



**THE PERCEPTION OF THE EFFECTIVENESS OF CARROTS IN COMPARISON TO
STICKS ON TAX COMPLIANCE OF INDIVIDUALS**

This mini-dissertation is part of a research project on the perceptions of the effectiveness
of carrots in comparison to sticks on tax compliance

by

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ABSTRACT

THE PERCEPTION OF THE EFFECTIVENESS OF CARROTS IN COMPARISON TO STICKS ON TAX COMPLIANCE

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Background: The majority of tax revenue is collected by the revenue authorities by virtue of personal income tax. Therefore, it is imperative to consider the perceived effectiveness of carrots in comparison to sticks on the tax compliance of individuals. In a South African context, enforcement strategies and measures that seek to encourage voluntary tax compliance are applied in order to improve tax compliance amongst individual taxpayers. Therefore, examining the impact of carrots (measures that seek to encourage voluntary tax compliance) in comparison to sticks (enforcement strategies) on tax compliance is imperative, in order to determine the most effective strategies that could be applied by tax authorities in improving tax compliance.

Main purpose of study: To determine individual taxpayers' perceived effectiveness of carrots in comparison to sticks on tax compliance, and to ascertain factors that are perceived as likely to encourage tax compliance, as well as factors perceived as likely to discourage tax compliance.

Method: A quantitative research design was applied. An online questionnaire was distributed to participants in order to collect primary data. Thereafter descriptive and inferential statistics were calculated in order to determine whether the research objectives had been met.

Results: The results indicated that a combination of carrots and sticks leads to better tax compliance amongst individual taxpayers. The majority of the participants indicated that the

impact of a carrot will be greater if the benefit obtained can be quantified. The importance of the fiscal exchange relationship between taxpayers and the government was emphasised, as the results show that unhappiness with public goods or services provided by government is perceived as likely to discourage tax compliance amongst individual taxpayers.

Conclusions: SARS mainly applies enforcement strategies to encourage tax compliance. However, although SARS already applies some carrot-based strategies, they should consider additional carrot-based strategies to encourage tax compliance amongst taxpayers.

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LIST OF ABBREVIATIONS AND ACRONYMS

Table 1: Abbreviations and acronyms used in this document

Abbreviation	Meaning
SARS	The South African Revenue Service
PIT	Personal Income Tax
SPSS	Statistical Package for the Social Sciences
AI	Artificial Intelligence
SMS	Short messaging service

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Two things in life are certain – taxes and death, however it is a fact that taxes are inevitable (Alm, 2019).

The payment and collection of taxes remain a significant challenge for taxpayers and tax authorities respectively. It is of utmost importance for tax authorities to collect all of the necessary taxes due by the taxpayers in order to ensure the well-being of a country's citizens. The well-being of a country's citizens is financed by the tax base in the form of taxes collected. However, various factors have an impact on the tax compliance of individual taxpayers; these factors include detection and punishment, the burden of taxation, the presence of government services, social norms and the tax knowledge of an individual taxpayer.

Given these factors that may negatively influence tax compliance, governments have to develop tax policies that will encourage taxpayer compliance (Martinez-Vazquez & Alm, 2003:146). Traditional tax policies were centred around the assumption that taxpayers will measure the cost (likelihood of being caught and incurring penalties) versus the benefit (tax savings) of evading taxes, hence their focus on deterrence methods (Walsh, 2012:453). Based on these traditional tax policies, it is understood that the likelihood of being caught and incurring penalties has a positive impact on taxpayer compliance (Walsh, 2012:454).

Over time, studies have been conducted that examine other factors that might have a positive influence on taxpayer compliance. Studies relating to the effect of social norms on taxpayer behaviour have concluded that taxpayers will comply with tax law because they consider compliance as the right thing to do, not due to the costs associated with being caught contravening tax laws (Wenzel, 2005).

Given the various views on factors influencing tax compliance, this study focuses on the perceived effectiveness of carrots (deterrence measures) in comparison to sticks (measures

that seek on encourage voluntary tax compliance) on the tax compliance of individual taxpayers in South Africa.

This study is relevant for South Africa as the country is experiencing a decline in tax morality. As noted by Matthews (2017), increasing tax rates, poor delivery of services to the public and negative reports about the government and the governing party may have an impact on the willingness of South Africans to pay taxes. Therefore, it is important to understand what type of measures aimed at increasing tax compliance are likely to be effective. This study sheds light on measures that are perceived by taxpayers themselves as most likely to succeed in increasing tax compliance.

The study is also relevant as it adds to the body of knowledge regarding the effectiveness of measures that aim to encourage voluntary compliance (carrots). Historically tax authorities have mainly focused on deterrence measures in order to increase tax compliance and apply measures aimed at encouraging voluntary tax compliance as a complement to the deterrence measures (Monageng, 2020). For example, the South African Revenue Service (SARS) appears to focus on enforcement measures compared to measures that encourage voluntary tax compliance, as indicated in their 2021-2022 Annual Performance Plan. They apply enforced tax compliance strategies dependant on the degree of non-compliance. The level of enforced tax compliance will vary from soft to hard enforced tax compliance strategies (South African Revenue Services, 2021). Given the fact that deterrence measures can be costly (Monageng, 2020), it is important to know whether these measures are perceived as effective by the taxpayers themselves, in comparison to measures aimed at encouraging voluntary tax compliance which tend to be cost effective.

1.2BACKGROUND

1.2.1 Individual taxpayers in South Africa

South Africa's largest source of tax revenue can be attributed to Personal Income Tax (PIT) paid by the country's individual taxpayers. This tax revenue source contributed to 39.1 per cent of the total tax revenue collections in the 2020/2021 tax year. This was an increase of 0.1 per cent compared to the prior year tax revenue collected from individuals (SARS, 2021).

In the 2020 tax year, there were 22.9 million registered individual taxpayers (SARS, 2021). In the 2020 tax year, 5.2 million individual taxpayers were assessed regarding their 2020 tax year compared to the 5.4 million that were expected to submit personal income tax returns (SARS, 2021). The aggregated taxable income of the assessed individual taxpayers was measured at R1.8 trillion. The tax liability of these assessed individual taxpayers was R407.2 billion (SARS, 2021).

1.2.2 Carrots and sticks

In this study we examine the perception of the effectiveness of carrots in comparison to sticks on tax compliance of individuals in South Africa.

According to Mascagni, Nell, Monkam and Mukama (2016), “sticks” refer to deterrence measures such as interest and penalties imposed by a tax authority on taxpayers for non-compliance, while “carrots” refer to measures to encourage voluntary tax compliance such as tax incentives introduced by a tax authority to lessen the administrative and financial burden of tax compliance on taxpayers. SARS makes use of both carrots (measures that encourage voluntary compliance) and sticks (deterrence measures such as administrative penalties) to encourage tax compliance of individuals in South Africa.

According to Maki (2020), SARS has made tax compliance relatively easy for individuals by uploading information such as retirement annuity contributions, medical aid schemes and investment income in their e-Filing profiles, and has in the recent past introduced auto assessments. These are just a few examples of measures used by SARS to lessen the administrative and financial burden on taxpayers to encourage tax compliance.

SARS also makes use of deterrence measures to enforce tax compliance. For example, all categories of taxpayers are subjected to interest and penalties for non-compliance in accordance with the Tax Administration Act 28 of 2011.

Rillstone (2015:1) states that the foundations of tax compliance policy have been focused on the deterrence methods, whereby tax authorities threatened taxpayers with audits and penalties for non-compliance to achieve the desired compliance levels (Frey & Feld, 2002:22). In Frey and Feld’s (2002) empirical analysis of deterrence measures and tax

morale, they argue that there are lower levels of tax evasion than would be expected if taxpayers were complying with tax laws in fear of deterrence measures. It can therefore be concluded that while deterrence methods are important in encouraging taxpayer compliance, there are additional non-deterrence factors that impact taxpayer compliance (Rillstone, 2015:5).

1.3 RATIONALE FOR THE STUDY

Abrie and Doussy (2006:2) highlight that governments are required to charge taxes in order for them to deliver services to the citizens of the country, however taxpayers do not always accept that they have to pay the taxes charged to them and it is in fact commonly known that taxpayers will attempt to pay the lowest tax possible. According to Merrefield (2020), non-disclosure of income is one of the most prevalent methods that is used by taxpayers to evade taxes. Tax authorities have to overcome the challenges of tax evasion to collect the highest possible tax revenue and ensure taxpayer compliance.

Taxpayer compliance is influenced by a mix of deterrence measures including audits and resulting interests and penalties for non-compliance, as well as tax incentives and trust in tax authorities. According to Ahmed, Chetty, Mobarak, Rahman and Singhal (2012:2), enforcement of tax compliance by making use of audits is not easy for developing economies due to the costs associated with audits, the integrity of the auditors and shortcomings in taxpayer records.

This study is important as it seeks to determine the perceived effectiveness of carrots in comparison to sticks on tax compliance of individuals in South Africa. South Africa is a developing economy, and it is imperative to conclude on whether deterrence measures, including audits by SARS, are perceived to have an effective impact on tax compliance.

Secondly, based on available data, this is the first known study that has consulted individual taxpayers directly to determine their perceptions on the effectiveness of carrots in comparison to sticks on tax compliance in South Africa.

Thirdly, the study also adds to the body of knowledge related to the effectiveness of voluntary tax compliance measures in comparison to traditional deterrence measures such as audits and penalties.

1.4 RESEARCH PROBLEM

This study seeks to primarily determine individual taxpayers' perceptions on the effectiveness of carrots in comparison to sticks on tax compliance. Secondly, the study seeks to determine the types of factors that are perceived by individual taxpayers as likely to encourage tax compliance, and also to determine the factors that are perceived by individual taxpayers as likely to discourage them from being tax compliant.

Research that seeks to determine the factors that impact taxpayer compliance over and above deterrence methods is developing across the world (Rillstone, 2015:5). In a study conducted to examine whether rewarding taxpayers can be a measure used to encourage tax compliance in New Zealand, it was concluded that using rewards can be a more effective approach to improve tax compliance in comparison to the sole reliance on deterrence methods (Rillstone, 2015:1).

In a pilot study conducted in Rwanda to examine whether sending messages to taxpayers to highlight sanctions and encourage voluntary tax compliance improves tax compliance, it was found that such messages can encourage taxpayers to be tax compliant (Mascagni *et al.*, 2016:7). Despite this developing body of knowledge, there have been a limited number of studies focusing on taxpayer behaviour in Africa. There is no known study in South Africa that has gathered the views of individual taxpayers regarding the perceived effectiveness of carrots in comparison to sticks on tax compliance.

This study gathered the views of individual taxpayers, analysed the views, and concluded on the perceived effectiveness of carrots in comparison to sticks on tax compliance.

1.5 RESEARCH QUESTION

Are carrots perceived to be more effective compared to sticks in improving tax compliance of individuals in South Africa?

1.6 RESEARCH OBJECTIVES

This study aims to address the following objectives:

- to determine individual taxpayers' perceptions regarding the effectiveness of carrots in comparison to sticks on tax compliance;
- to determine which types of factors are perceived by individual taxpayers as likely to encourage tax compliance; and
- to determine which type of factors are perceived by individual taxpayers as likely to discourage tax compliance.

1.7 RESEARCH DESIGN AND METHODOLOGY

A quantitative research design was adopted in this study to conclude on the perceived effectiveness of carrots in comparison to sticks on tax compliance of individuals. Quantitative research can be described as the a study of a representative sample of the population in order to obtain statistically significant conclusions regarding the respective population (Lowhorn, 2007).

It is imperative to note that it does not matter whether the population is significantly broad or narrow, as long as it includes all of the individuals which meet the criteria of the research being conducted (Lowhorn, 2007).

Since it is not feasible to conduct research by including the whole population due to constant turnover and a lack of the necessary resources available, it is acceptable to obtain a representative sample from the population. If the sample is selected accurately it can be concluded that the outcome of the research will be statistically identical to the population based on the results obtained from the representative sample (Lowhorn, 2007).

In order to obtain the necessary data, a questionnaire was circulated to achieve the research objectives. The data obtained from the questionnaire was analysed by using the statistical software Statistical Package for the Social Sciences (SPSS).

1.8 STRUCTURE OF THE MINI-DISSERTATION

Chapter 1: Introduction

This chapter contains the introduction and background which provide the context of the study. The chapter also highlights the rationale and the research problem of the study. The research objectives of the study are addressed. Finally, the research design and methodology applied in this study are briefly discussed.

Chapter 2: Literature review

In this chapter, a literature review related to tax compliance theories, factors influencing tax compliance of individual taxpayers, as well as previous research on the impact of the carrots versus sticks on tax compliance is provided. The chapter also provides a discussion on the types of voluntary tax compliance strategies implemented by tax authorities.

Chapter 3: Research methodology and design

This chapter outlines the chosen research methodology and provides reasons as to why the chosen research methodology is appropriate for the purposes of the study. The strengths and weaknesses of the chosen research methodology are highlighted. The manner in which the data were collected and analysed is also discussed, as well as ethical considerations observed in the study.

Chapter 4: Data analysis and findings

This chapter provides an analysis of the data collected and presents the research findings. Descriptive and inferential statistics are presented. The chapter also provides a brief discussion on the findings of the study.

