Evaluation of the Readiness of New Car Dealerships in Polokwane for Possible Carbon Tax

By

Mapitso V Molepo

Mini-Dissertation

Submitted in partial fulfilment of the requirements for the degree

of

MASTERS

In

BUSINESS ADMINISTRATION

In the

Faculty of Management & Law

Turfloop Graduate School of Leadership

University of Limpopo

South Africa

Supervisor: Professor L. Beyers

2019

DECLARATION BY STUDENT

I hereby certify that the work done in this mini-dessertation was done by me in my personal capacity. The work contained in this dissertation does not infringe on anyone's copyrights. To the best of my knowledge this work has not been submitted to any other institution of higher learning. It is hereby submitted as part of my fulfilling the qualification requirements at TGSL for an MBA degree. The work that is quoted or paraphrased in this work has been fully acknowledged and indicated according to the referencing practices. I certify that this is the original copy of my work on this mini dissertation and any other review that may be approved by the review committee.

_____ _____

Mapitso V Molepo **Date**

DEDICATION

This paper is dedicated to my uncle and aunt, Thapelo and Mmane for raising me well. To my loving husband, Tshepo and my children, for continuous support and understanding. To all my family members and close friends.

ACKNOWLEDGEMENTS

I would like to acknowledge my research supervisor for his support, words of encouragement and the energy he put in to push me to complete this mini-dessertaion. If it was not for you Prof Beyers, I do not think I would have been able to finish my work on time. Thank you for stretching my abilities and making me realise my infinite potential.

I would also like to thank the contribution of my husband, Tshepo and my children for their continuous support and encouragement. To my friends and colleagues who kept reminding me to keep pushing and finish my studies.

My classmates at TGSL MBA class of 2016, I could not have had any better classmates than you. Each one of you, I am thankful we crossed paths and you added value to my life.

ABSTRACT

The study is carried out in order to evaluate the readiness of new car dealerships in Polokwane for the possible levying of carbon taxes. The study is set out to determine the level of understanding and knowledge of carbon taxes by the new car dealerships.

With the continuous changing climate, the weather patterns have worsened and the resultant impacts seen through storms, hurricanes, droughts and floods, to name a few, around the globe. This has been as a result of the carbon emissions that has damaged the ozone layer.

The ideology of the carbon instruments is that the emitters of carbon will divert to more environmentally friendly methods of running their operations. South Africa is one of the countries that has adopted to implement carbon taxes and the implementation began in 2010 within the motor vehicle industry. However, the motor vehicle industry does not seem to have prepared for the possible implementation of carbon taxes. With Polokwane being a developing city, the researcher aims to determine whether new car dealerships in the city of Polokwane were prepared for the implementation of the carbon taxes.

The study was mainly qualitative and borrowed from quantitative methodology for data analysis. The total population amounted to 20 new car dealerships and a sample of 10 was selected for the purpose of the research. The evaluation of readiness was carried out by sampling of ten new car dealerships within Polokwane where a questionnaire was prepared and the participants requested to complete the questionnaire truthfully.

The literature review considered prior research in relation to carbon emissions and carbon instruments. Some of the findings include identifying that there is still a gap in terms of knowledge and understanding of how carbon instruments work. However; if carbon instruments are correctly applied and implemented, provides for a good stimulation of economic growth. The laws and regulations around carbon tax still need to be refined to ensure that the desired outcomes are obtained.

TABLE OF CONTENTS

List of figures

List of tables

CHAPTER 1

1.1 Introduction

The whole world has been experiencing a great change in climate as a result of the ozone layer being damaged (Aiello, Grande, Sticozzi and Valacchi, 2015). The damage comes as result of carbon emissions that are excreted and discarded by various forms of living and non-living creatures (Cunanan, 2018). One of these non-living creatures being motor vehicles. Motor vehicles discard as emissions, carbon through their life term as they are used by humans to run their daily lives (Alfreds, 2018). Various countries have therefore decided to curb the carbon emissions by implementation of carbon instruments which levies a tax on the user of the carbon emitter (Cunanan, 2016). In this research, the researcher evaluated the readiness by the motor vehicle industry in South Africa in Polokwane by the new car dealerships for the possible levying of carbon taxes. This chapter highlights the manner in which the study was carried out. From the background of the study, the type of research methodologies that were used, the significance and importance of the study. The research objectives and questions, the problem statement and the ethical matters that were encountered during the study.

1.2 Background

Developing countries such as South Africa are greatly affected by the climate change which has in turn affected the country's development priorities (Alton, Arndt, Davies, Hartley, Makrelov, Thurlow and Ubogu, 2014). South Africa had to set climate change matters as part of its priorities (Giordano, 2014). The evaluation of carbon tax readiness would mean for many businesses, moving away from old ways and methods of running their operations to focusing on new ways that are more environmentally friendly (KPMG, 2012). Governments around the globe, the United Nations and most importantly the consumers had to put pressure on businesses to respond to the changing climate (Death, 2014). This had to be pushed through the implementation of policies and businesses were forced to relook at their production processes and their impact on climate issues. South Africa had seen the impact of the change in climate through some of the droughts that it had experienced and among the affected provinces in the Limpopo Province. The motor industry was one

of the first industries where the carbon tax principle was earlier introduced by the South African government (Pillay and Buys, 2013).

Business readiness for carbon tax not only refers to the operations of a business but also the employees and all other stakeholders of the businesses (KPMG, 2012). Businesses must develop strategies that are fused within the entity's operations as they impact the behaviour of employees and other stakeholders (Dooley, 2014). KPMG (2012) performed research on 11 industries in the business environment and from the research it was evident that costs relating to issues of climate had risen by 50% from 2002. For business to remain sustainable and competitive, there are now prescripts and various forms of legislation that the business needs to abide by and as a result there is resounding pressure for businesses to be aware of the climate change and how they possibly contribute to that (Unhelkar, 2016).

The introduction of carbon taxes in South Africa brings about a new market, a new industry and a great change in the technology (Nkabinde, 2016). The change that comes with the introduction of carbon taxes will therefore require the right skilled and knowledgeable people and similarly the resources to obtain the required technology to be able to administer the carbon tax system (Deloitte and Touche, 2015). South Africa currently does not have the necessary skills and resources to operate and run the carbon subsector that is emerging as a result of the implementation of carbon taxes (Nkabinde, 2016). With the current economic conditions, it is uncertain whether South Africa will be able to have the necessary resources for the implementation of carbon taxes.

Motor vehicles discards carbon dioxide which is one of the contributing elements to the climate change and is therefore deemed harmful to the environment (SARS, 2015). As a result, the South African Revenue Services has introduced a levy (carbon tax levy) on new motor vehicles which is used throughout South Africa. This is one of South Africa's ways to try and reduce elements that harm the environment and SARS (2015) believes that with this introduction, motor vehicle dealerships and manufacturers will introduce more energy efficient and environmentally friendly fleets of vehicles. The motor vehicle industry has since 2010 indicated some concerns with regards to the introduction of carbon tax and how the early introduction of the tax system still had grey areas (Newman, 2016). The National Treasury was still

uncertain in terms of which vehicles would be levied and based it on the Value Added Tax act, however, it appeared that most of the vehicles would be excluded and subsequently a few days prior to the implementation, it was revised (National Treasury, 2010). Similarly, much discomfort was raised with regards to the tax increasing the price of the new motor vehicles and the damage that the levy would cause to the motor vehicle industry as well as the economy of the country; not forgetting the ever increasing fuel prices that the consumers are already burdened with (Newman, 2016).

