (2010) and Gajendran and Harrison (2007), which found that telecommuting leads to increased job satisfaction. This study further investigated the agreements governing the existing telecommuting, and it was found that there are inadequate policies available. Only 22% of the participants had a formal written agreement - the rest were informal and oral agreements. This was identified as one of the barriers to telecommuting adoption.

5.2.2 Objective 2: Factors that positively influence employees in FNB to telecommute

Factors that are positively influencing employees to telecommute were investigated using closed- and open-ended questions. Principal component analysis was carried out to determine which factors are critical for telecommuting adoption. Factors that influence telecommuting were grouped for telecommuters and non-telecommuters. The PCA found that influential factors among telecommuters were themed as: productivity (telecommuting will help me spend more time working on tasks and objectives, and when I am not travelling to and from work, I use the time to do work); job satisfaction (I would consider changing my job for the same emoluments if the job offered telecommuting); and traffic congestion (I would recommend telecommuting to ease traffic congestion).

The component test analysis test found that there are four key influential factors among non-telecommuters, i.e. traffic congestion (telecommuting will help save on travelling time); cost savings (telecommuting will save my time and cost of travelling); tools (I can use my personal hardware such as 3g/internet, etc. and spend my own data); and productivity (telecommuting will affect my productivity positively).

The current study showed that the influential factors vary between telecommuters and non-telecommuters, however productivity and traffic congestion are common factors among both.

An ordinal logistic regression test was used to determine the significant factors in influencing telecommuting. This test found that some factors are statistically significant

in determining influence telecommuting employees in a banking firm in South Africa, namely cost savings (telecommuting helps me save time and costs); and benefits (companies in Gauteng should implement telecommuting, where possible and telecommuting potential to benefit the department/company).The ordered regression model highlighted that cost savings and the desire to implement telecommuting in the organisation and South Africa are seen as most significant. It can be seen that the respondents were convinced about the benefits of telecommuting. Cost saving was highlighted as a common factor by both ordinal regression and PCA model. The ordinal regression model highlighted, however, that there is no guarantee that non-telecommuters will use time savings to do work.

A MANOVA test was conducted which found that the following factors have a direct correlation with telecommuting, namely productivity (spend more time working on tasks and objectives); job satisfaction (the current telecommuting arrangement is working for me); and traffic congestion (I would recommend telecommuting to ease traffic congestion). There is no literature available investigating any correlations between factors and telecommuting. This test corroborated the findings of the PCA model and highlights productivity and traffic congestion as common factors.

A paired t-test was conducted between telecommuters and non-telecommuters; the findings were that telecommuters are likely to be influenced by the same factors as non-telecommuters in terms of adoption.

The principal component analysis, ordinal logistic regression, MANOVA and t-test conducted on telecommuting factors, and the finding of the study regarding traffic congestion, corroborates the findings of Baard and Thomas (2010), who noted that increased traffic congestion is a factor influencing telecommuting. The results also confirm a study by Son and Upali (2008), who found that telecommuting leads to a reduction in traffic flows and travel time on roads. This study has found that the respondents believe they would save an average of R1,170 per respondent per month, and an average of two hours (daily commute time) per participant per day, as a result of telecommuting. Non-telecommuters also perceived that there would be a time saving, which was a factor influencing their interest in telecommuting. Coupled to this, the participants agreed that they would spend more time on work if they were not spending

the time in traffic. A study by Baard and Thomas (2010) found that there is a tendency for telecommuters to work longer hours, which could be seen as problematic, however there is no guarantee as shown by the ordered regression model.