Chapter 5: Conclusion

This chapter concludes the study. A summary of the findings is presented, limitations to the study are highlighted and concluding notes on the research objectives are provided. The chapter concludes by recommending areas of future research on the topic of tax compliance to enhance the body of knowledge.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Tax is defined as the “monetary charge imposed by the government on persons, entities, transactions or property to yield public revenue” (Umar, Derashid & Ibrahim, 2017:30).

A country’s government spending, in order to ensure the citizens’ well-being, is driven by the tax collection of the respective country’s tax authorities (da Silva, Guerreiro & Flores, 2019:148). It is the duty of the citizens of a country to pay their taxes. It is the primary interest of the citizens to ensure their tax compliance by complying with the tax rules (Kirchler, Hoelzl & Wahl, 2008).

There are indeed behaviour motives which may contribute to an individual being tax compliant or not. The different motives may arise due to citizens wanting to be tax compliant as they are able to determine that the cost for non-compliance is significantly high, or citizens comply as they feel it is their obligation to be tax compliant (Kirchler *et al.*, 2008).

Tax compliance

Tax compliance can be defined as a taxpayer’s willingness to adhere to the relevant tax legislation, submitting all of their relevant tax returns and declaring all of their income received (Kirchler, 2007).

There is a probability that some individuals do not like to pay their taxes and will perform a variety of actions in order to escape the obligation of paying taxes (Alm & Torgler, 2011:2). The legal actions taken by individuals in order to legally reduce their tax liability by performing activities such as income splitting, postponement of taxes and tax arbitrage across income that is subjected to different tax treatment contributes to tax avoidance (Alm & Torgler, 2011:2). In contrast tax evasion can be defined as the illegal and intentional actions exercised by individuals in order to minimise their tax liability (Alm, 2019:2). Individuals pay their taxes most of the time, although research has indicated that the chances of being audited in order to verify an individual’s tax liability is quite small and

penalties imposed in connection with tax evasion are significantly small (Alm, Sanchez & De Juan, 1995).

The puzzle to be resolved is to determine why individuals pay their taxes (Alm *et al.*, 1995). Researchers have examined various factors that could have an impact on the tax compliance of individual taxpayers.

In the sections that follow, tax compliance theories will be briefly discussed, as well as factors affecting the tax compliance behaviour of individuals.

2.2 TAX COMPLIANCE THEORIES

The classical economic paradigm

The standard economics approach in order to analyse tax compliance based on the economics of crime methodology was first applied by Allingham and Sandmo (Alm *et al.*, 1995). The methodology applied is based on the theory of Becker who adopted the classical economic paradigm which includes crime and punishment, which is labelled as the crime paradigm (da Silva, Guerreiro & Flores, 2019:148). According to the standard economics approach, the rational behaviour adopted by taxpayers is either to pay or evade their taxes by weighing the risks and financial benefits of tax evasion, which may result in significant penalties if tax evasion is identified by the tax authorities (da Silva, Guerreiro & Flores, 2019:148). As proposed by the standard economics approach, the primary tools to combat these tax evasions is to conduct audits and strict penalties (da Silva, Guerreiro & Flores, 2019:151). The methods applied by Allingham, Sandmo and Srinivasan are based on the classical economic paradigm which contributes to enforced tax compliance (da Silva, Guerreiro & Flores, 2019:151).

Service paradigm

Numerous factors affect the tax behaviour of a taxpayer. The respective taxpayer's ethical principles are one of the significant factors affecting their tax behaviour (da Silva, Guerreiro & Flores, 2019:152). The payment of taxes is regarded as a complex matter which includes the engagement with tax officials. The manner in how the taxpayer is addressed and treated by the tax officials has an influence on the tax compliance of the respective taxpayer, which

contributes to the existence of the service paradigm (Kirchler in da Silva, Guerreiro & Flores, 2019:152). The level of trust which a taxpayer has in a country's tax authority has a direct influence on the tax morale of the taxpayer. Once trust is gained by the taxpayer, the tax compliance of the taxpayer is likely to increase (Torgler in da Silva, Guerreiro & Flores, 2019:153). It results in the taxpayer being regarded as a customer of the public administration which will result in a relationship of trust and respect contributing to co-operation between the taxpayer and the tax authorities (Kirchler in da Silva, Guerreiro & Flores, 2019:153).

Fiscal exchange paradigm

The provision of public goods by a country's government is regarded as a carrot in the carrot versus stick principle (Umar, Derashid & Ibrahim, 2017:32). It is imperative for a country's government to adopt socio-economic conditions in order to improve voluntary tax compliance by taxpayers. Government should provide basic social services which include education, healthcare, public security and financial conditions (Umar, Derashid & Ibrahim, 2017:32). Based on research performed, favourable socio-economic conditions provided by a country's government contribute to satisfied citizens which indirectly results in an improved voluntary tax compliance by taxpayers (Umar, Derashid & Ibrahim, 2017:32).

In summary the crime paradigm's main objective is to apply enforced tax compliance while the service and fiscal exchange paradigms encourage voluntary tax compliance (da Silva, Guerreiro & Flores, 2019:154).

2.3 FACTORS AFFECTING THE TAX COMPLIANCE OF INDIVIDUAL TAXPAYERS

Detection and punishment

Based on the application of the economics of crime methodology, the consequence of tax evasion is enforced by applying detection and punishment. It is assumed that each individual will utilise the evasion gamble to a maximum by comparing the benefits of the tax evasion gamble against the risk of prospective detection and punishment by the relevant tax authority (Alm *et al.*, 1995).

In most countries the level of audit and penalty rates is low resulting in the conclusion that individuals will utilise the tax evasion gamble to their best advantage if they are rational by assuming that tax evaders are unlikely to be detected. Non-compliance has seldom been detected, although the interest and audit rates are low, therefore it is imperative to note that other factors should be considered to conclude on what leads to tax non-compliance (Alm *et al.*, 1995).

Audit probability

The impact of audit probabilities has been found to have a weak impact on the tax compliance of individual taxpayers (Kirchler *et al.*, 2008). Laboratory experiments performed on whether the probability of being audited has an impact on tax compliance behaviour found that the probability of an audit had a low impact on the tax compliance of the taxpayers (Spicer & Thomas, 1982).

Fines

The impact of fines imposed due to the non-compliance of a taxpayer is also an important matter which should be considered. Firstly, it is imperative to consider what type of climate should exist in order to ensure tax compliance. An antagonistic climate can be regarded as a situation where the game of cops and robbers is being applied (Kirchler *et al.*, 2008). The tax authority represents the cops and the taxpayers the robbers (Kirchler *et al.*, 2008). The antagonistic climate is also in line with the economics and crime methodology invented by Becker, which aims to punish the taxpayer if any form of non-compliance is detected. On the contrary, a synergistic climate can be regarded as where the tax authority provides a service to the client (Kirchler *et al.*, 2008). This is where the tax authority's objective is to aim for transparent procedures and for respectful and supportive treatment of the taxpayers (Kirchler *et al.*, 2008). In an antagonistic climate, fines seem to matter, while in a synergistic climate, fines imposed on a taxpayer can be regarded as a reputational damage experienced by the taxpayer due to their non-compliance (Kirchler *et al.*, 2008). The conclusion can be made that fines are linked to trust and power obtained by the tax authority (Kirchler *et al.*, 2008).

Fines which have been imposed on non-compliant taxpayers which are being regarded as too low may create the idea to taxpayers that the tax authority is incapable of controlling the tax evaders, undermining trust amongst honest taxpayers (Kirchler *et al.*, 2008). Fines which

are inappropriate or too high as a result of taxpayers' unintentional errors when declaring their income in their tax returns might undermine their perception of the tax legislation and promote tax evasion in order to regain the losses they have incurred due to these excessive and unnecessary fines (Kirchler *et al.*, 2008).

Burden of taxation

Tax compliance can be affected by the level of income an individual earns during a year of assessment. Individuals are likely to report less income to a respective tax authority if higher tax burdens are applicable based on the level of income (Alm *et al.*, 1995). There are however different conclusions obtained by comparing the theoretical result to the empirical work performed in connection with this economic factor (Alm *et al.*, 1995). It was concluded that tax compliance will increase based on a higher tax rate being applied (Yitzhaki, 1974). On the contrary it was concluded that a higher tax rate results in lower tax compliance by an individual (Clotfelter, 1983).

Government services

It has been concluded that an individual's tax compliance is dependent on government's provision of goods and services to the public (Alm *et al.*, 1995). Good governance entails the provision of public goods and services to a country's citizens. Once the government of a country fails to provide public goods, services and infrastructure to their citizens in exchange for tax payment, the taxpayers may become hesitant to pay their taxes. It has been concluded that a positive association arises between the benefits obtained from the payment of taxes and the willingness of taxpayers to be voluntarily tax compliant (Modugu, Eragbhe & Izedonmi, 2012).

Social norms

This factor represents the pattern of normal behaviour that is regarded as acceptable and approved by other individuals (Alm *et al.*, 1995). The behaviour of individuals regarding a matter is dependent on the social norm created by humankind (Alm *et al.*, 1995). If the majority of the individuals conclude that tax compliance is essential, it will have a direct impact on the behaviour of individuals in order to ensure their tax compliance. Research indicates that some countries with almost similar fiscal systems obtained different results in connection with the respective country's tax compliance experience (Alm *et al.*, 1995). The

reason for this observed difference in tax compliance behaviour was due to the social norms created by the citizens of a respective country (Alm *et al.*, 1995).

Tax knowledge

There is a positive relationship between tax knowledge and tax compliance (Kirchler *et al.*, 2008). It has been concluded that informed citizens will be more likely to accept tax increases if government expenditures are justified (Feld & Kirchgässner, 2000). Subjective tax knowledge and the participation in the use of taxes is directly linked to the trust a taxpayer has in the tax authority, while poor understanding and misunderstanding are positively correlated with distrust (Kirchler *et al.*, 2008). Therefore, the conclusion can be made that higher tax knowledge regarding the legislation contributes to higher compliance, and on the contrary, little knowledge concerning taxes leads to greater non-compliance (Kirchler *et al.*, 2008).

Due to the complex tax legislation, taxpayers normally do not understand all of the provisions that should be applied in order to determine their tax liability. Tax authorities can simplify the necessary tax legislation, and provide training and education to the taxpayers which will contribute to increased services provided to the taxpayers. Indirectly this will lead to trust that has been obtained by taxpayers in the tax authorities promoting the tax compliance of the taxpayers (Kirchler *et al.*, 2008). This can be regarded as a carrot being applied in the carrot versus stick principle in order to resolve tax non-compliance.

2.4 THE IMPACT OF THE CARROTS VERSUS STICKS ON THE TAX COMPLIANCE OF INDIVIDUAL TAXPAYERS

The first detailed theoretical study in economics to analyse the feasibility for incorporating a system of rewards as a form of incentive in order for taxpayers to improve their tax compliance was introduced by Falkinger and Walther in 1991 (Rillstone, 2015). These authors proposed a mixed method where penalties would be imposed upon tax evasion and rewards awarded if taxes were paid (Falkinger & Walther, 1990).

In another study that examined the rewards system, three types of laboratory experiments were conducted by Alm in order to examine the effects of three different types of rewards, namely entry into a lottery scheme, issuing a fixed reward and a reduction in the probability

of a future audit (Rillstone, 2015). The outcome of this experiment conducted by Alm was that for each reward issued, a subject audit was conducted in order to conclude whether the participants were tax compliant or not. It was found that the participants were fully compliant in comparison to a control group to which no reward was available. Furthermore, each reward had a significant impact on the tax compliance of the taxpayer. It was concluded that the lottery system had a significant positive impact on tax compliance (Rillstone, 2015).

An experiment was conducted in Costa Rica where all participants were taxpayers. A monetary reward was distributed to each compliant taxpayer dependant on the outcome of an audit. The outcome of the subjective audit performed concluded that the respective taxpayers were fully tax compliant. It can be concluded that the principle of reciprocity increases tax compliance where the government applies a positive rewards system (Torgler, 2003). Similar results were observed in experiments conducted by Bazart and Pickhardt in Germany and France. In the experiments, audits were conducted, and the outcome indicated that taxpayers were fully compliant due to their reward enabling them to enter into a lottery scheme for being tax compliant. The entrance into the lottery scheme provided the participants with the chance to win an individual lottery. It is clear that the results indicate that the introduction of the reward scheme had a positive influence on the tax compliance behaviour of the taxpayers in the study (Bazart & Pickhardt, 2009).

In a study by Kastlunger, Muehlbacher, Kirchler and Mittone (2011), an experiment was conducted with 86 participants. The researchers found that distributing monetary rewards promoted an all or nothing behaviour amongst the taxpayers. The participants who formed part of the reward conditions either evaded all of their income or were fully honest about their tax affairs. In connection with the control group, the amount of tax evaded differed more frequently (Kastlunger *et al.*, 2011). Therefore, based on the results of this study it was concluded that rewarding an honest taxpayer does not generally result in an increase in tax revenue being collected (Kastlunger *et al.*, 2011).

A study conducted by Andreoni, Harbaugh and Vesterlund (2003) examined the effect of carrots and sticks and their co-operation. The outcome of the experiment firstly concluded that rewards alone are not very effective. Secondly, it was concluded that sticks contribute to co-operation amongst participants. The combination of carrots and sticks had a significant impact amongst participants. Therefore, a conclusion based on this study is that carrots and

sticks are effective when used as a complement to each other. It is clear that only one of the principles – either the carrot or the stick - can be applied at a time, but the availability of both principles contributes to a greater degree of co-operation amongst participants (Andreoni *et al.*, 2003).