History has indicated that readiness is not an event but rather a process aligned to procedures, processes and protocols (Nhamo, 2013). Readiness more often than not tends to be a long term ideology, as it takes into account the manner in which governments and businesses have been dealing with issues of triple bottom line (Nhamo, 2013). Because of readiness being a long-term process, more research would have to be performed in later years to evaluate the state of readiness of business at that point in time. Hence, the focus of this research was mainly to determine the readiness of new car dealerships for levying of possible carbon tax. Specific emphasis was placed on the tax implications of carbon tax for new car dealerships in the Polokwane area.

1.3 Problem statement

Changes to the climate have slowly been affecting everybody over the last decade and the South African government has responded to the changes by introducing the concept of carbon tax firstly in the motor vehicle industry in 2010 (Alton *et al.,* 2014). The researcher wanted to determine to what extent the new car dealerships in Polokwane have prepared for the implementation of carbon tax.

The transition into an environmentally friendly manner of conducting business might not have necessarily taken place and this may end up affecting the sustainability of businesses within the business environment (Death, 2014). Although the South African government has legislated policies in favour of protecting the environment, it

is not clear whether they created space for readiness of the businesses for possible carbon taxes levying (Death, 2014). It is similarly not clear whether the South African government had put in place measures to train and prepare the new car sales dealerships for implementation of the carbon tax system (Wills, Tshangela, Bohler-Muller, Datta, Funke, Godfrey, Matomela, Pienaary, Pophiwa, Shaxson, Strydom, and Ke, 2016). Neither, is it clear whether the South African government designed an assessment to assess the readiness of new car sales dealerships for the possible carbon taxes that were levied. Businesses within the South African economy, as a developing country, may possibly not have the capacity to handle the pressures that came with the requirements of the new legislations around climate issues (Wills *et al.,* 2016). Furthermore, developing provinces such as the Limpopo province which are mainly rural, may similarly possibly not have the necessary capacity and resources to implement and sustain possible carbon taxes that may affect their businesses (Nhamo, 2013).

The researcher aimed to determine whether new car dealerships in Polokwane, were able to gain knowledge in terms of the application of the carbon taxes and how carbon taxes would be implemented in the business environment. The researcher aimed to determine how carbon taxes would affect the business environment in both the near and distant future.

1.4 Significance of the study

The significance of the study is to indicate whether the application of possible taxes on local businesses within a developing country such as South Africa and mostly within a developing city such as Polokwane for new car dealerships would be able to handle the application of possible carbon taxes. Additionally, the significance of the study is to determine whether the new car dealerships have prepared and whether they are ready to be able to continue as a going concern and not be negatively affected by the implementation of carbon taxes. The study will benefit all stakeholders affected as it indicates what the shortcomings are and how the South African government can get businesses to a place where they are able to cope with the carbon taxes in these difficult economic times.

1.5 Purpose of the study

The South African businesses were trying to adjust to the climate changes and its impact. At the same time, the South African government and climate institutions have forced businesses to implement measures in place to address issues around climate changes and how the environment can be preserved for future generations (Alton *et al.,* 2014). Measures such as carbon taxes were implemented in South Africa, having started off with the motor vehicle industry. It is however, uncertain whether businesses were given time to adjust and obtain the necessary training and resources where necessary. The study aimed at determining the readiness of new car dealerships within the Polokwane area for possible carbon taxes that will be levied by government. The study further aimed to establish whether any steps have been taken by both businesses and the government to get ready for the implementation of carbon taxes and, if no steps have been taken, what remedies can be implemented as a corrective measure.

1.6 Objectives of the study

Objectives of a study are set out in order to guide the research to find solutions for the research questions (Leedy and Ormond, 2014). The research questions in this study led to the following objectives:

- To determine whether new car dealerships knew that there was a need to prepare for carbon taxes.
- To evaluate the impact of such an implementation without having prepared for it.
- To evaluate how new car dealerships in Polokwane prepared for possible carbon taxes.

1.7 Research questions

The continuous changing climate has led governments around the world to relook at the impact of industrialisation and human activity on the environment and in so doing

the South African government introduced carbon taxes. Carbon taxes are the cost of carbon emissions from newly manufactured cars (Death, 2014). The concept of carbon tax was a new concept and was first implemented in the motor vehicle industry. The research questions below allowed the researcher to evaluate the readiness of the motor vehicle industry for the possible levying of carbon taxes.

- Did new car dealerships in Polokwane know that there is a need to prepare for possible carbon taxes?
- How will new car dealerships that have not prepared for carbon taxes be affected by the implementation?
- How can new car dealerships in Polokwane prepare for possible carbon taxes?

1.8 Population

Target population refers to the entire group of individuals or objects to which researchers are interested in generalising the conclusions (Leedy and Ormond, 2014). The target population usually has varying characteristics and it is known as the theoretical population (Saunders, Lewis and Thornhill, 2012). The population of the research was derived from the new car dealerships that are most likely to be affected by the levying of carbon taxes by government. The Polokwane region accommodates 20 new car dealerships (Anonymous, 2017). The study was undertaken in the Polokwane area, with new car dealerships that are likely to be affected by carbon tax, to be levied by government, which were selected for evaluation of their readiness in this regard.

1.9 Sample, sampling methods and sample size

1.9.1Sample:

A sample of 10 new car dealerships was selected for the purpose of the study. The 10 new car dealerships that have been selected represent 50% of the population and can be said to be representative of the entire population.

1.9.2 Sampling methods:

Research methods refer to various methods that a researcher uses to obtain the data needed for the research (Saunders *et al.,* 2012). These methods are applied to a specific sample that the researcher has selected. Sampling refers to selection of items in a population and on which tests are to be performed to obtain results (Saunders *et al.,* 2012). Leedy and Ormond (2014) define a sample as a subset of a population which has actually been investigated by a researcher whose characteristics are representative of the entire population.

For purposes of this study, a non-probability sampling and in particular judgemental sampling was used. Non-probability sampling is defined as a case where probability of including every element of the population in a sample is unknown (Leedy and Ormond, 2014). Types of non-probability sampling are judgemental sampling, quota sampling and reliance on available subjects (Saunders *et al.,* 2012).

1.10 Choice and rationale of research design

For the purpose of this study a qualitative and quantitative research design method was used. The qualitative research method was used as the primary method and the quantitative was used as the secondary method. The qualitative data provided an understanding over the subject matter that was being researched and in this research it provided an understanding over the readiness of the implementation of carbon taxes on new car dealerships within the Polokwane area (Saunders et al., 2012). While the quantitative data provided the numeric element of the qualitative data (Leedy and Ormond, 2014).

1.10.1 Qualitative and quantitative

Qualitative methodologies refer to research which produces descriptive data, generally either spoken or written words (Saunders *et al.,* 2012). Qualitative data is based on meanings expressed through words and other symbols or metaphors (Leedy and Ormond, 2014). Qualitative research requires the use of various strategies to enhance validity and it focuses on credibility, transferability, dependability and confirmability (Leedy and Ormond, 2014).