The participants identified office distractions as one of the factors influencing telecommuting. The respondents believe that telecommuting will enable them to focus more on their jobs without distractions in the form of meetings, etc. There is a perception that telecommuting will increase their overall productivity, which corroborates studies conducted by Soenanto et al. (2016), Patterson et al. (2014) and Hamilton (2002), which found that a good and reliable telecommuting system has a positive influence on productivity. When linking this to the time savings that will be gained from telecommuting, the company stands to gain just over five working days (22 days multiplied by two hours divided by 8.75 hours) gain in productivity per respondent per month. These results further confirm a study by Bloom et al. (2013), who found that employees working from home increased their productivity by 13%, as well as Baard and Thomas (2010), who found that participants with no or one dependent have increased their working hours since telecommuting.

The findings of the study based on the open-ended question data analysis identified work-life balance as a factor that influences inclination to telecommute. Additionally, participants viewed telecommuting as providing them with flexibility and convenience. The results of this study concur with a study by Lakshmi et al. (2017), which found that telecommuting improves work-life balance. The results of this study determined that telecommuters have increased job satisfaction, as per a study by Smith et al. (2015), who found that there is a positive relationship between telecommuting and job satisfaction.

5.2.3 Objective 3: Attitudes of employees towards to adopting telecommuting in FNB

An ordinal logistic regression test was used to determine the significant willingness factors to telecommute. This test found that the willingness factors shared by both telecommuters and non-telecommuters are benefits (telecommuting is beneficial to the department/company); not being bound by office tasks (no need for respondents to physically be in the office - the more the respondents see that they do not need to be in

an office, the more willing they are to telecommute); sacrifices (I can use my personal hardware to telecommute); collaboration (preference towards remote collaboration); and telecommuting being viewed as a perk.

The respondents are ready and willing to telecommute; in fact, the results show that the non-telecommuters are willing to sacrifice their own money to telecommute, and they have the tools required to telecommute. This study confirms a study by Mugwika et al. (2016), which found that portable devices such as smartphones and tablets have increased mobility amongst employees. This study found that four in every 10 employees are ready to approach their managers to discuss telecommuting and have shown a readiness to telecommute, however they do not think that the company is ready. These results are in contrast with a study done by Ye (2012), which highlighted inefficiencies due to geographical dispersion and lack of proximity among co-workers.

The respondents regard telecommuting as a perk they require in the job, and are willing to change current job for telecommuting job even if the job paid the same emoluments provided it offered telecommuting. The results of the study corroborate research by Stroh et al. (2001), who found that telecommuting is regarded as a motivator as per Herzberg, Maslow, Vroom's expectancy and Adam's equity motivational theories. The findings of the study are consistent with a study conducted by Gallup (2017), which found that more than half (53%) of employees prefer a job that offers work-life balance, and they deem this to be very important when considering taking a new job. In a study conducted by Kossek, Lautsch and Eaton (2006), it was found that work-life benefits through telecommuting led to lower turnover intentions by employees.

5.2.4 Objectives 4: Identify attitudes of employees towards barriers to telecommuting adoption in FNB

The barriers inhibiting telecommuting in the organisation were investigated and identified as a lack of telecommuting policy, low levels of trust, stringent access control, a lack of education of both employees and employers, high data costs, slow broadband speed, and poor management of the millennial workforce and its sophistication. In this study, a lack of telecommuting policy was identified as inhibiting telecommuting adoption, as per research conducted by Duke (2016). This study also identified low levels of trust as a second barrier, which is consistent with Noonan and Glass' (2012)

study that found that managers are reluctant to give up control because they are afraid that workers who telecommute will not complete their work. Access control and privacy was identified as a third barrier to telecommuting, which corroborates a study by Koch and van Brackel (2010).

The readiness of companies to manage millennial workforce and sophistication is key finding of this study. According to a study by PWC (2012), work/life balance is a priority for millennials. Millennials are also overachievers, are accountable for their actions, and possess computer proficiencies, thus giving them a competitive advantage (Kaifi, et al., 2012). Yet the respondents also identified risks related to telecommuting, i.e. a lack of collaboration and difficulty and complexity managing telecommuters. A study by Blout (2015) found that a lack of collaboration and employee engagement is a risk associated with telecommuting, which is consistent with the current study, as well as a study by Ye (2012) that found that there are difficulties managing remote workers.