2.5 TYPES OF VOLUNTARY TAX COMPLIANCE STRATEGIES IMPLEMENTED BY TAX AUTHORITIES

The main risks that tax authorities are facing, which also affect the tax compliance of taxpayers, is the risk of taxpayers not registering for tax when obligated to do so, the risk of not filing a relevant tax return and the risk of not accurately reporting one's tax affairs (OECD, 2009).

The strategy adopted in the past to improve tax compliance amongst a country's taxpayers was based on strengthening the tax enforcement strategies of the tax authorities. Based on research conducted by the World Bank Group, it was demonstrated that in order to improve the tax compliance amongst taxpayers of a country, the trustworthiness of the tax system should be improved to strengthen the tax compliance of the taxpayers (Dom, Custers, Davenport & Prichard, 2022). Evidence was obtained from various countries and regions indicating that a taxpayer's willingness to pay their taxes will increase when their trust in the government is strong (Dom *et al.*, 2022). It is imperative to shift the paradigm from taxing more to taxing better (Dom *et al.*, 2022).

Examples are provided below of the types of schemes or strategies that have been implemented by various tax authorities in an effort to encourage voluntary tax compliance based on research conducted by the World Bank Group. These strategies or schemes, in the context of our research, can be referred to as carrots designed to encourage voluntary tax compliance.

E-services

Higher income countries adopted the approach where the individuals have the resources to file their tax returns electronically and also pay their tax obligations through an electronic platform (Dom *et al.*, 2022). Many tax authorities are experimenting in order to make use of advanced technologies to improve the taxpayers' experience when interacting with the tax

system. This entails the contact between the tax authorities and taxpayers being significantly digitalised. The use of artificial intelligence (AI) chatbots is enabling taxpayers to reduce their interaction time with tax officials. Currently this feature is also being adopted by low and middle income countries (OECD, 2019).

It is imperative to note that moving towards an e-system will give rise to a significant learning curve that will take place. This may lead to these services not being accessible to taxpayers due to the lack of knowledge on how to operate the e-system (Yilmaz & Coolidge, 2013). Taxpayers should have a basic level of IT literacy as well as internet access in order for the rollout of these e-systems to be successful (Dom *et al.*, 2022). The perceptions of taxpayers play a significant role in connection with the adoption of new technologies to improve tax compliance (Fjeldstad, Kagoma, Mdee, Sjursen & Somville, 2020).

In **India**, the e-Sahyog Project provides an online mechanism to the taxpayers of India in order to resolve mistakes made in their income tax returns if they were selected for an audit. This online mechanism enables them to resolve their mistakes without visiting a tax official (Dom *et al.*, 2022). **Brazil** has also embraced the use of e-services by introducing the My Income Tax App which enables the taxpayers of Brazil to file and submit their personal tax income tax returns via their mobile devices (Dom *et al.*, 2022). In **South Africa**, SARS has also introduced the SARS MobiApp which is a mobile app from which taxpayers can complete and submit their income tax returns (SARS, Not dated).

Better digital services

Enforcement was regarded as the bedrock in order to apply reform strategies to ensure tax compliance amongst taxpayers. However, tax authorities have committed significant resources in order to facilitate tax compliance. The committed significant resources contribute to a mind shift by tax authorities where the taxpayers are regarded as the customers while the tax authorities are the service providers. Compliance reforms entail initiatives to ease filing of tax returns, refunds and payment procedures as well as informing taxpayers about their tax liabilities and the tax system (Dom *et al.*, 2022).

Tax authorities have implemented schemes or strategies that incorporate technology in order to better their digital services and make compliance easier for the taxpayer, which in

turn may positively influence voluntary tax compliance. One of these strategies is the introduction of e-filing and e-payments.

Various countries adopted an automation approach such as e-filing and e-payment platforms which improved revenue performance across various types of taxes (IMF (International Monetary Fund), 2020). In 2014, **Kenya** introduced their iTax system. The system enabled the Kenya Revenue Authority to integrate and automate their domestic tax functions and in addition provide new electronic functions to the taxpayers to settle their tax liabilities. The result of implementing the iTax system contributed to reduced revenue collection costs and enabled real-time revenue and audit monitoring (Ndung'u, 2019).

In **South Africa**, the e-filing system was introduced which contributed to improved automation. The automation of tax matters resulted in reduced temporal expenses regarding tax assessments and customs evaluations (IMF (International Monetary Fund), 2020).

Guatemala initiated BancaSAT in 2001 with support from the World Bank. BancaSAT entails an e-filing and payment system. Due to the adoption of the system, 84 per cent of the tax revenues were accounted for within a year. Additionally, the system also reduced the revenue authority's administrative burden and overall service delivery (Jacobs, Crawford, Murdoch, Hodges, Lethbridge, Jimenez, Osinski, Hinsz, Pulse & Kamenov, 2013).

Expanding Mobile Money Technologies

Governments have begun investigating the potential benefit it will provide to implement mobile money systems. These money systems entail government-to-business, government-to-person, business-to-government and person-to-government transactions (Scharwat, 2014). Examples of countries that have successfully implemented these technologies include **Tanzania**, where decreases have been recorded regarding tax evasion within a year after the revenue authority of Tanzania implemented mobile money payments in connection with property taxes and personal income taxes (Scharwat, 2014).

The revenue authority of **Mauritius** recorded a twelve per cent increase in personal income tax returns filed once the Mauritius Revenue Authority collaborated with the State Bank of Mauritius to implement mobile money payments regarding income taxes (Scharwat, 2014).

It is imperative to note that the correlation between mobile money payments and tax compliance is limited, but there is still a reason to be optimistic regarding the operation. The benefit which mobile technology holds for revenue authorities is to ease the collection of taxes in low and middle-income countries (Dom *et al.*, 2022).

Digital Technologies and IT Solutions to Engender Trust and increase perceived transparency

In order for the digital technologies and IT solutions implemented by a country's revenue authority to function properly, the taxpayer should be confident and trust the tools used by the revenue authority in connection with tax administration. This entails the user-friendliness of the taxpayer platforms, the taxpayers' perception of the accuracy of their information provided electronically, as well as their opinion on how robust the taxpayers think the privacy and security measurements are regarding these platforms (Dom *et al.*, 2022).

Taxpayers' trust is normally improved once the compliance burden is reduced amongst taxpayers, the tax system is managed competently and the tax burden between taxpayers and the revenue authority is distributed equally (Dom *et al.*, 2022).

The success of digital communication is highly subjective to the quality and usefulness of the information being communicated, as well as the depth of transparency. The result of digital communication used well contributes to tax compliance amongst taxpayers and enhances trustworthiness in the tax system (Dom *et al.*, 2022).

In **Rwanda** taxpayers were informed through SMS messages about public services. This led to a substantial increase in taxes declared, and it was regarded as a cost-effective manner to communicate with taxpayers (Mascagni, Nell & Monkam, 2017). This strategy is an example of using nudges that increase perceived transparency as a tool to encourage tax compliance behaviour. In **Nigeria** perceived transparency has been increased through the use of civil platforms known as TrackaNG and BudgIT that have been developed as a result of the disclosure of digital data. These platforms entail the analysis of information regarding public finances and expenditures (Dom *et al.*, 2022).

Taxpayer education

There has been a lot of attention paid to well-designed educational programmes over the past decade in order to increase voluntary tax compliance. One of the challenges faced by taxpayers is understanding the tax system. The approach followed by the tax authorities to mitigate these challenges faced by the taxpayers is to roll out tax educational programmes to enable the taxpayers to understand the relevant tax system (Dom *et al.*, 2022).

It has been concluded based on available evidence that tax morale amongst taxpayers can be improved by adopting an approach to implement taxpayer outreach and educational programmes. In order to ensure the success of these programmes, it is imperative to note that these programmes should be customised based on the different classes of taxpayers according to a country's tax base (Fjeldstad & Heggstad, 2012).

Time constraints and limited human resources often make it difficult for tax authorities to implement and conduct tax educational programmes. In response, high-level political support can help to resolve the issue (Dom *et al.*, 2022).

Nigeria, Bangladesh and Kenya have adopted a variety of taxpayer outreach and educational programmes. A tax-based soap opera called "Binding Duty" was developed by Nigeria. National Income Tax Day is celebrated by Bangladesh and the tax authority of Kenya is collaborating with schools to incorporate tax education into the curriculum of the learners (OECD & The International and Ibero American Foundation for Administration and Public Policies (FIIAPP), 2015).

In order to incorporate high-level political support, the President of **Rwanda** distributes annual taxpayer awards. The Minister of Finance of **Turkey** speaks directly to taxpayers via YouTube (OECD & The International and Ibero American Foundation for Administration and Public Policies (FIIAPP), 2015).

Fostering Taxpayer Engagement and nudging

The low and middle-income countries' revenue authorities have invested in technology in order to improve the taxpayers' education as well as the communication process between these taxpayers and the revenue authorities (Dom *et al.*, 2022).

In **Singapore**, the revenue authority of the country implemented short messaging service (SMS) notifications providing the taxpayers with services and nudges to remind them about their tax obligations. This also enables the taxpayers to obtain important information regarding their tax system (OECD, 2016).

Costa Rica, Latvia and Kosovo made use of email reminders as a nudge to encourage tax compliance. This strategy improved the tax compliance by 20 per cent within five weeks amongst 50 000 non-filers in Costa Rica. In Latvia, non-compliant taxpayers received email messages regarding their non-compliance, which led to an increase in the tax declaration submission rates. The personal income tax rate revenue increased with two to four per cent in Kosovo due to emails and SMS reminders being sent to taxpayers informing them about their tax obligations (World Bank, 2021).

It is imperative to note that electronic reminders on their own are not likely to transform tax administration, but it is relatively low-cost and good value for money (Peixoto, Fanomezantsoa, Sjoberg & Mellon, 2019).

2.6 CONCLUSION

Based on the literature reviewed, it can be concluded that tax compliance is impacted by both carrots and sticks applied by tax authorities. Sticks such as penalties upon detection of non-compliance are implemented concurrently with carrots, aimed at making compliance easy for the taxpayer, such as electronic filing of tax returns and payment of tax liabilities online. In this study, we examine which measures individual taxpayers perceive to be more effective between sticks or carrots in increasing tax compliance.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The purpose of this study is to determine the perceived effectiveness of carrots in comparison to sticks on tax compliance of individuals. In addition, the study also seeks to determine which types of factors are perceived by individual taxpayers as likely to encourage tax compliance and which factors are perceived as likely to lead to non-compliance.

In this chapter, a comprehensive discussion of the research methodology and design implemented is provided. A discussion regarding the data analysis process and research ethics adhered to is also supplied.

3.2 RESEARCH DESIGN

In this research a quantitative research methodology was applied to determine the perceived effectiveness of carrots (measures that seek to encourage voluntary tax compliance) in comparison to sticks (deterrence measures) on tax compliance, and to interrogate factors that are likely to encourage taxpayers to comply with tax laws in South Africa and those that are least likely to encourage tax compliance.

According to Aliaga and Gunderson (2000:1), quantitative research is “explaining phenomena by collecting numerical data that are analysed using mathematically based methods (in particular statistics).” The main purpose of quantitative research is to obtain data which can be used to identify patterns, determine the averages amongst sample sizes, and lastly to generalise the results amongst the population (Scribbr, 2021b).

The advantages associated with quantitative research can be summarised as follows:

- Replication of the study being performed is possible;
- The direct comparison of results is possible;
- Hypothesis testing can be done (Scribbr, 2021b).

On the contrary the disadvantages of quantitative research are:

- Complex concepts may be presented inadequately due to the application of precise and restrictive definitions in the context of quantitative research. It can be concluded that quantitative research may be superficial in certain circumstances;
- Quantitative research may be regarded as narrow focused due to observations being ignored as a result of the application of predetermined variables and procedures;
- Structural bias may occur due to inappropriate sample methods being applied, as well as missing data being a concern when data are being collected and analysed (Scribbr, 2021b).

In this research, numeric data was gathered using a questionnaire. It was deemed appropriate to apply quantitative research as the research objectives can be best addressed by calculating statistics obtained from data gathered. Based on these statistics, it will be possible to determine whether carrots are perceived as more effective in encouraging tax compliance compared to sticks. Furthermore, statistics make it possible to determine which types of factors are perceived by the participants as likely to encourage tax compliance and which types of factors are perceived as least likely to encourage tax compliance.

3.3 RESEARCH METHOD

To ascertain the perceived effectiveness of carrots in comparison to sticks on tax compliance in South Africa, the researcher conducted an online survey as a numerical data collection tool and analysed the collected data using SPSS. To conduct the survey, the researcher made use of a questionnaire where a set of questions was sent to a sample of taxpayers using SurveyMonkey, a cloud-based survey tool. The link to SurveyMonkey was distributed to participants through the researcher's social media platforms. The researcher anticipated challenges with the response rate, hence the decision to distribute the link on multiple platforms was concluded to be the best option.

This approach was selected due to its low cost, convenience, and its ability to provide primary data. According to the Formplus blog (2015), primary data is "a type of data that is collected by researchers directly from main sources through interviews, surveys, experiments, etc." Primary data is considered to be the best type of data for drawing conclusions in research (Formplus blog, 2015).