Quantitative methodologies refer to research which produces statistical data that is either collected through surveys or questionnaires (Saunders *et al.,* 2012). It is a

method that can be applied to anything that can be measured (Leedy and Ormond, 2014). Quantitative research provides a mathematical element of the collected data in a research study (Saunders *et al.,* 2012). This can be in a form of percentages or statistic to name a few (Saunders *et al.,* 2012).

1.10.2 Data collection

Data collection refers to the way intended to obtain data for the research that is being conducted (Saunders *et al.,* 2012). For purposes of this study, data were collected in the following two ways:

Interviews

Interviews were conducted with the respective participants. A structured questionnaire was prepared in the business language and sent to the respective participants. In some instances direct interviews were held.

Available research and documents

Recent available research that had been conducted will be used in gathering information. This includes research that had been conducted in countries that have already implemented a carbon tax system and other applicable research documentation for research conducted in the South African Republic.

A structured data collection approach refers to the way data are going to be represented and accessed (Leedy and Ormond, 2014), and for purposes of this study a structured data collection was used with open ended and closed ended questions.

1.10.3 Data analysis

The researcher used the following method to analyse the data that were collected while conducting the research.

SPSS software system

The SPSS system analysed the captured data and provided descriptive statistics for the researcher. However, before the collected data were transferred to the SPSS

software, it was first captured on Excel. The SPSS software assisted in categorising each variable, the frequencies, and percentage output of the collected data.

1.10.4 Reliability

The researcher used the following method to ensure that the data that were collected while conducting the research were reliable.

The Cronbach Alpha

The Cronbach Alpha was used in analysing the reliability of the collected information for the purposes of the study. The Cronbach alpha provided a measure of the extent to which the items on a measurement scale or test provided consistent information (Wells and Wollack, 2003:4).

1.11 Ethical considerations

The ethics of science concerns what is wrong and what is right in the conduct of research and such conducts have to conform to generally accepted norms and values (Saunders *et al.,* 2012). The ethical issues arose from the interaction with other people and the environment, especially at the point of where there is a potential or actual conflict of interest (Leedy and Ormond, 2014). As a way of adhering to ethical issues that occurred, the researcher had to consider the following when designing the research that would utilise participants who are human beings:

- The researcher was at all times professional and applied expertise objectively, accurately and justly,
- The researcher protected the integrity of the participants and with the institution's consent,
- The researcher protected the identity of the participants and institution,
- The researcher explained to the participants that the envisaged research possesses no physical, emotional or social harm to research participants (Leedy and Ormond, 2014).

- The researcher explained the purpose of the study

1.12 Research Limitations

Some of the limitations experienced when conducting this research are as follows:

- Non participation of new car dealerships
- Limitations or omissions from list provided by the municipality
- Lack of understanding from participants
- Not fully completing the questionnaire
- Budget and time constraints

1.13 Definition of concepts

The study depicted many words however, some of the important words and phrases that will be used in study are listed below:

Carbon tax: This is an environmental tax levied on the carbon content of fuels. It is a form of carbon pricing. Carbon is present in every hydrocarbon fuel (coal, petroleum, and natural gas) and is released as carbon dioxide (CO_2) when they are burnt (National Treasury, 2015).

Developing country/ city: Refers to a poor agricultural country or city that is seeking to become more advanced economically and socially through improvement on infrastructure (Giordano, 2014).

New car dealership: These are businesses that sell new cars at the retail level based on contract with automaker (Singh, 2014).

Readiness: The state of being fully prepared for something and having the willingness to do something (Collins English Dictionary, 2014). The term readiness will be used interchangeably with the term preparedness and for the purpose of this research the terms will have the same meaning.

Climate change: Refers to the change in climate attributed to human activities, mainly fossil fuel combustion, that causes greenhouse gas emissions which alter the composition of the atmosphere, above and beyond the natural variability of the climate (National Treasury, 2015).

1.14 Outline of the dissertation

The chapters in the research are outlined as follows:

Chapter 1 Introduction – indicates a synopsis of the entire research and what it aims to achieve and how the set objectives will be achieved. It introduces the concepts around carbon tax and climate changes. It furthermore defines the problem and sets the aims and objectives of the research. It continues with an explanation of the research approach, methodology and structure.

Chapter 2 Literature review – detailing what research has shown with regards to business readiness for climate changes and resulting carbon taxes.

Chapter 3 Research methodology – indicates what methodology will be followed in collecting and analysing data to achieve the set objectives.

Chapter 4 Findings – Indicates the findings that have been identified during the analysis of the data during the research.

Chapter 5 Recommendations and conclusions – Provides recommendations and conclusions on the objectives that were set in carrying out the research and the way forward for the study.

1.15 Conclusion

Climate changes has led to different types of taxes being introduced throughout the globe with the aim of minimising and mitigating the carbon emissions coming from various contributors. In South Africa, the introduction was first made in the motor vehicle industry with carbon taxes levied on the carbon emissions of a new vehicles

as motor vehicles were seen as one of the biggest contributors of carbon pollution. The research evaluated the readiness and preparedness of the motor vehicle industry, focusing on the new car dealerships within the Polokwane area. The research focused on the understanding and knowledge of the carbon tax concept as well as the implementation element of the tax. Further literature in relation to carbon tax is discussed in detail in the next chapter. The next few chapters will provide a fuller picture of the data analysis, the findings and recommendations for the research.

CHAPTER 2

Literature Review

2.1 Introduction

Carbon emission has become a great area of concern worldwide as the emissions have impacted greatly on the climate. With the motor vehicle industry being one of the contributors of carbon emissions. In this chapter the researcher will be focusing on evaluating the readiness of new car sales dealership for possible carbon taxes. This chapter will look at carbon emission as worldwide threat as it affects everyone and will determine whether there is a need for carbon taxation instruments. The chapter will further look into carbon issues within a South African context as well as the effect of carbon tax and the motor vehicle industry readiness in South Africa. The researcher will further detail elements that should be considered in relation to preparing the motor vehicle industry for possible carbon taxes. The last section of the chapter will provide a summary of the literature.

2.2 World-wide threat of carbon emissions

The entire globe has been experiencing changes in climate as a result of the carbon dioxide released into the atmosphere. This has led to changes in weather patterns which has caused hurricanes, droughts and cyclones amongst other things (Pillay, 2014) and this has set economies around the world back as food prices and fixing of damaged communities have become too costly for the governments (Crowley, 2017).

Carbon is found in fuel such as coal, petroleum and natural gas and is released as a dangerous carbon dioxide when burned (Hansen, Kharecha, Sato, Masson-Delmotte, Ackerman, Beerling, Hearty, Hoegh-Guldberg, Hsu, Parmesan, and

Rockstrom, 2016). This carbon dioxide is the cause of the trapping of heat within the earth's atmosphere and therefore causing global warming (Landsberg and Waring, 2014). There is carbon that is created/ released as a result of human activity. Research by scientists has argued that close to 90% of global warming has been caused by humans (Nini, 2018).