5.3 Chapter summary

The main objective of this study was to investigate the attitudes of employees towards telecommuting in a banking firm in South Africa in Gauteng province. Based on the objectives and the data collected and analysed, it was shown that employees are willing to telecommute, even though there are inadequate or no policies in place to govern telecommuting. Employees are familiar with the benefits of telecommuting and would like to exploit those benefits for themselves, their organisation and South Africa as a whole. Barriers and risks were also identified, which will need to be addressed in order to increase telecommuting adoption. The objectives of the study were met despite the limited telecommuting literature in the African, South African and banking contexts. The following chapter will discuss a conclusion and recommendations.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This study explored the attitudes of employees towards telecommuting in a banking firm in South Africa. Telecommuting has many benefits, such as increased productivity, cost savings, improved work-life balance, less absenteeism, better health and less congestion, yet South Africa is lagging behind other countries in terms of telecommuting adoption. The banking sector in particular is behind, which is why a study was necessary to understand where FNB is in terms of telecommuting adoption. The study aimed to help the organisation to implement or increase telecommuting adoption to realise the benefits. The main objectives of the study were to determine the telecommuting adoption rate in a banking firm in South Africa; to assess the willingness of employees to adopt telecommuting in a banking firm in South Africa; to identify factors that are positively influence employees in a banking firm in South Africa to telecommute; to identify barriers to telecommuting adoption in a banking firm in South Africa; and to provide recommendations that could improve the adoption rate of telecommuting in banking.

A quantitative study was conducted whereby a survey was designed and sent out to employees in FNB business segment. Data were collected and analysed using descriptive and inferential statistics. This chapter draws conclusions and make recommendations based on the findings of the study.

6.2 Conclusions/Findings

The banking industry is seen as one of the sectors that is technologically advanced. The study investigated attitudes of employees towards telecommuting adoption in a banking firm in South Africa. Following are the key findings of the research study.

6.2.1 Telecommuting adoption

Telecommuting forces are employer-initiated and/or employee-initiated; when these forces are balanced, optimal telecommuting adoption is attained. This study focused on employee-initiated telecommuting. The telecommuting adoption rate was investigated, along with factors influencing telecommuting from an employee's perspective, and the

willingness and readiness of employees to influence telecommuting adoption. The telecommuting adoption rate found in this study was 14.8%.

6.2.2 Benefits of telecommuting

The study found that for the respondents who are telecommuting, productivity, cost savings, work-life balance and less traffic congestion were rated as the top four benefits of telecommuting. Furthermore, the respondents were satisfied with their telecommuting arrangements.

6.2.3 Factors influencing telecommuting

The most influential factors identified for telecommuters were increased productivity, higher job satisfaction and less traffic congestion. Non-telecommuters' most influential factors were less traffic congestion, cost savings, increased productivity and telecommuting tools. Productivity and traffic congestion were highlighted as being common among the two groups. Significant factors influencing telecommuting were cost savings and the benefits of telecommuting. There was a positive correlation between the factors influencing telecommuters and non-telecommuters, which means that there is a likelihood that the two groups would be influenced by the same factors. These factors are important for FNB to look at while designing and implementing telecommuting programmes, as they provide valuable input for predicting telecommuting factors in the future.

Job satisfaction, productivity and traffic congestion have shown a positive correlation to telecommuting.

6.2.4 Willingness and readiness to telecommute

Employees are willing and ready to telecommute, as was demonstrated by their willingness to make sacrifices such as using their own data and hardware, as they believe that telecommuting benefits extend beyond the organisation. They believe that companies in Gauteng should consider implementing and increasing telecommuting adoption. The employees also indicated that they believe that the company is not ready to telecommute - the reasons for this are provided in the next section.