Weiersberg (2008:223) describes survey research as “a technique that is well designed for assessing the prevalence and distribution of attitudes, as well as factual material about respondents.” Surveys have strengths, weaknesses and certain limitations. According to Sincero (n.d.), amongst the strengths of survey research is their relatively lower costs, convenience of data collection, possible larger representation of the population, while one of the weaknesses is the possibility of different interpretations of the same question by different participants, as participants do not have an opportunity to seek further explanation on the questions. One of the limitations of surveys is their consideration of isolated opinions, while opinions mainly arise from group interactions (Weiersberg, 2008:224).

In this research study, the researcher capitalised on the strengths of surveys, as the main objective of the researcher was to collect as many responses as possible in the most convenient way without spending significant amounts of money. In order to address the concern that participants may not have a good grasp of the complex taxation terminology and hence interpret survey questions differently, the survey questions were drafted in simple English understandable to an average person in South Africa.

The participants were asked to complete closed ended questions on a 5-point Likert scale. According to Manaher (n.d.), “closed ended questions offer conclusive results since the data they help to accumulate can be easily quantified or sorted.” A closed ended question is “any question that provides response options, in the form of multiple choice, checkboxes, dropdowns or ranking questions” (Manaher, n.d.). For the purposes of this study, a quantitative research methodology was adopted which required quantifying and sorting the collected data. Statistical analysis was also practical once the data collected from closed ended questions had been quantified.

Close ended questions also encourage participation and openness from participants. According to QuestionPro (n.d.), some of the advantages of closed ended questions include the reduced time it takes to read and respond to the questions, and how respondents are likely to answer even on sensitive questions as they do not have to elaborate. Due to the limited time frame available to conduct this study, closed ended questions were deemed appropriate for the purpose of addressing the research questions.

This research study was regarded to be more effective with individual responses than group or focus group responses, as the researcher was interested in the individual perception of the effectiveness of carrots in comparison to sticks on tax compliance. Guest, Namey, Taylor, Eley and McKenna (2017) concluded in their study that isolated interviews can be as effective or more effective compared to group interactions.

3.4 SAMPLING

In this study the target population was individual taxpayers within a South African context. The individuals included taxpayers who are registered as taxpayers with SARS.

In selecting participants to whom the questionnaire was distributed, the researcher made use of probability sampling. Acharya, Prakash, Saxena and Nigam (2013:330) allude to the fact that probability sampling permits the researcher to extrapolate results in the selected sample to the overall population. According to McCombes (2022), in probability sampling, “every member of the population has a chance of being selected.” There are four types of probability sampling methods, namely simple random samples, systematic samples, stratified samples and cluster samples (Scribbr, 2022c). In the case of random sampling, it is important to note that every individual in the population has an equal and fair chance of being selected in order to form part of a research study (Scribbr, 2022c). In this study, random sampling was used to select a sample of participants from the population in order to draw more reasonable and accurate conclusions.

The aim of this research is to examine the perceived effectiveness of carrots in comparison to sticks on the tax compliance of individuals in South Africa (population), using the results per the analysis of the sample responses. In order for the researcher to conduct the research in a timely manner, it was concluded that the use of a probability sampling technique was appropriate. Probability sampling was also considered the most cost-effective manner to conduct the research study. The researcher made use of an online questionnaire as a research instrument to obtain the necessary primary data. The participants that formed part of the probability sample method, where a random sampling technique was applied, consisted of individual taxpayers who are on the social media and contact list of the researcher. The participants were selected by the researcher as mentioned above on a random basis, thereafter the online questionnaire link was distributed to each participant via

WhatsApp in order to complete the questions as set out in the online questionnaire, to enable the researcher to obtain the necessary primary data.

3.5 DATA COLLECTION PROCESS

An online questionnaire was used as the research data collection instrument. Refer to Annexure A for the questionnaire. This online questionnaire was distributed to the various participants via WhatsApp by providing them with the link to the online survey tool from which the questionnaire could be completed. The participants were able to complete the online questionnaire on any device such as a laptop or their smartphone, based on their personal preference.

The researcher confirmed prior to the distribution of the link to the online questionnaire that the participants would only be able to complete the questionnaire once, in order to ensure the validity and reliability of the primary data collected. This was confirmed by the researcher completing a mock online questionnaire prior to the distribution of the final online questionnaire, to ensure that each participant only had one attempt to answer the online questionnaire. The researcher also ensured that the data obtained from each participant was treated as confidential and that each participant was anonymous throughout the research study. This was ensured by obtaining each participant's consent prior to the completion of the online questionnaire. The letter of consent indicated that each participant would remain anonymous. The demographic questions of the online questionnaire were structured in such a manner that the participants could not be identified, to ensure that they remained anonymous.

The link through the online questionnaire was distributed by the researcher to the participants during the period 24 April 2022 to 07 June 2022. The participants could complete the online questionnaire once at their convenience during this period.

3.6 DATA ANALYSIS

The collected data was analysed using the SPSS programme. According to the University of South Australia (n.d.) SPSS is "a versatile and responsive programme designed to undertake a range of statistical procedures." Results from SurveyMonkey, which was used to conduct the survey, can be exported to the SPSS programme.

According to Cornnor (2019), using the SPSS programme has the following advantages:

- It is best for diagrammatic presentations;
- It provides flexibility in data analysis;
- It is good for data management including data storage and retrieval;
- It can be used for statistical analysis.

The online questionnaire was designed on SurveyMonkey. The benefit of this platform is that the responses collected from each participant are collected and saved in the cloud. SurveyMonkey has the functionality where all of the primary data collected can be exported to an Excel spreadsheet in order to import this spreadsheet into SPSS to obtain the necessary descriptive and inferential statistics.

Descriptive statistics can be best described as the summary and organisation of the characteristics of a data set (Scribbr, 2022a). These characteristics of a data set can be best explained as the average of one variable (for example age) or the relation between two variables (Scribbr, 2022a).

Inferential statistics can be described as the statistics obtained in order to make predictions and conclusions about the researcher's data set (Scribbr, 2021a).

Inferential statistics have two main purposes, namely:

- Enabling the researcher to make estimates about the population; and
- Allowing the researcher to test hypotheses and to draw conclusions based on the results obtained (Scribbr, 2021a).

In order to ensure that the primary data was sound, the data were cleaned by checking the completeness of the responses, which were exported to an Excel spreadsheet format from SurveyMonkey, and removing incomplete responses. Once all of the valid responses were obtained, the process was followed by importing these valid responses into SPSS. The researcher designed the online questionnaire in such a manner as to ensure that all of the questions to be completed were compulsory to contribute to the completeness of the questionnaire.

3.7 RELIABILITY AND VALIDITY

The primary data in this study was obtained from the distribution of an online questionnaire, therefore it was imperative to ensure that the data is reliable and valid.

Reliability and validity are concepts that are used to determine the quality of research. A measurement is regarded as reliable when the same result is obtained on a consistent basis when the same method is applied and subjected to the same circumstances in order to measure something (Scribbr, 2022b). Therefore, reliability can be defined as the consistency of a method in measuring something. In the context of research, high validity contributes to the fact that the results obtained from the research can be attributed to the population (Scribbr, 2022b).

Reliability can be ensured by adhering to the following principles:

- The research method should be applied consistently. Each participant should be subjected to the same measurement conditions (Scribbr, 2022b).
- The conditions of the research study should be standardised. Each measurement should be subjected to consistent circumstances in order to prevent any form of variation in the results obtained based on the research method applied (Scribbr, 2022b).

The reliability of the research conducted was ensured by applying the following principles:

- The researcher ensured that the same process was followed with each participant, in order to create consistent circumstances during the data collection process.
- The researcher ensured that the same process was followed under consistent circumstances by issuing the online questionnaire via a link on WhatsApp to all of the participants which had to be completed within a time period at a convenient time.

Validity can be best described as the accuracy of a method in measuring something. In order to ensure the validity of the research study, the following matters should be considered:

- The appropriate method to measure the primary data should be chosen. This entails that the researcher should ensure that the research method and design are of the highest quality in order to meet the research objectives (Scribbr, 2022b).
- The researcher should apply the correct sampling methods. To enable the researcher to generalise the results to the population it is imperative to ensure that the researcher

defines the sample and enough participants form part of the research study (Scribbr, 2022b).

The researcher ensured the validity of the research conducted by applying the following principles:

- The researcher conducted an online questionnaire specifically designed to meet the research objectives in order to ensure the validity of the primary data obtained.
- The researcher applied probability sampling where a simple random sampling technique was considered appropriate, in order to obtain enough participants for the purposes of this study.

3.8 RESEARCH ETHICS

The researcher ensured that the research study was conducted taking into account the highest level of research ethics throughout the study.

In order to ensure that the highest level of ethical principles were applied throughout the research study, the following matters were addressed:

- An anonymous online questionnaire was conducted as no personal information appeared on the questionnaire regarding the participants.
- The responses provided by the participants were treated as highly confidential and none of the participants could be identified based on their responses.
- The online questionnaire was voluntary, and each participant had the right to withdraw from the study at any given time without any negative consequences.
- It was clearly stated to the participants that the research study was only for academic purposes and the results of the study are available to the participants upon request. Refer to the letter of informed consent in Annexure B.
- The primary data obtained from the research study will be kept safe by adhering to the rules of the University of Pretoria. All of the requirements of the Protection of Personal Information Act were complied with in order to protect the personal information of each participant.
- The necessary ethical clearance was obtained from the Ethics Committee of the Faculty of Economic and Management Sciences from the University of Pretoria.

3.9 CONCLUSION

The main purpose of this chapter was to discuss the research design and method that was applicable to this study. Thereafter a discussion followed regarding the sampling, data collection process, data analysis, reliability and validity of the research data. This chapter concluded with a discussion on the research ethics maintained in this study.

CHAPTER 4

DATA ANALYSIS

4.1 INTRODUCTION

The main purpose of this research study is to examine the perception of the effectiveness of carrots in comparison to sticks on the tax compliance of individuals. This research study consisted of a sample size of 55 participants who are individual taxpayers in South Africa.

The research objectives of this study are the following:

- to determine individual taxpayers' perceptions of the effectiveness of carrots in comparison to sticks on tax compliance;
- to determine which types of factors are perceived by individual taxpayers as likely to encourage tax compliance; and
- to determine which type of factors are perceived by individual taxpayers as likely to discourage tax compliance.

In this chapter descriptive and inferential statistics will be presented using the data analysis software – SPSS. This will be followed by a discussion of the results, and lastly a conclusion to the chapter.

4.2 RESULTS

4.2.1 Descriptive statistics

Demographic information

Table 2 provides a detailed summary of the demographic variables of the participants in this research study. There was a total of 55 participants who formed part of the study. The age of the participants ranged from 20 years to above 60 years. There was a good balance between male and female participants, with females comprising 54.5 per cent of the participants. The majority of the participants obtained an undergraduate and postgraduate degree.

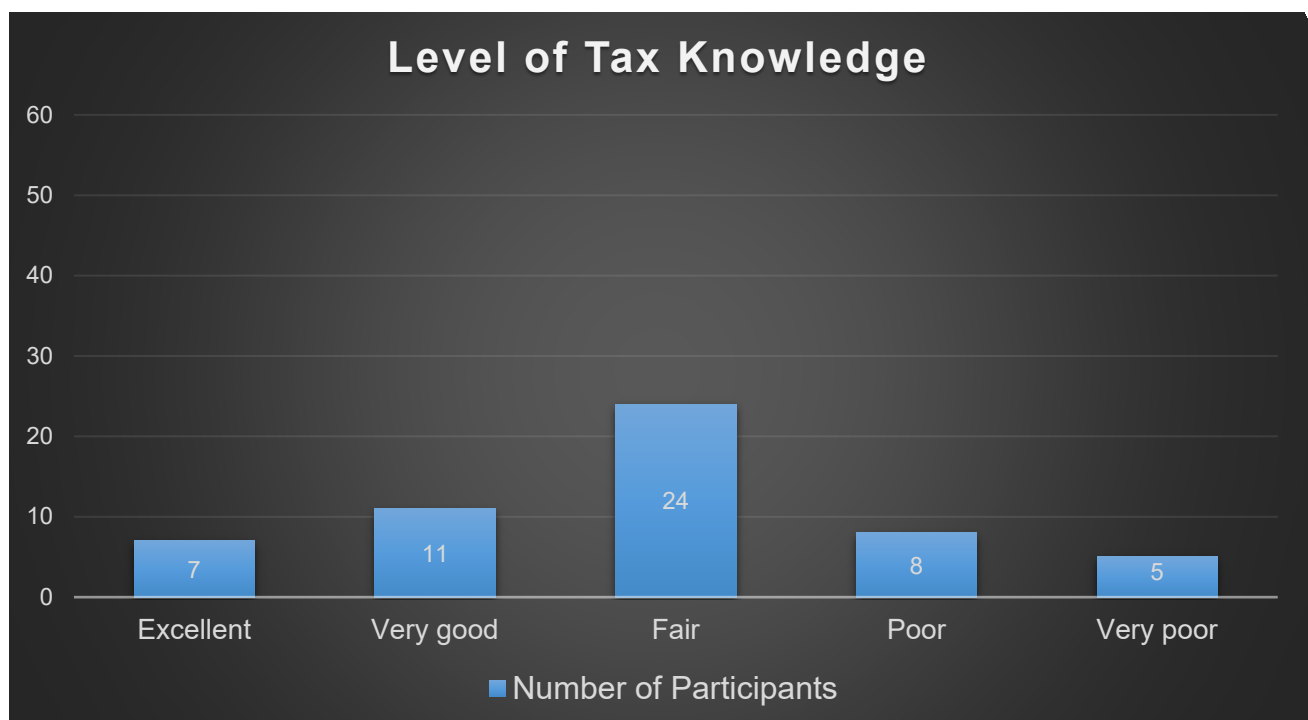
Table 2: Demographic information

Demographic variables		Percent
<i>Age</i>		
20 – 29	29	52.7
30 – 39	15	27.3
40 – 49	3	5.5
50 – 59	7	12.7
> 60	1	1.8
<i>Gender</i>		
Female	30	54.5
Male	25	45.5
Prefer not to say	0	0
<i>Level of education</i>		
Bachelor’s degree	13	23.6
Diploma	8	14.5
Honors degree	19	34.5
Master’s degree	7	12.7
Matriculated	8	14.5
Total	55	100

The tax knowledge level

Figure 1 indicates the participants’ level of self-assessed tax knowledge. The majority, 76 per cent of the participants, rated their tax knowledge as fair, very good or excellent. This is perhaps due to the reason that the participants were highly educated as shown in Table 2.