The climate has been changing rapidly over the last years, as it was recorded by NASA that 2016 was recorded as the hottest year since recording began 136 years ago (Nini, 2018). Records further indicate that 15 of the 17 hottest years, are years after 2001 (Alfreds, 2018). NASA also indicates that in 2016 sea levels were recorded at their highest and the ice and glaciers at the Antarctic are melting at an increased rate such that the ice has been reduced by around 4% (Nini, 2018). The ever deteriorating climate has caused low lying areas to be easily flooded (Boden, Marland and Andres, 2011). A recent study indicates that flooding is expected to impact 54 million people by the year 2030 (Nini, 2018). And similarly, the United Nations has indicated that in 2014 nearly 50 countries had water scarcity as a result of the change in weather patterns that have affected the amount of rain that falls from the clouds (Boden *et al.,* 2011).

Although the world is moving towards industrialisation, these too have contributed greatly to the carbon emissions (Boden *et al.,* 2011). The sectors that contribute greatly to the carbon emissions are transportation, energy production, mining, manufacturing and constructions, residential and commercial, and institutional sectors (Cunanan, 2018). The transportation sector includes the motor vehicle industry. Where road transport has been recorded to be responsible for 72% of the carbon emissions within the transport sector (Cunanan, 2018). The 196 countries that signed the Paris Agreement, should they wish to see progress in reducing the carbon emissions, the above mentioned carbon intensive sectors would be the starting point (Cunanan, 2016).

Carbon emissions have become a worldwide threat and have affected and impacted on the climate and weather patterns (Alfreds, 2018). The above discussions indicate the intensity of the destructions caused by the carbon emissions and the impact these have had on communities around the world. With the transport sector being one of the major contributors of carbon emissions (Cunanan, 2018). In response to

the carbon threat countries around the globe have signed the Paris Agreement. 196 countries that have signed the Paris Agreement have vowed to decrease global warming and limit temperature increase (Cunanan, 2016). To date more than 100 countries worldwide have introduced some form of carbon instrument within their economy and in over 40 countries it is reported that these have been successful (Roberts, 2017).

2.3 Carbon issues in South Africa

South Africa is amongst the top of carbon emitters within the developing countries in the world (Tukker, Bulavskaya, Giljum, De Koning, Lutter, Simas, Stadler and Wood, 2014). Based on the 2008 fossil fuel carbon dioxide emissions, South Africa is the 13th largest emitting country and the largest emitting country on the continent of Africa (Roberts, 2017). With the transport sector being one of the major contributors of carbon pollution, South Africans rely greatly on road transport as more than 69% of the population in South Africa uses road transport daily (Monama, 2018). As a result, the South African government's response to the forever increasing carbon emissions was through the introduction and implementation of carbon taxes, which was first implemented in the motor vehicle industry (Pillay, 2014).

The same climate changes that have been experienced around the globe have similarly been experienced by the South African communities. All the provinces of South Africa have experienced some drought and flooding and severe storms in and around the country (Brown, 2016). Among these, the Limpopo province has been one of the provinces that has been affected by the climate changes (Monama, 2018). South Africa has therefore set targets in place with regards to reducing its carbon footprint and as a result would therefore decrease the carbon emissions released into the atmosphere (Tukker *et al.,* 2014). It is as such that the South African government saw it fit for the need for a cost effective means that should be paid for emitting carbon into the atmosphere by all affected parties (Van Schalkwyk, 2013).

The South African government has implemented the carbon tax since 2010 which was firstly set off in the motor vehicle industry (Nel and Nienaber, 2012). This is with the intention of ensuring that motor vehicle manufacturers are making environmentally friendly vehicles and if not then the tax should be levied on the

vehicles. The processes started off with a discussion paper detailing the proposed implementation and how it would have to be implemented (Pillay, 2014). Although there were still some concerns with regards to how the implementation would play out exactly, the ideology and discussions were welcomed by most industries. And this was mainly as a result of the revised Company's Act and the King III Report which indicated that those charged with governance have to disclose in their annual report what their responsibility is towards improving its carbon footprint (Viviers and Els, 2017). The drive of the carbon tax saw pieces of legislation and policy being drafted so as to enable the implementation and provide guidance in that regard (Nachmany, Fankhauser, Townshend, Collins, Landesman, Matthews, Pavese, Rietig, Schleifer, and Setzer, 2014). As a result, the Carbon Tax Bill came into effect.

The South African government has now drafted the carbon tax bill which has been approved in May 2019. There are however, many other legislations that form part the build-up of the Carbon Tax Bill such as the National Environmental Management: Air Quality Act no 39 of 2004 and Draft National Atmospheric Emission Reporting Regulations which was published on 18 July 2014 (Marron, Toder and Austin, 2015). This regulation regulates the reporting of all data and information from one point to the internet based National Atmospheric Emissions Inventory System (Marron *et al.,* 2015). The introduction of carbon tax is not a new ideology when looking at the environmentally related legislations that exist with the aim of conserving and protecting the environment (De Wit, 2016). Some of the legislations go back to the 80s and 70s and were revised after democracy (Marron *et al.,* 2015).

The implementation and introduction of carbon tax builds up to the objectives of the National Environmental Management Act 107 of 1998 as well as the Environmental Conservation Act no 73 of 1989, whose aim is to protect the environment against all sorts of damage/pollution (Marron *et al.,* 2015). The aim is to ensure that the environment is conserved even for future generations to come (Nachmany *et al.,* 2014). The carbon tax concept/ ideology supports this objective and the carbon instrument will be applied from a perspective of a pollutant that is damaging the environment by destroying the ozone layer.

There are factors that play a big role/ contribute greatly to the increase in the carbon emission within the South African environment (Nhamo, 2013). These are as a result of the history of South Africa, of which to date, the effects thereof can still be felt or seen (Nhamo, 2013). Only after the democracy in 1994 are the previously disadvantaged able to access a good living such as living in/ near towns and cities (Pillay, 2014). This has therefore seen South Africa experience a positive change in its economic landscape although it still lacks a great deal in some areas.

The improvement and development of the South African communities and fall of the apartheid saw many South Africans being able to be well educated, afford a good/average life and as a result move from rural areas to urban areas (Pillay, 2014). In preparation of the urbanisation, houses must be developed, thus doing away with the trees etc. that assisted with the removal of carbon dioxide (Lwasa, 2014). More South Africans can afford to purchase motor vehicles which also contribute to the carbon emissions (Pillay, 2014). The use of road transportation within the big cities such as Johannesburg is recorded as high and lead by the uses of taxis by commuters at 41% and this was followed by private cars and passenger cars at 13% (Monama, 2018).

The bulk of South Africa is still regarded as rural; two of the nine provinces can be regarded as ahead from a development point of view as compared to the other seven provinces (Monama, 2018). Within the rural provinces farming in crop, cattle and sheep is quite prominent (Lwasa, 2014). People in the rural areas are reliant on and still use ancient means of making a living i.e. making fire with woods and coal outside in order to be able to prepare a meal for the family, to boil water in preparation for taking a bath etc. (Sole and Wagner, 2016). These are some of the great contributors of the carbon emissions that are released into the atmosphere (Lwasa, 2014).

South Africa is a country filled with minerals and as a result the economy is mainly reliant on mining of these minerals and exporting those (Fessehaie, Rustomjee and Kaziboni, 2016). South Africa accounts for a large proportion of the world production and reserves which are estimated at 20 trillion Rand (Anonymous, 2018). Mining in South Africa contributed 8% to the gross domestic product in 2017 and as a result employs a huge number of South Africans (Anonymous, 2018).