6.2.5 Barriers and risks

Barriers have been cited by employees as inhibiting telecommuting adoption in banking and South Africa in general, i.e. a lack of telecommuting policy, lack of trust, stringent access controls, high data costs and slow broadband speed, millennial workforce and sophistication. These barriers were cited as the reason why telecommuting adoption is very low in FNB have highlighted slow adoption to new ways of managing millennials workforce. This makes suggestions to embracing of changes in management, culture and ways of working in order to get millennials engaged at work. Telecommuting also comes with its own risks, such as a lack of collaboration, difficulty in managing telecommuters, and data privacy issues.

6.3 Recommendations

The findings and approach of this research could be used to contribute and benefit the telecommuting practice in banking and South Africa in general. This study recommends various interventions that could be implemented to help increase telecommuting adoption in FNB.

6.3.1 Formalisation of telecommuting policies

FNB should consider formulating a comprehensive telecommuting policy, which is comprised of job categories, levels and governance in terms of working hours/ productive time, monitoring and acceptable use of company resources in cases where company resources are used as well as care for personal devices that employees are using to access or store company information. Security regarding personal devices in order to safeguard against compromising data and theft is also key. This policy should be used as guidelines for both managers and employees in order to implement telecommuting.

The policy should include a compensation incentive for employees who use their own tools, and must be created by Human Resources at FNB. Employees should have a day or two in a week where they are able to go to the office and meet some of the stakeholders, colleagues and managers face-to-face to ensure that human contact is maintained. The telecommuting policy will be used as a reference for supervision of telecommuting practice across the entire organization in order to create and maintain

discipline. The policy will assist FNB in creating and maintaining consistency regarding the application of telecommuting by both employees and the employer.

6.3.2 Pilot telecommuting

Based on the policy created, the recommendation is to pilot telecommuting amongst a select group of employees or in specific areas; measure the benefits; and amend the policy where necessary until the telecommuting process has stabilised. Impact assessments should be performed regarding the tools of trade that employees require in order to telecommute, which must be made available, or employees must be allowed to use their own tools.

The rationale for piloting telecommuting is to provide FNB with an opportunity to implement telecommuting in a small scale so to minimize the impact in an event of failure. This approach will enable FNB to identify risks right up front, implement corrective or mitigation actions before implementing to the wider employee base. Tangible and intangible telecommuting benefits can be quantified during the process which in turn can be used to sell change to the rest of the organization in order to fast-track change management process.

6.3.3 Buy-in and awareness

Training and awareness campaigns regarding telecommuting should be conducted for the whole organisation, covering the telecommuting process, policy and procedures in order to educate employees and employers about the acceptable use and management of telecommuting. This process will ensure buy-in, clarity and transparency. Employees should receive regular communications and online training regarding telecommuting, so that the risks and expectations are managed.

Awareness programs are important for behaviour changes and reinforcement while placing a lot of emphasis on the correct application of telecommuting policies. Awareness and training programs will also be used as input mechanism for employees to provide FNB with necessary feedback to make necessary adjustments. Online training will promote knowledge and awareness of telecommuting by requiring employees to take competence testing on specific aspects of the telecommuting policies.

6.3.4 One size does not fit all

A telecommuting option should be created which gives employees flexibility, as opposed to having a blanket approach to telecommuting. Certain roles might not require a very intense telecommuting policy compared to others, thus a policy should have flexibility to cover all scenarios. FNB should consider profiling different roles according to the nature of work across multiple areas in order to ascertain propensity and the extent for the roles to telecommute.

Discretion should also be provided to the management and employee with regards to the application of telecommuting depending on the intensity of telecommuting. This approach will provide management with ability to customise telecommuting programs based on the needs of different areas in the organization. Furthermore, this will assist in the change management process as employees and management will not feel restricted of conforming to a single approach. It is important to emphasize that telecommuting oversight team should have a view of the different approaches to be implemented in order to foster consistency and fairness.