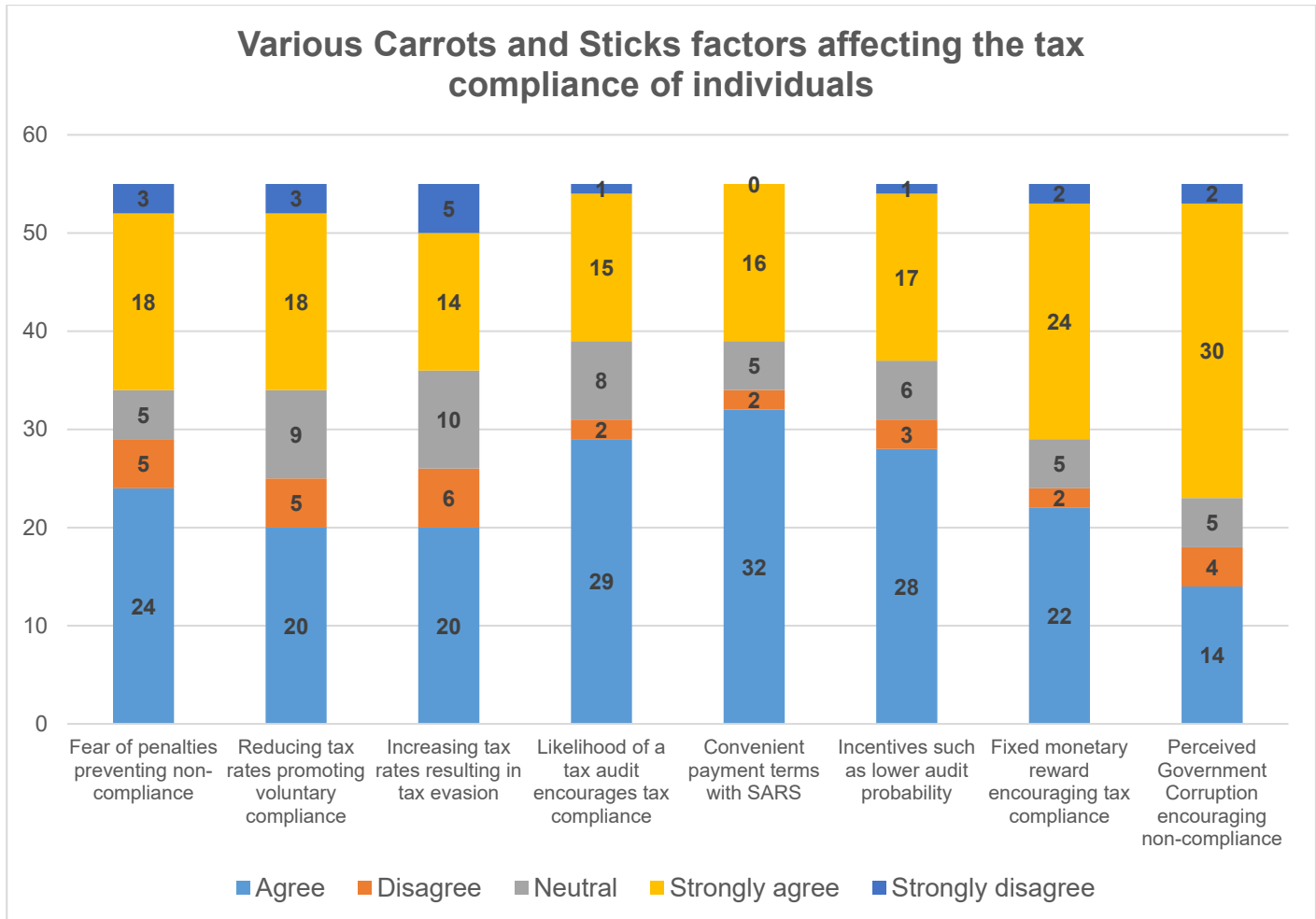
Figure 1: Self-assessed tax knowledge of the participants (N=55)



Various carrots and sticks factors affecting tax compliance of individuals

As shown in Figure 2, a mix between carrots and sticks factors were presented to participants to determine which factors were likely to influence their tax compliance.

Figure 2: Various carrots and sticks factors affecting the tax compliance of individuals (N=55)



The specific questions that formed part of the questionnaire required from the participants to indicate to what extent they strongly agreed, agreed, were neutral, disagreed or strongly disagreed with eight statements related to various carrots and sticks and tax compliance.

Based on the results, the fear of penalties prevents non-compliance of the individuals. The majority of the participants, 76 per cent, indicated that this stick prevents them from being tax non-compliant.

Most of the participants, 69 per cent, indicated that reducing tax rates will encourage tax compliance. On the contrary, 61, 8 per cent of participants indicated that increasing tax rates would encourage them to adopt tax avoidance strategies.

Based on the results observed, the likelihood of a tax audit encouraging tax compliance is almost similar to that of the fear of penalties. The majority of the participants, 80 per cent, indicated that the likelihood of a tax audit encourages them to be tax compliant. On the contrary, 81. 8 per cent of participants indicated that a lower audit probability due to them being tax compliant for a fixed number of years would encourage them to be tax compliant.

Promising results were obtained regarding the carrot – convenient payment terms with SARS to settle outstanding tax debt. Most of the participants, 87.3 per cent, indicated that this carrot would encourage them to be tax compliant.

Most of the participants, 83. 6 per cent, indicated that a fixed monetary reward for being tax compliant would encourage tax compliance. On the contrary, the perceived government corruption does affect the willingness of individuals to comply with the tax laws. Eighty per cent of the participants indicated that their willingness to comply with tax laws was indeed affected by this factor.

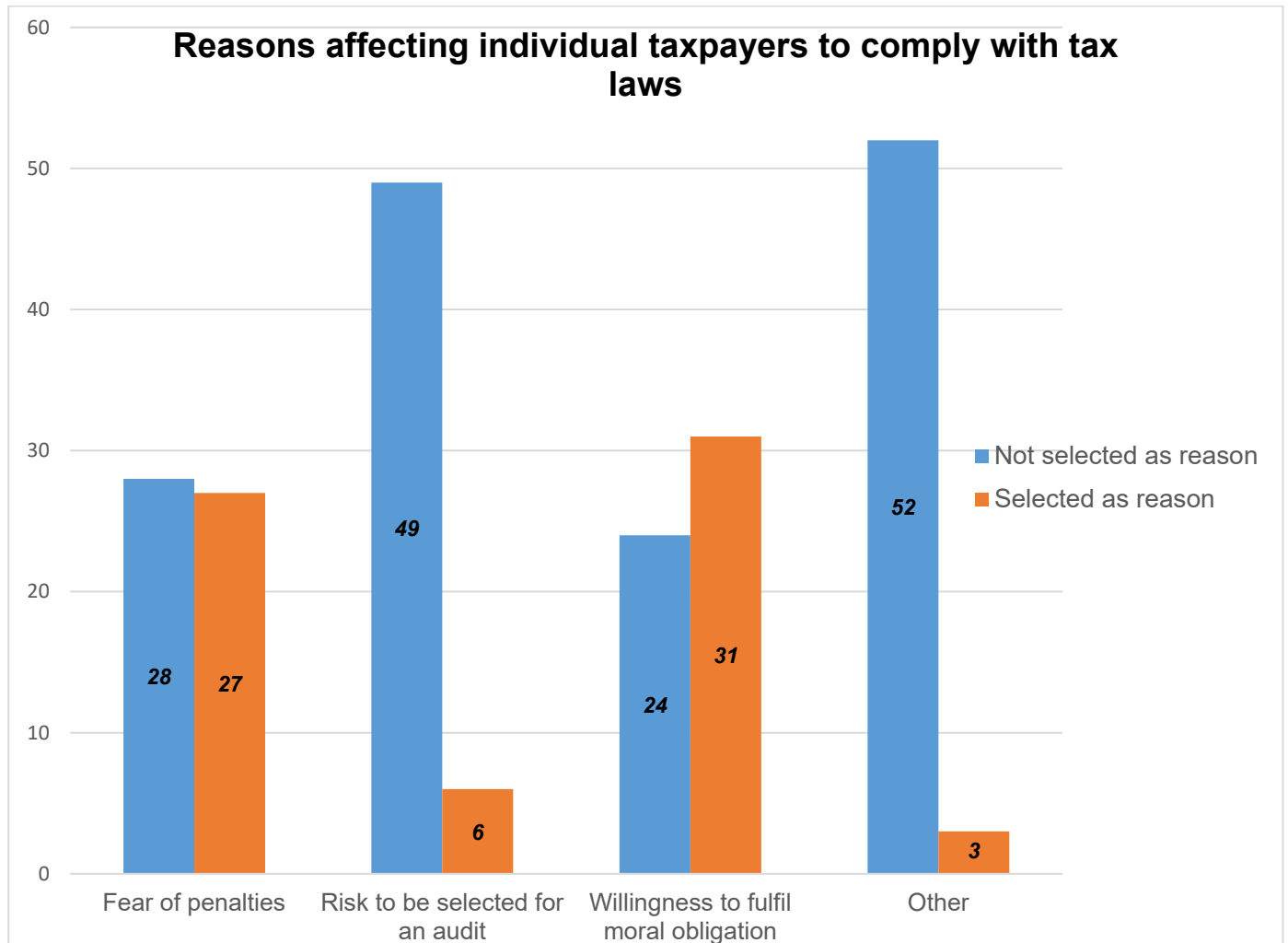
Based on these results in connection with the perceived effectiveness of sticks versus carrots, it can be concluded that the enforcement strategies applied by SARS which are the fear of penalties as well as the likelihood of tax matters being audited, do encourage the tax compliance of the individuals. However, positive results were obtained where carrots were applicable. It is evident that carrots also play a role in encouraging tax compliance and SARS would benefit from following a more carrot-based approach to motivate individual taxpayers to comply with their tax obligations.

Reasons to comply with tax laws

As shown in Figure 3, the main reasons that the participants comply with tax laws are due to the fear of penalties (N=27) and their willingness to fulfil their moral obligation (N=31) by complying with the tax laws. Risk of being selected for an audit and other – which includes being tax compliant to obtain finance from financial institutions and being tax compliant due

to one's accountant managing the tax affairs of the participant - were the least selected reasons.

Figure 3: Reasons affecting individual taxpayers to comply with tax laws



Closed ended questions to determine the tax compliance of individuals

Participants were also asked other questions related to other factors that could potentially influence their tax compliance. The questions related to ease of e-filing, social norms and level of satisfaction with services provided by SARS. Table 3 shows these results.