The deforestation and damage to the environment that comes with mining similarly contributes to the increase in the carbon dioxide in the atmosphere as there are fewer trees that can absorb the carbon dioxide that is released by humans (Landsberg and Waring, 2014). However, South Africa's mining sector is an important foreign exchange earner and thus quite crucial for the fiscal of South Arica (Fessehaie *et al.,* 2016).

Eskom is the sole supplier of electricity in South Africa (Pretorius, Piketh, Burger and Neomagus, 2015). With rapid urbanisation and industrialisation, Eskom is required to produce more electricity to be able to accommodate the growing economy since the apartheid era (Pillay, 2014). The infrastructure for Eskom is old and had not been modified since 1994 (Pretorius *et al.,* 2015). The production of electricity in South Africa is based on burning of coal which releases the carbon emissions into the atmosphere (Pretorius *et al.,* 2015). Eskom is the only means South Africans have for the production/supply of electricity and this only means contributes around 45% of carbon emissions for South Africa (Anonymous, 2011).

Increasing growth of South Africa as a developing country saw the rise of more industries and mainly in the big cities such as Johannesburg, Cape Town and Durban (Pillay, 2014). Developing cities have also experienced industrialisation, although not as rapidly as in the big cities (Pillay, 2014). Sectors that contributed greatly to the rapid industrialisation in the early 2000 include the automotive sector, the manufacturing sector and wholesale and retail (Anonymous, 2018). The said sectors required resources to be able to run the operations and for some of these industries, fossils fuels are a primary resource that is needed to be able to produce their goods and similarly discard carbon emissions into the atmosphere (Nicolaides, 2016). The above mentioned sectors are important within the South African economy, as they make a contribution to the South African gross domestic product (Anonymous, 2018). In 2017 manufacturing contributed 13% and trade contributed 15% with transport and communication following at 10% (Anonymous, 2018).

South Africa finds itself in a difficult situation; having to deal with some of the global issues that all countries have and economies around the world are dealing with and yet it are lagging behind from a development point of view. The new democratic South Africa is still trying to address issues pertaining to the apartheid legacy (Pillay,

2014). As indicated above, the transitioning of the freedom is yet again coming with its own challenges where with urbanisation, industrialisation, rural areas, reliance on the mining sector and Eskom are some of the major contributors of carbon emissions (Anonymous, 2018).

2.4 The global need for carbon taxation

Countries around the world have implemented or are planning to implement some form of carbon pricing and this was as a result of signing of the Kyoto Protocol. (Höhne, Warnecke, Day and Röser, 2015). 196 countries have also signed the Paris agreement indicating their commitment to reducing their carbon emission (Cunanan, 2016). As a result, forms of carbon instruments have increased from 20 to 38 since 2012, and carbon tax is one of those instruments (Fridstrom and Ostli, 2017). This is an indication of how everybody has become conscious of the carbon impacts on the environment and are therefore coming up with ways to try and curb the effects thereof (Hanssen *et al.,* 2016).

In light of supporting and implementing the South African Constitution Act 108 of 1996 which states that everybody has a right to a healthy living environment, and to try mitigate and reduce further damage to the atmosphere caused by carbon dioxide, the South African government and governments around the world have introduced a Pivogon tax (carbon tax); for some countries this varies but the ideology is similar (Braid, 2016). Emitters may now have to find more environmentally friendly ways in which they can run their operations and still achieve the same objective of profit maximisation (Lorek and Spangenberg, 2014). This would mean that the emitters of carbon do away with methods and equipment which are not environmentally friendly (Wang, Hubacek, Feng, Wei and Liang, 2016) and invest in a green form of equipment and technology in order to minimise any possible carbon tax implications (Williams, 2016).

On the same note, governments around the world that have departments of health, and energy, to name a few, will be affected by the implemented legislations of the carbon tax in the near future (Rieuwerts, 2015). In South Africa, departments such as the Department of Energy, Department of Environmental Affairs, Department of Cooperative Governance and Human Settlements and the Health Department will

surely be affected by the implementation of carbon tax (Hanssen *et al.,* 2016). The local government, in particular that of South Africa, similarly will be affected with regards to the landfill sites that they operate and from which there is some form of carbon emission that is released into the atmosphere as a result of maintaining the landfill site (Henríquez, 2013).

There are countries around the globe that, after having introduced the carbon tax principle, have experienced economic growth and creation of jobs and businesses have been booming and reduced the carbon dioxide that they release into the atmosphere by putting into place environmentally friendly equipment and technology within their operations (Hu, Lin, Fan, Lien and Chung, 2016). Among these countries are Sweden, British Columbia and Norway (Murray and Rivers, 2015). However; there are countries that have tried to implement the carbon tax but have not succeeded such as Australia (Zhang, 2016). This questions the readiness and preparedness of the businesses and governments within these countries. Due to their not being ready and prepared, could have possibly led to the failure of the introduction and implementation of the carbon tax (Nhamo, 2013).

There are a few countries in North America that have implemented carbon tax and among these is British Columbia. British Columbia is one of the countries that have experienced positive results in this regard for the country and its economy (Murray and Rivers, 2015). Although the results of the implementation of the tax became visible only after eight years, great results have come of that. Some of the results of the tax are: Personal tax has reduced drastically and is the lowest in the whole of North America, the burning of fossil fuels has been reduced by 16% since the implementation of the tax, and its growth domestic product has improved since 2008 (Paris and Owen, 2015). The economy has since improved both for business and jobs (Murray and Rivers, 2015). Looking at Canada, still in North America, if the carbon tax principle is not introduced and implemented its economy will suffer (Beaty, Lipsey and Elgie, 2014). Of late, Canada has experienced the Mountain Pine Beetle infestation which has resulted in warmer winters and has therefore damaged the forest industry which led to closing of mills and job losses (Price, Alfaro, Brown, Flannigan, Fleming, Hogg, Girardin, Lakusta, Johnston, McKenney. and Pedlar, 2013). The pollution caused by the burning of fuels has become dangerous to the

communities and Canada losses more than $8 billion per year in its economy (Paris and Owen, 2015).

From the above, it is clear that environmental instruments have become popular taking into account the climate challenges that the world is facing today. The most popular one of these is the carbon tax which is levied on production and applied at a transaction level as a direct tax (Weitzman, 2015). The aim of the implementation of carbon tax is to improve on the economies' footprint around the world (Bird, 2015). Having discussed the worldwide threat in the previous section, it is evident that the policy instrument is needed (Baranzini, Van den Bergh, Carattini, Howarth, Padilla, and Roca, 2015.)

2.5 The effect of carbon tax on the motor vehicle industry in South Africa

The continuing climate change has become a worldwide phenomenon and countries around the world have responded to the climate change through the introduction of policy instruments, such as carbon taxes (FitzRoy and Papyrakis, 2016). As a result of the changing climate, which has affected the corporations, both large and small corporations have had to relook at their production processes and technology in response to policy instruments that are being introduced by countries around the world (Pillay, 2014). The South African economy, although having heard the plans of the South African government in trying to curb and reduce its carbon footprint by 34% in 2020 (Upadhyaya, 2016), was first in shock and showed much uncertainty with regards to how the implementation of such a policy would affect their corporations (Benn, Dunphy, and Griffiths, 2014).