6.3.5 Support for telecommuters

Support structures, such as desktop support, etc., must be aligned to ensure capacity to support telecommuting employees in order to avoid productivity loss during hardware and software failures. Access and use of devices is very key to telecommuters and failures to devices or tools of trade and/or software will result in productivity loss due to inactivity. FNB should create support teams that will be available on-demand and able to support telecommuter remotely.

Furthermore, there must be a convenient support model within which employees can exchange devices with relative ease should the support team not able to assist telecommuters remotely. The organization systems must be available in cloud-based alternative in order to encourage users to find alternatives to perform work when primary devices are not available for use. Furthermore, the systems must be device agnostic and optimised for mobile technologies to provide even greater variety and broader choice with regards to the device pool to be used for telecommuting.

6.3.6 Foster accountability and trust

A culture of accountability must be created so that employees take ownership of the tasks that are meant to be completed, and there should be systems in place to manage and monitor performance. Accountability is important in an organization because it presents the employer with numerous benefits, namely, responsibility, promotes trust, saves time and money and promotes empowerment. Trust between employees and managers is key and must be fostered as telecommuters will be left on their own to perform tasks.

An accountability culture will enable employees to take more responsibility to the day-to-day tasks and ensuring that they are completed. In this way, employees will be empowered to make decisions regarding their work. Mechanisms for measuring performance for telecommuter will need to be put in place to serve as "double-checking" mechanism to provide pro-active monitoring of work and highlighting of issues first hand.

6.4 Recommendations for future studies

This research is pioneering in its assessment of employee attitudes towards telecommuting in a banking firm in South Africa, and draws conclusions as to the adoption rate, factors influencing telecommuting, willingness and readiness of employees to adopt telecommuting, and barriers hindering telecommuting adoption. Further research studies need to be carried in other provinces in South Africa to establish the application of the findings, especially in light of worsening traffic congestion in South Africa. Additionally, similar studies can be conducted across the entire organisation as well as the banking sector in South Africa, in order to contribute to the literature beyond the current organisation. Mixed methods research must be conducted in order to explore the telecommuting further and mixed method will provide large data needed to make generalization.

In addition, future studies should seek to understand industries which are geared for telecommuting and carry out similar studies. Furthermore, the current research focused on employee-initiated telecommuting, thus future research should focus on employer-initiated telecommuting and ascertain what both employers and employees can do to increase telecommuting adoption. The future studies can be conducted on clients as well in order to ascertain how telecommuting affect the service that organizations

provide to customers. Telecommuting comes in many forms, namely, home-based telework, mobile telework, alternative telework and collective telework. The viability of these telecommuting forms based on company suitability should be researched further. These future studies will contribute greatly to telecommuting literature.

6.5 Chapter summary

The main aim of this study was to explore the attitudes of employees towards telecommuting adoption in a banking firm in South Africa. The research objectives as identified were met and the limitations of the study were identified and recorded. The review of literature and findings of this study have provided FNB with an understanding of the willingness and readiness of employees to telecommute, and provides recommendations for telecommuting implementation strategies. Companies in South Africa have a responsibility to contribute to green planet programmes and telecommuting contributes to this worthy cause.

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Appendix 1: Informed consent

Informed Consent Letter 3C

UNIVERSITY OF KWAZULU-NATAL
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

MBA Research Project
Researcher: Dlayani David Mavukani (0829639907)
Supervisor: Dr. Cecile Gerwel Proches (0312608318)
Research Office: Ms P Ximba (0312603587)

Dear Respondent,

I, Dlayani David Mavukani, am a Masters of Business Administration student, at the Graduate School of Business and Leadership, of the University of KwaZulu-Natal. You are invited to participate in a research project entitled: "Exploring attitudes of employees towards telecommuting adoption in banking firm in South Africa". The main aim of this study is to understand telecommuting in banking and specifically pay attention to the actions employees are willing to take to influence adoption of telecommuting.