Table 3: Close ended questions regarding the tax compliance of the participants

Does the ease of e-filing contributes to taxpayers filing their tax returns on time?		
Options available:	Number of participants per option:	Percent:
Agree	28	50,91
Disagree	1	1,82
Neutral	6	10,91
Strongly agree	20	36,36

Likelihood being tax compliant if most of your friends and family members are tax compliant?		
Options available:	Number of participants per option:	Percent:
Likely	23	41,82
Somewhat likely	7	12,73
Unlikely	2	3,64
Very likely	21	38,18
Very unlikely	2	3,64

Level of satisfaction of participants based on the services applied by SARS to facilitate filing and payment of tax returns		
Options available:	Number of participants per option:	Percent:
Not at all	5	9,1
Partly	31	56,4
Satisfied	19	34,5

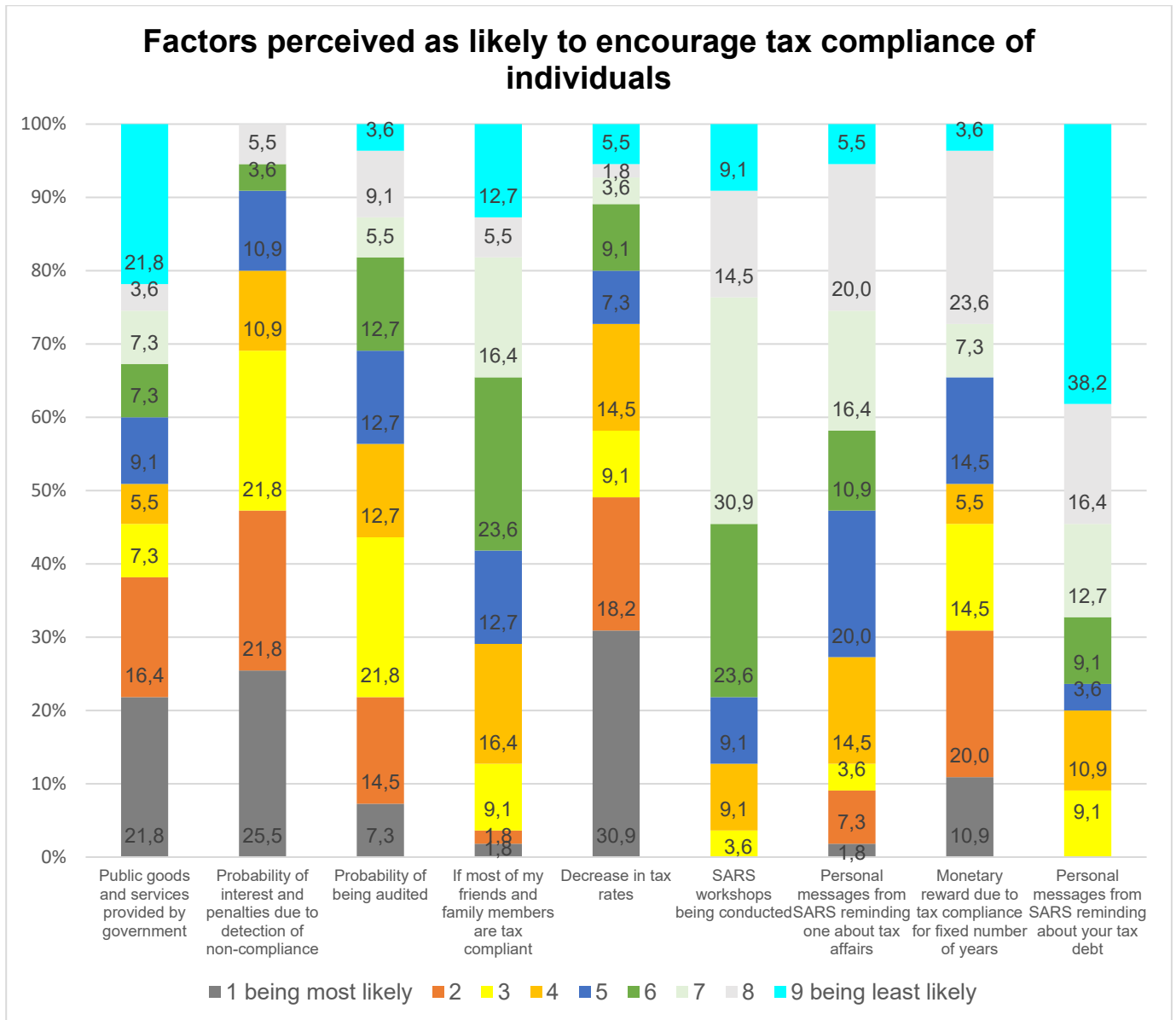
Based on the results, 87,3 per cent of the participants indicated that the ease of e-filing contributes to them filing their tax returns on time, thus being tax compliant. On the other hand, 56,4 per cent of the participants were partly satisfied with the services provided by SARS to facilitate the filing and payment of tax returns. Eighty per cent of the participants indicated that social norms such as friends and family being tax compliant does affect their likelihood of being tax compliant.

The conclusion can be made based on the results that the level of satisfaction with services provided by SARS and making tax compliance easy for taxpayers might indirectly link to a high level of willingness amongst individual taxpayers to comply.

Factors perceived as likely to encourage tax compliance of individuals

Participants were requested to rank 9 factors that are likely to encourage them to be tax compliant, with Number 1 being the most likely factor and Number 9 being the least likely factor. Figure 4 shows the results.

Figure 4: Factors perceived as likely to encourage tax compliance of individuals

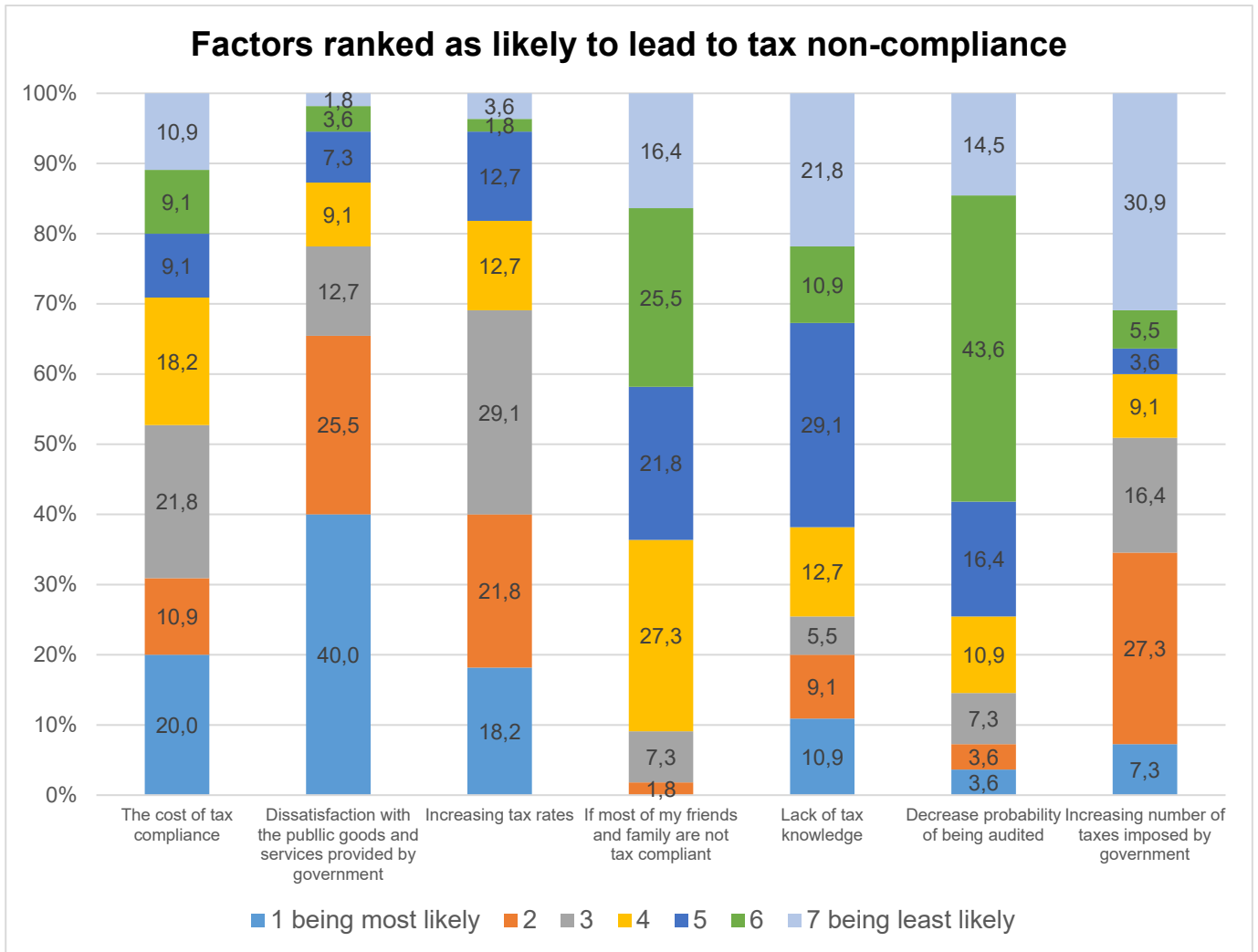


The majority of the participants ranked the factor – the carrot, decrease in tax rates - as most likely to encourage them to be tax compliant. Probability of interest and penalties due to detection of non-compliance – was listed as the second most likely factor to encourage tax compliance. This can be regarded as an enforcement strategy provided by SARS to ensure tax compliance. A personal message from SARS as a reminder about an outstanding tax debt was ranked least likely to encourage tax compliance. Based on these results it appears that a combination of sticks and carrots is perceived as likely to encourage tax compliance amongst individual taxpayers.

Factors perceived as likely to lead to tax non-compliance by individuals

Participants were requested to rank 7 factors that are likely to lead to non-compliance. Number 1 being the most likely factor and Number 7 being the least likely factor. Figure 5 shows the results.

Figure 5: Factors ranked as likely to lead to non-compliance



Most of the participants indicated that the main factor discouraging tax compliance amongst them is the dissatisfaction with the public goods and services provided by government. This is indicative that the participants are of the opinion that their tax paid over to SARS is not used in an appropriate manner by the government in order to provide public goods and services. Increases in tax rates was ranked as the second most likely factor to lead to tax non-compliance. The probability of being audited was ranked least likely to discourage tax compliance. Based on these results it appears that participants were discouraged to be tax

compliant if they were of the opinion that they do not benefit from the advantage of paying their taxes.

4.2.2 Inferential statistics

Inferential statistics were calculated to allow the researcher to make inferences about the data collected. Cross tabulations were conducted together with statistical tests to determine the association between variables. The statistical significance of those associations and the strength of the association were also determined. Cross tabulations display the joint distribution of two or more variables. They are usually presented in a matrix, called a contingency table. Whereas a frequency distribution table describes the distribution of one variable, a contingency table describes the distribution of two or more variables simultaneously. It merges two or more frequency distribution tables into one. Each cell contains a single cross tabulation (Pohl, Not dated).

The significance level of a test is defined as the probability (p-value) of making a decision to reject the null hypothesis when the null hypothesis is actually true (a decision known as a Type 1 error). If the p-value is less than the significance level, then the null hypothesis is rejected. In this research study, both 5 per cent and 10 per cent as levels of statistical significance will be considered (Pohl, Not dated).

Association between variables and statistical significance

The Pearson Chi-square test of independence is used when both variables are nominal. It is used to calculate the probability that a relationship found in a sample between two variables is due to chance (random sampling error). It does this by measuring the difference between the actual frequencies in each cell of a table and the frequencies one would expect to find if there were no relationship between the variables in the population from which the sample has been drawn. The larger these differences are, the less likely they occurred by chance (Pohl, Not dated).

In addition, the Pearson Chi-square test for independence is considered to be too liberal if more than 20 per cent of cells had an expected frequency of less than 5. Thus, in this case, the Fisher-exact test (for 2 by 2 tables) or the Fisher Freeman Halton (FFH) test are used.

The FFH test is an extension of Fisher’s test for an $r^1 \times c^2$ contingency table. These tests are “exact” because no large sample approximations are used and provide an exact p-value that is valid regardless of the sample size (Pohl, Not dated).

Strength of association between variables

Cramer’s V is a measure of the strength of the association between two nominal variables (Pohl, Not dated).

The thresholds for interpreting the values are shown in Table 4.

Table 4: Effect sizes for Cramer's V

<i>df</i> ³	<i>Small</i>	<i>medium</i>	<i>large</i>
1	.10	.30	.50
2	.07	.21	.35
3	.06	.17	.29
4	.05	.15	.25
5	.04	.13	.22

In this study, inferential statistics were conducted to test the association between the following variables:

- Gender and fear of penalties affecting tax compliance;
- Gender and willingness to fulfil moral obligation;
- Gender and the risk of being selected for an audit;
- Age groups and the risk of being selected for an audit;
- Age groups and willingness to fulfil moral obligation;
- Age groups and fear of penalties affecting tax compliance;
- Educational level and factors selected as affecting tax compliance.

The results of each of the inferential statistics conducted are now discussed.

¹ The number of rows is represented by “r”
² The number of columns is represented by “c”
³ Degrees of freedom

The association between gender and the fear of penalties affecting tax compliance

Null hypothesis and hypothesis tested are:

H₀: There is no association between gender and the fear of penalties indicated as a reason for complying with tax laws.

H₁: There is an association between gender and the fear of penalties indicated as a reason for complying with tax laws.

Table 5: The association between gender and the fear of penalties affecting tax compliance

Cross tabulation variables	Pearson Chi-square test	Cramer V	Fisher or FFH test (if applicable)	Significance (p-value)	Result
Gender and the fear of penalties as reason to comply with tax laws	0.022	0.02	NA	0.883	Do not reject the null hypothesis at the 5% level of significance

The results indicated that, as the significance value (p-value) was above 0.05, there is no statistically significant association between gender and the fear of penalties being indicated by participants as a reason for complying with tax laws. The results show that 48 per cent of males selected fear of penalties as a reason for why they comply with tax laws and a similar pattern was observed for females. Fifty per cent of the females also selected fear of penalties as a reason for complying with tax laws. The strength of the association (0.02) as measured by Cramer V, is indicative of a very weak, negligible effect as the degrees of freedom is 1.

The association between gender and willingness to fulfil moral obligation by complying with tax laws

Null hypothesis and hypothesis tested are:

H₀: There is no association between gender and willingness to fulfil moral obligation by complying with tax laws.

H₁: There is an association between gender and willingness to fulfil moral obligation by complying with tax laws.