Introduction and implementation of carbon tax is a way of ensuring that amongst the development and growth within the Limpopo province (Polokwane) that various industries make the correct selection of methods to be pursued in ensuring that there is economic growth in the area (Upadhyaya, 2016) and that these methods are not to human harm or environmental damage. One of these industries is the motor vehicle industry where the implementation first set off (Benn *et al.,* 2014).

The transport industry is one of the great contributors of carbon emissions and South Africans often use road transport which contributes close to 70% of carbon

emissions (Monama, 2018). Within the Limpopo province 68% of the population uses road transport daily and with the planned developments in the province, this number is expected to increase (Anonymous, 2018).

Polokwane is an economic hub and thoroughfare for most road users traveling the neighbouring countries such as Zimbabwe and is home for many logistic and transport companies (Anonymous, 2018).

Due to road transport being one of the big contributors of carbon pollution in South Africa, the implementation of carbon tax started off in the motor vehicle industry in 2010 and that is when the drafting of the National Treasury discussion paper started (National Treasury, 2017). After the motor vehicle industry, it would then roll out to other industries in phases (Pillay, 2014). The South African government wanted to make certain prior to rolling out the carbon tax that it is established within the motor vehicle industry (Upadhyaya, 2016). Although the Carbon Tax Bill has been drafted it was seen that the implementation of the carbon tax in other industries was delayed from its original inception date of 2016 to 2019 (Anonymous, 2014). This further raises concerns as to whether government is ready for the implementation of the policy instrument (Upadhyaya, 2016).

The uncertainties around the 'how' part of the implementation raised even more questions than answers (Benn *et al.,* 2014). The National Treasury 2010 discussion paper outlines the challenges that not only government but all stakeholders had with the implementation of the carbon tax (Anonymous, 2018). Among these challenges, the National Union of Metalworkers of South Africa raised concerns over the objective of the introduction of the tax (Anonymous, 2014). If the government is encouraging that corporations do away with old methods of doing business which included manual labour and possible burning of fossil fuels, then these would have to be replaced by advanced environmentally friendly equipment and that this would then lead to laying off of employees (Spruell, 2016). Steel and Engineering Industries Federation of South Africa (Seifsa) said that the introduction of carbon tax would harm the economy and increase costs for businesses as well as lead to job losses (Steyn, 2015). Another challenge was the computation of the cost of carbon tax that would have to be paid by the affected companies. They asked how that would be derived (Alton *et al.,* 2014). As the introduction was first to set off in the motor vehicle

industry; which vehicles would be affected and which would not (Vosper and Mercure, 2016). All these uncertainties made the various industries unsettled (Benn *et al.,* 2014).

Further challenges on the carbon tax was the costing thereof (Bird, 2015). Carbon tax is applied at the point of sale for new motor vehicles and charged/ calculated in relation to the carbon emissions that are anticipated to be discarded by the car during its useful life (Vosper and Mercure, 2016). The motor vehicle manufacturers would therefore base the carbon emissions on the engineering around the vehicle being able to give the estimated figures in terms of carbon emissions that would likely be discarded by the vehicles (Bin and Xin, 2015). These figures provided by engineers would be multiplied by the cost per carbon emission as determined by the National Treasury and the cost of carbon tax based thereon (Tyler, Boyd, Coetzee and Winkler, 2014). As this cost is determined at the point of sale, the cost is therefore transferred over to the customer/ purchaser who is purchasing the vehicle (Vosper and Mercure, 2016). The carbon tax cost is added to the cost of the vehicle being purchased and thus increasing the cost of vehicles (Vosper and Mercure, 2016). Now of late it has been seen that the taxi drivers throughout South Africa take to the streets and one of the matters in question through their strikes is the cost of a mini bus which according to them, has escalated from R230 000 to almost double the price between 2009 and now (Writer, 2017). The increase in the cost of vehicles is partly likely to be as a result of the introduction of carbon taxes in the motor vehicle industry (Writer, 2017).

Similarly, a few years back the scandal of VW around the emissions was seen, where the car maker used technology to misrepresent the emissions level of nitrogen oxide and carbon dioxide (Hotten, 2015). When the cars were tested the performance of the cars changed in order to improve performance which indicated positive results (Hotten, 2015). The technology built onto the cars was able to cheat the testing system as it was indicated to be outdated (Barth, Bauer, Hughes, King and Koerner, 2017). South Africa is one of the countries that would likely be affected by the VW emissions scandal, as the people feel ethically cheated and has therefore lost trust (Eliseev, 2016).

South Africa would have to put in place advanced systems of testing and tighten the rules for testing vehicles to avoid the recurrence of the VW scandal (Hotten, 2015). This has seen VW sales drop drastically worldwide as the trust of the customers was betrayed similarly the trust of all stakeholders (Barth *et al.,* 2017).

The introduction and implementation of carbon tax therefore require quite a lot and not only from government. The same element of commitment is required from the affected industries and in this regard being the motor vehicle industry (Nhamo, 2013). Should the South African business environment not be able to prepare for the implementation of carbon taxes, this may result in the economy and not just the business not being able to be sustainable and may possibly hamper growth in an already distressed economy (Vosper and Mercure, 2016). All governments around the world, prior to implementation, would have to make a thorough preparation and amongst other things be able to prepare for the major factors being capacity, with regards to human capital, funding with regards to kick starting the process and lastly but not least, infrastructure (Nhamo, 2013). The South African government would have to ensure that the necessary technological infrastructure to allow the measuring process of emissions discarded into the atmosphere is in place (Kirkpatrick and Prins, 2015). The South African government would similarly have to consider the factors discussed below in leading to the proper implementation and introduction of carbon taxes (Nhamo, 2013).

The government and all affected stakeholders will have to make sure that from a human capital, knowledge and skill perspective all stakeholders are ready (Tyler *et al.,* 2014). There must be the right and well-qualified people to work with the carbon tax matters both from a technical to the administrative perspective (Tyler *et al.,* 2014). The carbon tax concept is not necessarily a new concept, as it is similar to that of electricity levy, however, the application will be different and as a result the technical skills and knowledge are required (Van Schalkwyk, 2013). The correct level of tax expertise will be required in carrying out and administering the carbon taxes (Van Schalkwyk, 2013).

The introduction of the carbon tax comes costly from an administrative point of view and funding will be required for both the implementation and maintenance and sustainability (Marron *et al.,* 2015). New infrastructure and technology throughout the

9 provinces of South Africa including Limpopo (Polokwane) will be required for measurement purposes of the carbon emissions as well as the reporting thereof (Marron *et al.,* 2015). A proper trail will need to be in place for audit purposes and in particular for tax audits both from audit firms and from the South African Revenue Services (Nel and Nienaber, 2012). The human capital that will be invested in has to be funded and there will be continuous research and training in improving the implementation of the policy instrument as supposedly there will be challenges and new developments that will have to be taken into account as years progress (Van Schalkwyk, 2013).

The appropriate technology and infrastructure will be required for the adequate administration of the carbon tax (Tyler *et al.,* 2014). The required infrastructure may range from buildings to IT infrastructure as there may be new and /or additional staff appointed to assist with the carbon tax administration and the Department of Environmental Affairs' IT system may not be adequate (Anonymous, 2018). Should there not be proper infrastructure in place, this may end up in limiting the proper implementation as there would not be any emissions measurements against which to apply the cost of carbon emissions (Nhamo, 2013). Yet again South Africa might not have skills for the manufacturing of the required infrastructure and this might need to be imported and with the Rand plunging on a daily basis, affected industries might end up not investing in the required infrastructure and equipment (Van Schalkwyk, 2013).