Through your participation I hope to understand the current state of telecommuting in this banking firm. The results of the survey are intended to contribute to highlight any barriers that may exist and identify strategies to increase telecommuting adoption in banking.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this interview. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN.

If you have any questions or concerns about participating in the survey about participating in this study, you may contact me or my supervisor at the numbers listed above.

The survey should take about 15minutes. I hope you will take the time to participate.

Sincerely,

Investigator's signature_____ Date_____

This page is to be retained by the participant.

UNIVERSITY OF KWAZULU-NATAL
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

MBA Research Project
Researcher: Dlayani David Mavukani (0829639907)
Supervisor: Dr. Cecile Gerwel Proches (0312608318)
Research Office: Ms P Ximba (0312603587)

CONSENT

I…… (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT ……... DATE……

Appendix 2: Questionnaire

UNIVERSITY OF KWAZULU-NATAL
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

MBA Research Project
Researcher: Dlayani David Mavukani (0829639907)
Supervisor: Dr. Cecile Gerwel Proches (0312608318)
Research Office: Ms P Ximba (0312603587)

Exploring attitudes of employees towards telecommuting adoption in a banking firm in South Africa

Section A: Demographic Information

1. What is your Gender?
   - ☐ Male (1)
   - ☐ Female (2)

2. What is your marital status?
   - ☐ Single/Unmarried (1)
   - ☐ Married (2)
   - ☐ Divorced (3)
   - ☐ Widowed (4)

3. Your employment level?
   - ☐ Non-manager (1)
   - ☐ Manager (2)

4. Number of years in FNB?
   - ☐ 0-3 years (1)
   - ☐ >3-10 years (2)
   - ☐ More than 10 years (3)

5. Area you reside in?
   - ☐ Johannesburg (1)
   - ☐ East Rand (2)
   - ☐ Gauteng South and Midvaal (3)
   - ☐ Midrand (4)
   - ☐ Pretoria (5)
   - ☐ Centurion (6)
   - ☐ West Rand (7)
   - ☐ Other: _____

6. How do you travel to the office every day?
   - ☐ Drive alone (1) ___ day(s) a week (2)
   - ☐ Car pool (3) ___ day(s) a week (4)
   - ☐ Walk (5) ___ day(s) a week (6)
   - ☐ Train (7) ___ day(s) a week (8)
   - ☐ Other: _____ _____ day(s) a week (9)

   You can select more than one answer

7. How many kilometers do you stay from the office?

   _____ Kilometers, one way (1)

8. What is the approximate cost per month of your travel to and from work?

   R _____ per month (1)

9. What is your normal start time at work?
   - ☐ 8H00 AM (1)
   - ☐ 8H30 AM (2)
   - ☐ 9H00 AM (3)
   - ☐ 9H30 AM (4)
   - ☐ 10H00 AM (5)
   - ☐ 10H30 (6)
   - ☐ Other (HH:MM AM/PM) _____

10. How many hours do you spend in traffic per work day?

    _____ Hour(s) (1)

Section B: Telecommuters (Please complete only if you currently telecommute. If you do not, then proceed to Section C)

1. Do you currently telecommute?
   - ☐ Yes (1)
   - ☐ No (2)

If yes, how often? (Check the best answer)
   - ☐ One or more days per week (3)
   - ☐ One or more days per month (4)
   - ☐ Occasionally (5)

2. What telecommuting agreement do you have with your company?
   - ☐ Formal written agreement (1) ☐ Informal agreement (2)
   - ☐ Formal oral agreement (3)
   - Other: _____

3. Indicate reasons for telecommuting
   Reason(s): _____

4. Indicate benefits you are getting from telecommuting
   Benefit(s): _____

5. What is the approximate cost savings per month of your travel to and from work?
   R _____ per month

6. Current telecommuting arrangement is working for me
   ☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

7. I have all the tools (Smartphone, tablet, laptop/computer, 3G/network line, etc.) I need to telecommute
   ☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