Table 6: The association between gender and willingness to fulfil moral obligation by complying with tax laws

Cross tabulation variables	Pearson Chi-square test	Cramer V	Fisher or FFH test (if applicable)	Significance (p-value)	Result
Gender and the willingness to fulfil moral obligations by complying with tax laws	1.304	0.154	NA	0.254	Do not reject the null hypothesis at the 5% level of significance

The results indicated that, as the significance value (p-value) was above 0.05, there is no statistically significant association between gender and willingness to fulfil moral obligations being a reason to comply with tax laws. A similar pattern was observed for both gender groups as, of the respondents that selected this reason, 48 per cent were male and 63.3 per cent were females. The strength of the association (0.154) as measured by Cramer V, is indicative of a very small effect as the degrees of freedom is 1.

The association between gender and the risk of being selected for an audit affecting tax compliance

Null hypothesis and hypothesis tested are:

H₀: There is no association between gender and the risk of being selected for an audit affecting the tax compliance of an individual.

H₁: There is an association between gender and the risk of being selected for an audit affecting the tax compliance of an individual.

Table 7: The association between gender and the risk of being selected for an audit affecting tax compliance

Cross tabulation variables	Pearson Chi-square test	Cramer V	Fisher or FFH test (if applicable)	Significance (p-value)	Result
Gender and the risk to be selected for an audit affecting individuals to comply with tax laws	1.222	0.149	0.394	0.269	Do not reject the null hypothesis at the 5% level of significance

The results indicated that, as the significance value (p-value) was above 0.05, there is no statistically significant association between gender and the risk to be selected for an audit as reason to comply with tax laws. A similar pattern was observed for both gender groups as, of the respondents that selected this reason, 16 per cent were male, whilst 6,7 per cent of females selected this reason. The strength of the association (0.149) as measured by Cramer V, is indicative of a very small effect as the degrees of freedom is 1.

The association between age and the risk of being selected for an audit affecting tax compliance

Table 8 shows the age groups of the participants in this study.

Table 8: Age groups that formed part of the research study

Age group:	Age group range:	Number of participants (N=55):
1	20 – 29 years	29
2	30 – 39 years	15
5	40 and above years	11

Null hypothesis and hypothesis tested are:

H₀: There is no association between age and the risk of being selected for an audit affecting the tax compliance of individuals.

H₁: There is an association between age and the risk of being selected for an audit affecting the tax compliance of individuals.

Table 9: The association between age and the risk of being selected for an audit affecting tax compliance

Cross tabulation variables	Pearson Chi-square test	Cramer V	Fisher or FFH test (if applicable)	Significance (p-value)	Result
Age groups and the risk to be selected for an audit affecting individuals to comply with tax laws	0.138	0.050	0.375	0.934	Do not reject the null hypothesis at the 5% level of significance

The results indicated that, as the significance value (p-value) was above 0.05, no statistically significant association between age and the risk to be selected for an audit as reason to comply with tax laws exists. A similar pattern was observed for the three age groups as 10,3 per cent of the participants in the 20-29 years age group selected this as reason, whilst 13,3 per cent of participants in the 30-39 years age group selected this as reason, and 9, 1 per cent of participants in the 40 and above age group selected this as reason. The strength of the association (0.050) as measured by Cramer V, is indicative of a very small negligible effect as the degrees of freedom is 1.

The association between age and willingness to fulfil moral obligations by complying with tax laws

Null hypothesis and hypothesis tested are:

H₀: There is no association between age and willingness to fulfil moral obligation by complying with tax laws.

H₁: There is an association between age and willingness to fulfil moral obligation by complying with tax laws.

Table 10: The association between age and willingness to fulfil moral obligation by complying with tax laws

Cross tabulation variables	Pearson Chi-square test	Cramer V		Fisher or FFH test (if applicable)	Significance (p-value)	Result
Age groups and the willingness to fulfil your moral obligations to comply with tax laws	0.972	0.133		1.036	0.615	Do not reject the null hypothesis at the 5% level of significance

The results indicated that, as the significance value (p-value) was above 0.05, no statistically significant association between age and the willingness to fulfil moral obligations as a reason to comply with tax laws exists. A similar pattern was observed for the three age groups as, of the respondents that selected this reason, of the participants in the 20-29 years age group 62,1 percent selected this as reason, whilst 46,7 per cent of the 30-19 years age group selected this as reason, and 54,5 per cent of participants in the 40 and above age group percent selected this as reason. The strength of the association (0.133) as measured by Cramer V, is indicative of a small effect as the degrees of freedom is 1.

The association between age and the fear of penalties affecting tax compliance

Null hypothesis and hypothesis tested are:

H₀: There is no association between age and the risk of penalties as reason for complying with tax laws.

H₁: There is an association between age and the risk of penalties as reason for complying with tax laws.

Table 11: The association between age and the risk of penalties as reason for complying with tax laws

Cross tabulation variables	Pearson Chi-square test	Cramer V	Fisher or FFH test (if applicable)	Significance (p-value)	Result
Age groups and the risk of penalties and interest as reason to comply with tax laws	0.901	0.128	0.922	0.637	Do not reject the null hypothesis at the 5% level of significance

The results indicated that, as the significance value (p-value) was above 0.05, no statistically significant association between age and the risk of penalties as reason to comply with tax laws exists. A similar pattern was observed for the three age groups as, of the respondents that selected this reason, of the 20-29 years age group 51,7 per cent selected this as reason, whereas 53,3 per cent of the 30-39 years age group selected this as reason compared to 36,4 per cent of the 40 and above age group. The strength of the association (0.128) as measured by Cramer V, is indicative of a small effect as the degrees of freedom is 1.

The association between education and factors selected as affecting tax compliance amongst individual taxpayers

Table 12 shows the educational qualification levels of the participants in this study.

Table 12: Educational groups that formed part of the research study

Educational group:	Level of qualification applicable:	Number of participants (N=55):
1	Matric and Diploma	16
2	Bachelor's degree	13
5	Honours and Master's degree	26

Table 13 shows the factors that participants could select as factors that positively affect their tax compliance.

Table 13: Factors applicable in this research study

Description of factor:
Probability of interest and penalties if found to be tax non-compliant.
Public goods and services provided by government.
Probability of being audited.
If most of my friends and family members are tax compliant.
Decrease in tax rates.
SARS workshops (such as how to easily submit your tax return).
Personal messages from SARS to remind you of tax return filing deadlines.
Monetary rewards if tax compliant for a number of years.
Personal messages from SARS to remind you of an outstanding tax debt.
Cost of tax compliance (for example paying someone to assist you with filing your tax return).
Not being happy with the public goods and services currently being provided by government.
Increase in tax rates.
If most of my friends and family members are not tax compliant.
Lack of tax knowledge.
Decreased probability of being audited.
Increasing number of taxes imposed by the government (tax burden).

Null hypothesis and hypothesis tested are:

H₀: There is no association between educational level and factors selected as positively affecting tax compliance.

H₁: There is an association between educational level and factors selected as positively affecting tax compliance.

Table 14: The association between educational level and factors selected as affecting tax compliance amongst individual taxpayers

Non- parametric test variable	Significance (p-value)	Result
Probability of interest and penalties if found to be tax non-compliant.	0.057	Do not reject the null hypothesis at the 5% level of significance
Public goods and services provided by government.	0.020	Hypothesis 1 is supported by the inferential statistics obtained
Probability of being audited.	0.279	Do not reject the null hypothesis at the 5% level of significance
If most of my friends and family members are tax compliant.	0.921	Do not reject the null hypothesis at the 5% level of significance
Decrease in tax rates.	0.733	Do not reject the null hypothesis at the 5% level of significance
SARS workshops (such as how to easily submit your tax return).	0.290	Do not reject the null hypothesis at the 5% level of significance
Personal messages from SARS to remind you of tax return filing deadlines.	0.893	Do not reject the null hypothesis at the 5% level of significance
Monetary rewards if tax compliant for a number of years.	0.315	Do not reject the null hypothesis at the 5% level of significance
Personal messages from SARS to remind you of an outstanding tax debt.	0.781	Do not reject the null hypothesis at the 5% level of significance
Cost of tax compliance (for example paying someone to assist you with filing your tax return).	0.626	Do not reject the null hypothesis at the 5% level of significance
Not being happy with the public goods and services currently being provided by government.	0.229	Do not reject the null hypothesis at the 5% level of significance
Increase in tax rates.	0.406	Do not reject the null hypothesis at the 5% level of significance
If most of my friends and family members are not tax compliant.	0.284	Do not reject the null hypothesis at the 5% level of significance
Lack of tax knowledge.	0.312	Do not reject the null hypothesis at the 5% level of significance
Decreased probability of being audited.	0.064	Do not reject the null hypothesis at the 5% level of significance

Non- parametric test variable	Significance (p-value)	Result
Increasing number of taxes imposed by the government (tax burden).	0.857	Do not reject the null hypothesis at the 5% level of significance

The results indicated that as the significance value (p-value) of all of the factors except “public goods and services provided by government” was above 0.05, no statistically significant association existed between educational level and the type of factors selected as positively affecting tax compliance. However, there is an association between education level and public goods and services provided by government being selected as a reason affecting tax compliance.

4.3 DISCUSSION

The findings of this research study will be discussed below in order to conclude on how the research objectives as indicated in Chapter 1 were met. The findings of this research study will also be linked to current literature as discussed in Chapter 2.

The research objectives as indicated in Chapter 1 were as follows:

- to determine individual taxpayers’ perceptions on the effectiveness of carrots in comparison to sticks on tax compliance;
- to determine which types of factors are perceived by individual taxpayers as likely to encourage tax compliance; and
- to determine which type of factors are perceived by individual taxpayers as likely to discourage tax compliance.

The respective research objectives will be discussed below separately.

- **To determine individual taxpayers’ perception on the effectiveness of carrots in comparison to sticks on tax compliance**

Based on this research study performed there were mixed results obtained regarding the perceived effectiveness of carrots in comparison to sticks. The majority of the participants indicated that the fear of penalties and interest upon detection of non-compliance, as well as the likelihood of being audited, encourages tax compliance amongst individual taxpayers in South Africa. These two factors – being classified as sticks - can be regarded as

enforcement strategies applied by SARS to ensure tax compliance amongst individual taxpayers.

However, based on this research study, there is evidence that the participants were in favour of carrots being regarded as a strategy to promote voluntary tax compliance. Most of the participants indicated that a decreasing tax rate, decreased probability of being audited due to being tax compliant for a fixed number of years, monetary rewards for being tax compliant for a fixed number of years and the willingness to fulfil moral obligations do affect the voluntary tax compliance of individual taxpayers in South Africa.

The conclusion can be made that the two main enforcement strategies applied by SARS, penalties and interest, as well as the likelihood of being audited do ensure tax compliance amongst taxpayers. However, promising results were obtained indicating that if SARS adopted a more carrot-based approach, which is available as an option to the individual taxpayers in South Africa, it will promote voluntary tax compliance amongst these individuals that form part of the tax base.

The research obtained from the research study corresponds with the findings of Andreoni *et al.* (2003), who concluded that the application of both carrots and sticks simultaneously contributes to a greater degree of co-operation amongst participants.

- **To determine which types of factors are perceived by individual taxpayers as likely to encourage tax compliance**

The majority of the participants indicated that based on the questions provided in the questionnaire, a decrease in tax rates as well as monetary rewards, if one is tax compliant for a fixed number of years, are high up in the ranking list as factors that contribute to encouraging tax compliance. In addition to these two factors, convenient payment terms approved by SARS to settle tax debt was also considered to positively affect the voluntary tax compliance amongst participants.

The less favourite factors such as personal messages from SARS reminding one about tax matters, as well as outstanding tax debt and workshops conducted by SARS to submit one's tax returns were listed at the bottom of the ranking list.

The conclusion can be made that once an individual taxpayer can quantify the "carrot" it will have a greater impact to encourage tax compliance amongst taxpayers.

The findings observed from this research study correspond with the findings of Alm (1992), Bazart and Pickhardt (2009), as well as Torgler (2003), which indicated that a reward, whether it represents a monetary reward or entry into a lottery scheme, has an impact on the tax compliance of a taxpayer.

- **To determine which type of factors are perceived by individual taxpayers as likely to discourage tax compliance**

Based on the findings, most of the participants indicated factors such as not being satisfied with the provision of public goods and services by the government, an increase in tax rates, perceived government corruption and the cost of tax compliance as the top factors discouraging tax compliance.

These findings show the importance of the fiscal exchange relationship between taxpayers and government and also that monetary factors, such as the cost of compliance, are likely to discourage tax compliance amongst individual taxpayers.

The research obtained from this research study corresponds with the findings of Alm *et al.* (1995), which indicated that a high tax burden, which can be linked to increasing tax rates, will result in less income being reported, thus indirectly resulting in non-compliance amongst taxpayers. These findings also substantiate the findings of Clotfelter (1983), which concluded that higher tax rates lead to lower tax compliance amongst taxpayers. Lastly, the findings of Modugu *et al.* (2012) were also corroborated, which indicate that there is indeed a positive association between the benefit of the payment of taxes and the willingness to be tax compliant. Once a taxpayer does not benefit from paying their taxes in order to obtain the benefit from the provision of public goods and services, it may lead to discouraging tax compliance as the taxpayer does not receive the benefit for the tax payments made.

4.4 CONCLUSION

In this chapter, the results of the descriptive and inferential statistics were presented. The findings of this study show that a mix of carrots and sticks measures to encourage tax compliance should be applied, in order to improve tax compliance amongst individual taxpayers. This chapter also presented results on factors that are perceived by individual taxpayers as encouraging or discouraging tax compliance. It was found that factors which can be quantified or physically observed are most likely to affect tax compliance in a good or adverse way.