Carbon emissions have become part of our South African daily lives and cannot be ignored. They affect all stakeholders as seen in the VW scandal which is even to date still in court (Hotten, 2015). Governments around the globe should ensure that when embarking on an introduction of a form of instrument and in this case being carbon tax, that they are more than ready (Nhamo, 2013). That means that the right equipment is in place, that the people involved in the measuring and the computation of the carbon emission figures are well trained and that they hire the best technological advanced individuals that will assist in building stringent processes that will detect if there is any form of cheating in place (Kirkpatrick and Prins, 2015). The South African government and South African affected companies will have to continuously engage with all stakeholders to ensure that all uncertainties and concerns raised by various institutions are adequately addressed.

2.6 Carbon tax readiness for motor vehicle dealerships in Polokwane

To be able to successfully implement the carbon tax, the South African government and the South African economy would have to go through a process of preparing for the implementation (Nhamo, 2013). Fortunately, South Africa already has an environmental tax/ levy that is administered by the Department of Environmental Affairs and thus the implementation of carbon tax will only be an expansion of the tax (Anonymous, 2014). The price of new motor vehicles already includes the environmental tax (Anonymous, 2014). The transport/ motor vehicle industry has to prepare for the expansion of the environmental tax, as the carbon tax will not work in the same manner as the environmental tax (Anonymous, 2014).

The city of Polokwane, located in the province of Limpopo, is home to 20 new car dealerships with more than five of the new sales dealerships located at the entrance of the city from the N1 route (Anonymous, 2017). Polokwane as the only city in Limpopo with many new car dealerships, not only caters for the market in Polokwane but for the markets in the rest of the Limpopo province (Anonymous, 2018). The representation of car dealerships includes some of the listed companies on the Johannesburg Stock Exchange (Anonymous, 2018). The dealerships in Polokwane would have to prepare for the implementation of the carbon taxes and not only place reliance on the 'head office' of the dealerships (Anonymous, 2014).

Readiness/ preparedness does not take place overnight. There are processes and systems that are rigorous in nature and require thorough understanding and training for the affected companies and the government (Nhamo, 2013). Carbon tax implementation within the motor vehicle industry would have had all affected parties go through a process with the aim of preparing for the implementation and assessing and analysing the impact thereof and putting in place measures and controls for any unforeseen unfavourable circumstance (Williams, Gordon, Burtraw, Carbone and Morgenstern, 2014). In preparing for the implementation of carbon taxes, at first glance the preparation might not be complete and would therefore be a continuous process for some dealerships in Polokwane (Nhamo, 2013). This will come about as the result of new developments after the implementation and possible refining of the application (Pillay, 2014).

In preparing for the carbon tax implementation, new car dealerships in Polokwane should consider that they have the buy-in of the customers (Kirkpatrick and Prins, 2015). If customers are unable to understand how the concept of the carbon tax comes about and why they have to pay for it, the sales of new cars may decrease and leave customers unhappy (Hotten, 2015). This is an important step in the process as there need to be consultative measures and steps in place prior to the government drafting a piece of legislation or policy regarding the matter (Nhamo, 2013). Government would therefore need to consult all stakeholders including customers with regards to the proposal on the policy and legislation that would be passed and government and the affected parties both need to understand how this would affect either of them and how the implementation would ensure continued growth, development and sustainability for the affected businesses and the government at large (Pillay, 2014).

Additionally, it is essential to ensure that the motor vehicle industry obtains an understanding of the motive behind the introduction and implementation of carbon taxes (Anonymous, 2018), by grasping the importance and the urgency of climate changes and the drivers that contribute to the changes in climate (Pillay, 2014). Government has already identified the industries that contribute to the carbon emissions and should therefore create a platform for sharing the knowledge, the vision of the implementation of carbon taxes (Nhamo, 2013). In this regard, what matters is saving the environment and preserving nature but on the same scale allowing businesses to still be able to operate and grow (Upadhyaya, 2016). New car dealerships within Polokwane will have to start planning for the future of carbon tax, as government has indicated that the tax is here to stay (Burchell, 2018). The planning of the carbon tax future entails creating an empowering and supportive business environment (Nhamo, 2013) by means of sharing the vision for the country as a whole through the introduction of carbon taxes and ensuring that in the long run businesses implement the improved environmentally friendly process of running an operation and thus reducing carbon emissions (Upadhyaya, 2016).

The South African government has been sending the right signals to the right sector; the need to introduce carbon tax and that the implementation would first take place within the motor vehicle industry (Nhamo, 2013). Early signals by means of discussions and consultative processes with the motor vehicle industry, in this

instance the new car dealerships, is an important step that the government should not overlook (Pillay, 2014). The motor vehicle industry together with the customers are the most affected parties to which the message around the introduction of carbon taxes should be directed (Upadhyaya, 2016). Customers are the financiers of the direct tax and the dealerships and simply the middleman collecting the revenue for South African Revenue Services (Marron *et al.,* 2015). Every market and industry has environmental consequences which, if not administered, can bring instability within the market (Upadhyaya, 2016). Therefore, promoting of the visions and future plans of government can bring understanding to the customers and the motor vehicle industry (Nhamo, 2013).

Lastly, to ensure that there is a smooth transition for the motor vehicle industry, the necessary training and education in relation to carbon tax should take place (Kirkpatrick and Prins, 2015). Government should ensure that new car dealerships in cities such as Polokwane are well trained and equipped to administer carbon tax within their institutions (Marron *et al.,* 2015). Education and training is an important step that should take place to ensure that there are no distortions that are brought into the market place as a result of the introduction of new policies and legislations (Nhamo, 2013). If there is uncertainty this would affect the market within which the affected industries trade (Upadhyaya, 2016). Feedback, discussions and continuous consultations will provide a platform of development and growth for both the government and the motor vehicle industry (Pillay, 2014).

“The implementation of the Carbon Tax is rushing towards us, and any business which fails to understand it, to plan for it, and to be ready for it… does so at its peril”, comments Zelda Burchell (2018) from the business report. This statement indicates the need and importance of the motor vehicle industry to prepare for the implementation of carbon tax. In ensuring that South Africa will be able to meet its Koyto Protocol objectives and improve its carbon footprint (Höhne *et al.,* 2015). As well as keeping to the Paris Agreement, the South African government will have to consider the transitioning of the motor vehicle industry and provide the relevant training and thorough consultative processes (Cunanan, 2016).

2.7 Summary

Carbon emission has indeed become a worldwide threat as its impacts can be felt and seen in the climate changes. With the threats indicated in the chapter a form of carbon emission instrument is required and thus the global need for carbon tax. Although the ideology of carbon tax is seen by most in a positive note (Braid, 2016), some have however criticised it in the essence that although it does motivate companies and industries to improve the technology within the production process (Spruell, 2016), it does not drive the mitigation for release of carbon dioxide. The literature indicates that legislations have been drafted and implemented but the training and the capacity building has not been effected for the motor vehicle industry and the new car dealerships of Polokwane (Nachmany *et al.,* 2014). The literature further indicates that for a city such as Polokwane to be able to prepare for the implementation of carbon taxes for new car dealerships would need to consider buy-in from customers, unions and other relevant institutions within the metal and steel field (Morron *et al.,* 2015).