8. I use my personal hardware such as 3g/internet, etc. and spend my own data/airtime to telecommute
   ☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

9. There is currently no need for me to be in the office
   ☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

10. I am able to collaborate with my colleagues and customers remotely

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

11. I would recommend telecommuting to ease traffic congestions

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

12. - Telecommuting will help me spend more time working on tasks and objectives

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

13. Because of telecommuting, my productivity has increased.

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

14. Telecommuting helps me save on travelling time

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

15. When I am not travelling to and from work, I use the time to do work

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

16. Telecommuting improves my work-life balance

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

17. Telecommuting is beneficial to my department/company

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

18. I would consider changing my job for the same emoluments if the job offered telecommuting

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

19. I regard telecommuting as a perk I require in a job

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

20. Indicate any problems/issues encountered due to telecommuting or make suggestions

21. Indicate what is working well about telecommuting

Section C: Non-telecommuters (Please complete only *if you do not* currently telecommute)

1. Given the opportunity, I would telecommute
   - ☐ Yes (1)
   - ☐ No (2)

   If yes, how often? (Check the best answer)
   - ☐ One or more days per week (3)
   - ☐ One or more days per month (4)
   - ☐ Occasionally (5)
   - ☐ Every weekday (6)

2. Number of days per week I would telecommute given an opportunity

   _____ Days

3. Indicate reasons for wanting to telecommute?

   Reason(s): _____

4. I am planning to approach my company or manager to have a telecommuting arrangement?

   ☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

5. Indicate the ICT (information and communications technology) hardware you currently have at home.

   ☐ Telephone (1) ☐ Computer (2) ☐ Printer (3)
   ☐ Smartphone/Tablet (4) ☐ Internet/Modem (5) ☐ Copy machine (6)

   Other: _____

   Software: _____

6. I or my company anticipate purchasing any additional hardware or software if I were to telecommute?

☐ Yes (If so, what?) (1) _____

☐ No (2)

7. I take work to finish at home?

☐ Yes (If so, how often?) (1) _____ days per week

☐ No (2)

8. I will feel uneasy or uncomfortable about getting to work on time if I were to telecommute.

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

9. I am concerned that my relationship between my supervisor and I would change if I were to begin telecommuting

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

10. Telecommuting will favorably affect the quality of my work

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

11. Telecommuting will affect my productivity positively

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

12. Telecommuting will help me manage the time I spend on my work

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

13. Telecommuting will help save on travelling time

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

14. If I were not travelling to and from work, I would use the time to do my work

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

15. Telecommuting will improve my work-life balance

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

16. Responsibilities outside work restrict my ability to be productive at work

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

17. Telecommuting has the potential to benefit my department/company

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

18. My company is ready to adopt telecommuting

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

19. Companies in Gauteng should implement telecommuting, where possible.

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

20. I am ready to telecommute

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

21. I can use my personal hardware such as 3g/internet, etc. and spend my own data/airtime to telecommute

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

22. Telecommuting will save my time and cost of travelling

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

23. I would consider changing my job for the same emoluments if the job offered telecommuting

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

24. I regard telecommuting as a perk I require in a job

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

25. Telecommuting is the solution to traffic congestions

☐ Strongly Agree (1) ☐ Agree (2) ☐ Neutral (3) ☐ Disagree (4) ☐ Strongly Disagree (5)

Section D: General (all to complete)

1. What I think can be done to increase telecommuting adoption?

2. Benefits of telecommuting to me and my organization?

3. List potential risks/barriers or considerations to be taken into account during telecommuting implementation?

Additional comments:

Appendix 3: Gatekeeper letter

FNB BUSINESS
5th Floor, 4 First Place, BankCity
Cnr Simmonds & Pritchard Streets
Johannesburg, 2001
P.O. Box 7791
Johannesburg, 2000
Email address, lbrake@fnb.co.za
Web: www.fnb.co.za
Tel: 087 311 8614
Fax: 011 371 6650

how can we help you?