CHAPTER 5

CONCLUSION

5.1 INTRODUCTION

Chapter 4 included a comprehensive discussion of the descriptive and inferential statistics pertaining to this research study, in order to conclude whether the research objectives have been met. This chapter entails a summary of the findings in connection with the research objectives. In addition, the contributions of this research study will be discussed and the limitations of the research study, as well as recommendations for future research.

5.2 SUMMARY OF FINDINGS AND CONCLUSIONS

The main purpose of this research study was to determine, by adopting a quantitative research design, the perceived effectiveness of carrots in comparison to sticks on the tax compliance of individuals. The summary of the findings will be discussed below based on the research objectives provided in Chapter 1.

- *To determine individual taxpayers' perceptions of the effectiveness of carrots in comparison to sticks on tax compliance*

SARS does adopt an enforcement strategy by applying interest and penalties upon the detection of non-compliance, as well as the likelihood of being audited in order to force individual taxpayers to be tax compliant. However, it is imperative to note that promising results were obtained from the research study, which indicated that the individual taxpayer base is in favour of a more carrot-based approach to be applied by SARS, in order to promote voluntary tax compliance, rather than forcing the tax base to comply. As presented in Chapter 4, participants in this study ranked the factors regarded as enforcement strategies applied by SARS which entail the fear of penalties and interest, as well as the likelihood of being audited as matters encouraging tax compliance amongst individuals. It was evident that positive results were obtained where carrots were applicable. SARS should consider the role which carrots play in encouraging tax compliance, as there are indeed benefits that could arise due to the application of a more carrot-based approach.

- *To determine which types of factors are perceived by individual taxpayers as likely to encourage tax compliance*

The majority of the participants in this study indicated that factors that are likely to be quantified such as a decrease in tax rates, monetary rewards distributed to individual taxpayers for being tax compliant for a fixed number of years, and convenient payment terms with SARS are likely to encourage tax compliance. However, participants also listed deterrence factors such as probability of interest and penalties due to detection of non-compliance as a factor that is likely to encourage tax compliance. Personal messages from SARS as a reminder about an outstanding tax debt was ranked least likely to encourage tax compliance. Based on these results it appears that a combination of sticks and carrots encourage tax compliance amongst individual taxpayers.

- *To determine which type of factors are perceived by individual taxpayers as likely to discourage tax compliance*

Based on the research study performed, the fiscal exchange relationship between taxpayers and government appears to be important. The results of this study indicate that participants are discouraged to be tax compliant if they do not benefit from the provision of public goods and services which are financed by their tax payments made to SARS.

In addition to the above, factors such as increasing tax rates and the cost of tax compliance were factors ranked high up on the list discouraging tax compliance amongst the participants.

5.3 THE CONTRIBUTIONS OF THE RESEARCH STUDY

The results of this research study may be provided to SARS to indicate the importance of considering the amendment of their tax compliance strategy. It may enable SARS to consider a carrot-based approach in order to establish a sustainable relationship between the individual taxpayer and SARS. It may also disclose to SARS the importance of the right balance between carrots and sticks to be applied regarding their tax compliance strategy, in order to improve the tax compliance amongst individual taxpayers. This study also adds to the body of knowledge by providing insights into taxpayers' perceptions on the effectiveness of sticks (deterrence measures) compared to carrots (measures that aim to encourage voluntary tax compliance).

5.4 LIMITATIONS OF THE RESEARCH STUDY

- The sample in the research study does not represent the whole population. The number of participants per age group can be increased in future research to ensure a better representation of the population.
- The majority of the participants in this study were based in certain provinces of South Africa, namely Mpumalanga and KwaZulu-Natal. For future research purposes, participants should be recruited widely across the country to reflect the general population of individual taxpayers in South Africa.
- Most of the participants were highly educated which indicated that their tax knowledge was at least fair. Future research may focus on recruiting participants with varying levels of tax knowledge.
- The literature review performed was not exhaustive and may include a greater scope for future research purposes.
- The research study was conducted over a relatively short period of time in order to obtain the necessary primary data.

5.5 FUTURE RESEARCH

The following are recommendations of future research in relation to the current topic:

- The study can be performed on a larger sample.
- The perception of the effectiveness of carrots in comparison to sticks to tax compliance for different tax types.
- The study can be performed with a diverse group of participants to take into account different tax knowledge levels.

5.6 CONCLUDING REMARKS

SARS applies enforcement strategies such as penalties and interest, as well as the likelihood of being audited to ensure tax compliance amongst individual taxpayers. Although there are some carrot-based approaches being applied by SARS, it was evident that SARS may perhaps consider additional carrot-based approaches to obtain the right balance. Factors linked to monetary benefits were ranked highly as likely to encourage tax compliance.

It is of the utmost importance to consider the fiscal exchange relationship between taxpayers and the government. Participants were likely to be discouraged to be tax compliant when they were of the view that they were not benefiting from paying their taxes.

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APPENDIX A:

Declaration of plagiarism



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

DEPARTMENT OF TAXATION

Declaration Regarding Plagiarism

The Department of Taxation emphasises integrity and ethical behaviour with regard to the preparation of all written assignments. Although the lecturer will provide you with information regarding reference techniques, as well as ways to avoid plagiarism (see the "Guidelines on Referencing" document), you also have a responsibility to fulfil in this regard. Should you at any time feel unsure about the requirements, you must consult the lecturer concerned before submitting an assignment.

You are guilty of plagiarism when you extract information from a book, article, web page or any other information source without acknowledging the source and pretend that it is your own work. This does not only apply to cases where you quote the source directly, but also when you present someone else's work in a somewhat amended (paraphrased) format or when you use someone else's arguments or ideas without the necessary acknowledgement. You are also guilty of plagiarism if you copy and paste information directly from an electronic source (e.g., a web site, e-mail message, electronic journal article or CD-ROM) without paraphrasing it or placing it in quotation marks, even if you acknowledge the source.

You are not allowed to submit another student's previous work as your own. You are furthermore not allowed to let anyone copy or use your work with the intention of presenting it as his/her own.

Students who are guilty of plagiarism will forfeit all credits for the work concerned. In addition, the matter will be referred to the Committee for Discipline (Students) for a ruling. Plagiarism is considered a serious violation of the University's regulations and may lead to your suspension from the University. The University's policy regarding plagiarism is available on the Internet at <http://www.library.up.ac.za/plagiarism/index.htm>.

For the period that you are a student at the Department of Taxation, the following declaration must accompany all written work that is submitted for evaluation. No written work will be accepted unless the declaration has been completed and is included in the particular assignment.

	Student
I (full names & surname):	Nicolaas Johannes Robbertse
Student number:	21523437

Declare the following:

1. I understand what plagiarism entails and am aware of the University's policy in this regard.
2. I declare that this assignment is my own, original work. Where someone else's work was used (whether from a printed source, the Internet or any other source) due acknowledgement was given and reference was made according to departmental requirements.
3. I did not copy and paste any information directly from an electronic source (e.g., a web page, electronic journal article or CD ROM) into this document.
4. I did not make use of another student's previous work and submitted it as my own.
5. I did not allow and will not allow anyone to copy my work with the intention of presenting it as his/her own work.

Nicolaas Johannes Robbertse

Signature

ANNEXURE A:

Questionnaire

Section A: Demographic Details

Instructions:

Participant, please tick the most appropriate answer based on your opinion in connection with Section A.

Acronyms:

SMME – Small and Medium Sized Enterprises

Question 1:

Gender: Male Female Other Prefer not to say

Question 2:

Please provide your age in the field below:

Question 3:

Please select your appropriate level of education:

Not matriculated	<input type="checkbox"/>
Matriculated	<input type="checkbox"/>
Diploma	<input type="checkbox"/>
Undergraduate Degree	<input type="checkbox"/>
Honor's Degree	<input type="checkbox"/>
Master's Degree	<input type="checkbox"/>
PhD Degree	<input type="checkbox"/>

Question 4:

Taxpayer status: Individual SMME representative/employee/owner

(if you are a representative/employee/owner of a SMME please select SMME representative/employee/owner if you are in charge or assist with the tax compliance of the business)

Question 5:

If you have selected SMME representative/employee/owner in question 4, please select the appropriate sector in which the business operates in.

Manufacturing	<input type="checkbox"/>
Retail	<input type="checkbox"/>
Construction	<input type="checkbox"/>
Agricultural	<input type="checkbox"/>
Professional services	<input type="checkbox"/>
Transportation	<input type="checkbox"/>
Other:	<input type="checkbox"/>

Question 6:

If you have selected SMME representative/employee/owner in question 4, please select the appropriate occupation/role you are fulfilling in the business.

Owner	
Manager	
Accountant	
Other:	

Section B: Tax Compliance Determinants

Instructions:

Participant, please tick the most appropriate answer based on your opinion in connection with Section B.

Part A: Individual taxpayers

Question 1:

How would you rate your knowledge of the tax laws related to you as a taxpayer?

- 1. Excellent
- 2. Very Good
- 3. Fair
- 4. Poor
- 5. Very Poor

Question 2:

If you have selected poor or very poor in Question 1, to what extent do you agree that your lack of knowledge on tax matters prevents you from being fully tax compliant?

- 1. Strongly Agree
- 2. Agree
- 3. Neutral
- 4. Disagree
- 5. Strongly Disagree

Question 3:

On a scale from 1 to 5, 1 being Strongly Agree and 5 being Strongly Disagree, indicate how much you agree to the following statements:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The fear of penalties prevents you from being non-compliant with tax laws					
Reducing tax rates will increase your compliance level					
Increasing tax rates will encourage you to adopt tax avoidance strategies					
The likelihood of a Tax Audit on your tax return encourages you to					

be tax compliant in terms of accuracy					
Convenient payment arrangements with SARS would encourage taxpayers like yourself to pay their tax debts					
Incentives such as lower probabilities of being audited as a result of being tax compliant for a fixed number of years would encourage taxpayers as yourself to be tax compliant					
Rewards such as a fixed monetary reward for being tax compliant would motivate taxpayers like yourself to be voluntary tax compliant					
Perceived high level of government corruption in South Africa affects your willingness to comply with tax laws					

Question 4:

Please select a reason(s) why you think taxpayers like yourself would comply with tax laws:

1. Fear of penalties
2. Risk that you may be selected for an audit
3. Willingness to fulfil your moral obligation
4. Other (specify).....

Question 5:

How would you rate your likelihood to be tax compliant if most of your friends and family members are tax compliant?

1. Very likely
2. Likely
3. Somewhat likely
4. Unlikely
5. Very unlikely

Question 6:

To what extent do you agree that the ease of e-filing tax returns contributes to taxpayers filing their returns on time?

1. Strongly Agree 2. Agree 3. Neutral 4. Disagree 5. Strongly Disagree

Question 7:

How satisfied are you with the services provided by SARS to facilitate the filing of returns and payment of taxes by you as the taxpayer?

1. Not at all
2. Partly
3. Satisfied

Questions 8:

Please rank the factors below that are likely to lead to you being tax **compliant** 1 being (most likely) and 9 being (least likely)

Probability of interest and penalties if found to be tax non-compliant	
Public goods and services provided by government	
Probability of being audited	
If most of my friends and family members are tax compliant	
Decrease in tax rates	
SARS workshops (such as how to easily submit your tax return)	
Personal messages from SARS to remind you of tax return filing deadlines	
Monetary rewards if tax compliant for a number of years	
Personal messages from SARS to remind you of an outstanding tax debt	

Question 9:

Please rank the factors below that are likely to lead to you being tax **non-compliant** 1 being (most likely) and 7 being (least likely)

Cost of tax compliance (for example paying someone to assist you with filing your tax return)	
Not being happy with the public goods and services currently being provided by government	
Increase in tax rates	
If most of my friends and family members are not tax compliant	
Lack of tax knowledge	
Decreased probability of being audited	
Increasing number of taxes imposed by the government (tax burden)	

Source: (Poonam, 2019)

ANNEXURE B: Letter of Consent



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Economic and
Management Sciences

Combined Letter of Introduction and Informed Consent

Dept. of Taxation

Title of the study

The perception of the effectiveness of carrots in comparison to sticks on tax compliance.

Research conducted by:

Mr NJ Robbertse & Mr C Njomeni

Dear Participant

You are invited to participate in an academic research study conducted by Mr NJ Robbertse and Mr C Njomeni, Master students in the Faculty of Economic and Management Sciences at the University of Pretoria.

The purpose of the study is to analyse individual taxpayers' and Small and Medium Sized Business Enterprises' perceptions of the effectiveness of carrots in comparison to sticks on tax compliance behaviour in South Africa.

Please note the following:

- This is an anonymous study survey as your name will not appear on the questionnaire. The answers you give will be treated as strictly confidential as you cannot be identified in person based on the answers you give.
- Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- Please answer the questions in the questionnaire as completely and honestly as possible. This should not take more than 20 minutes of your time.
- The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request.

Please feel free to contact our supervisor, Doctor Nompumelelo Monageng at mpumi.monagena@up.ac.za, if you have any questions or comments regarding the study.

Please indicate below by selecting "I consent to take part in this study" by confirming that:

- You have read and understand the information provided above.
- You give your consent to participate in the study on a voluntary basis and you are 18 years or older.