06 March 2017

Dr Cecile Gerwel Proches
Graduate School of Business and Leadership
University Of KwaZulu-Natal
Westville Campus
Durban
3630

Dear Dr C.G Proches

Subject: Exploring attitudes of employees towards telecommuting adoption in a banking firm in South Africa

This letter will serve as authorisation for **David Mavukani** to conduct research in a form of a generic based survey as part of his completion of his Masters in Business Administration. His chosen topic is titled *"Exploring attitudes of employees towards telecommuting adoption in a banking firm in South Africa* "at our organisation.

We are Glad to offer him an opportunity to conduct the survey based research in our business and fully support his learning and development objectives in this regard. Research activities such as surveys/questionnaires that involve FNB or FirstRand Employees will be duly supervised by FNB Business CII HR under the following conditions:

- A list of participants and questions needs to be submitted beforehand (or individually prior to it being sent out)
- No commercially sensitive information can be shared in any report and we place reliance on the University's ethics process to cover the correct usage of our information during the research process.

Yours Sincerely,

[redacted]

Nainesh Desai
FNB Business Chief Risk Officer
Copy: FNB Business CII HR: Marvin Opperman

Directors: LL Dippenaar (Chairman), JP Burger (CEO), VW Bartlett, AP Pullinger (Deputy CEO), MS Bomela, P Cooper (Alternate), JJ Durand, GG Gelink, PM Goss, NN Gwagwa, PK Harris, WR Jardine, HS Kellan, F Knoetze, RM Loubser, EG Matenge-Sebesho, PJ Makosholo, AT Nzimande, D Premnarayen (India), BJ van der Ross, JH van Greuning.
Company Secretary: C Low.
First National Bank – a division of FirstRand Bank Limited. An Authorised Financial Services and Credit Provider (NCRCP20). Reg. No. 1929/001225/06.

Appendix 4: Ethical clearance

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

19 April 2017

Mr Dlayani David Mavukani (992208766)
Graduate School of Business & Leadership
Westville Campus

Dear Mr Mavukani,

Protocol reference number: HSS/0276/017M
Project title: Exploring attitudes of employees towards telecommuting adoption in a banking firm in South Africa

Full Approval – Expedited Application

In response to your application received on 29 March 2017, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and FULL APPROVAL for the protocol has been granted.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

[redacted]

Dr Shenuka Singh (Chair)

/ms

Cc Supervisor: Dr Cecile Gerwel Proches
Cc Academic Leader Research: Dr Muhammad Hoque
Cc School Administrator: Ms Zarina Bullyraj

Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 **Facsimile:** +27 (0) 31 260 4609 **Email:** singhsh@ukzn.ac.za / snymanm@ukzn.ac.za / mohunp@ukzn.ac.za
Website: www.ukzn.ac.za

1910 - 2010
100 YEARS OF ACADEMIC EXCELLENCE
Founding Campuses: Edgewood, Howard College, Medical School, Pietermaritzburg, Westville

Appendix 5: Declaration – thesis edited

JENNIFER LINDSEY-RENTON

PO Box 68648
Bryanston
2021
1st July 2017

To whom it may concern,

This letter is to confirm that I am a professional editor and proof reader and that I have edited David Mavukani's dissertation, the title being: *Exploring Attitudes of Employees Towards Telecommuting Adoption in a Banking Firm in South Africa.*

For any queries, please contact me on jenniferrenton@live.com.

Yours sincerely,

Jennifer Lindsey-Renton

Appendix 6: Turnitin report

David Mavukani MBA Thesis Final Submission

ORIGINALITY REPORT

%0	%0	%0	%0
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

EXCLUDE QUOTES	ON	EXCLUDE MATCHES	< 1%
EXCLUDE BIBLIOGRAPHY	ON		