South Africa has also been greatly impacted by the changing climates as a result of the carbon emissions. This too is evidenced by the storms and flooding which have been experienced throughout the nine province including the Limpopo province (Polokwane). A result of the implementation of carbon taxes by the South African government in the motor vehicle industry, as literature has indicated, that the road transport contributes close to 70% of carbon emissions in South Africa (Monama, 2018) and reliance on road transport being 68% in Polokwane (Anonymous, 2018). The chapter looked at the carbon issues in South Africa considering that it is still a developing country and still lacking in some aspects of reliance of ie. Eskom which provides electricity through the burning of fossil fuels (Vosper and Mercure, 2016). The literature indicates the core matters that have put South Africa at the forefront of carbon emitters in Africa and 13th in the world. (Benn *et al.,* 2014).

This chapter has been able to indicate the status quo of the carbon issues around the world and in South Africa. It has also been able to indicate the future plans of South Africa in relation to carbon emissions matters. For the South African government to decide to implement carbon taxation, consultative and discussion

forums have taken place. The next chapter will indicate the research methodology of the study.

CHAPTER 3

Research Methodology

3.1 Introduction

In this chapter the researcher has presented an approach that was undertaken in conducting the research. The researcher will conduct the research within the Polokwane area with the new car sales dealership. The researcher has sampled from the population and conduct interviews from a set questionnaire and from which findings, conclusions and recommendations will be made. In this chapter the following elements will be covered: research design, research area, population, sampling, data collection and data analysis.

3.2 Research design

Research design indicates the manner in which research data will be collected and analysed, relevant to the research problem (Ravitch and Riggan, 2017). Research

design features the plans, specifies the sources and types of information relevant to the research (Pruzan, 2016). It is an overall strategy which sets out an approach in collecting and analysing data and in some instances indicates the time and budget of the research (Kothari, 2013). Research design integrates the various components of a research in a logical manner (Lampard and Pole, 2015). The blueprint of a research design is to enable the research to obtain evidence that effectively addresses the research problem and to avoid any form of ambiguity (Yin, 2016).

For the purpose of this study a qualitative research design method was used as a primary research design method. The qualitative data provides an understanding over the subject matter that is being researched and in this research has provided understanding about the readiness of the implementation of carbon taxes on new car dealerships within the Polokwane area (Saunders *et al.,* 2012).

Qualitative methodologies refer to research which produces descriptive data generally; either spoken or written words (Saunders *et al.,* 2012). Qualitative data is based on meanings expressed through words and other symbols or metaphors (Leedy and Ormond, 2014). Qualitative research requires the use of various strategies to enhance validity and it focuses on credibility, transferability, dependability and confirmability (Leedy and Ormond, 2014). Qualitative research is used to determine the thinking, opinions and know-how on a particular subject; in this respect readiness for carbon tax. It will allow the researcher to delve deep into the subject matter (Smith, 2017). Qualitative research will allow the researcher to reveal the understanding of the carbon tax implementation and the action that the dealerships have taken in administering the carbon taxation (Lacroix and Richards, 2015).

The secondary form of design that was used in the research was the quantitative research design. Quantitative research design refers to a research method that focuses on statistical analysis (Creswell and Poth, 2017). Quantitative research design complemented the qualitative research design in this study (Lampard and Pole, 2015).

3.3 Research methodology

Research focuses on the relevant, useful and important questions (Spickard, 2017). Research is a way of gaining new knowledge (Yin, 2016). Research tends to expand on the existing knowledge by redefining the problem (Ravitch and Riggan, 2017).

Methodology looks at how data are going to be collected and analysed through a research project (Creswell and Poth, 2017). Methodology therefore is a systematic and theoretical analysis of what a researcher is going to implement in a field of study (Yin, 2016). It comprises of theoretical methods and principles associated with a branch of knowledge (Yin, 2016). Research methodology is applied in the redefining of the problem to achieve/ gain the new knowledge (Creswell and Poth, 2017). The methodology may include publication research, interviews, surveys and other research techniques, and could include both present and historical information (Spickard, 2017).

Research methodology refers to a process used in collecting data and information for purposes of carrying out a particular research to compile findings from that research and provide recommendations (Creswell and Poth, 2017). It refers to a systematic way of solving a problem. Research methodology has many dimensions and research methods form part of research methodology (Nastasi and Hitchcock, 2016). Where research methods look at various techniques and methods that a researcher applies in his study, research methodology looks at the systematic way of resolving the research problem (Spickard, 2017). The methodology focuses on the actions that will be taken by the researcher to investigate the research problem and to provide a rationale for the procedures that the researcher would carry out in analysing information that would be used in understanding the problem and in providing recommendations (Lampard and Pole, 2015). Methodology looks at the broad philosophical foundation of the research methods (Ravitch and Riggan, 2017). A methodology may be depicted as a model to be applied by the researcher in carrying out the research (Yin, 2016).

Research methodology provides an indication of the steps that the researcher has taken in studying the research problem (Spickard, 2017). It is therefore pertinent that the researcher knows not only the research techniques and designs, but also the methodology (Spickard, 2017). It is furthermore necessary for the researcher to know the different assumptions applied in the different research techniques and the different criteria and be able to understand that there are methods and techniques that will work in some instances and not in others (Yin, 2016).

Research methodology provides guidance to a researcher with regards to the training needed by the researcher in gathering material and arranging these, with the required participation in the fieldwork, training for collection of data relevant to the research problem, sorting out the collected data and interpreting the data (Nastasi and Hitchcock, 2016). Research methodology is therefore a science of studying how research is to be carried out (Yin, 2016). It indicates the procedures which researchers are going to perform in relation to their work (Spickard, 2017). It is a method which to systematically and logically solves a problem (Yin, 2016). Research methodology describes, explains and predicts a phenomenon. It is defined as the study of methods by which knowledge is gained (Ravitch and Riggan, 2017).

Research is a search for knowledge where a problem is formulated into a hypothesis and facts and data are collected and analysed by means of various methods in an attempt to reach a conclusion with regards to the formulated problem (Kothari, 2013). Research methodology is therefore a strategy by which a researcher maps out the approach in relation to problem solving (Ravitch and Riggan, 2017).

3.4 Mixed research design

Mixed research design refers to a research where a researcher uses more than one form of research design in collecting and analysing data (Bogdan and Villiger, 2010) Mixed research design looks at integrating qualitative and quantitative forms of

research design (Brannen, 2017). It looks at a multiple of ways in exploring a research problem (Ravitch and Riggan, 2017). Benefits of applying a mixed research design is that both quantitative and qualitative research designs, in combination, provide a better understanding of a research problem (Morse, 2016). A mixed research design takes advantage of the strengths of both methods and minimises the weaknesses within a research (Morse, 2016). The use of mixed methods will assist in better explaining the results obtained under only one form of research design and similarly enhance the results of the primary method (Brannen, 2017).

Mixed methods allows for a broad and in-depth understanding and corroboration of the results from the data being analysed and thus allowing a strengthened conclusion (Brannen, 2017). The application of mixed methods will provide the researcher with credible findings and improve the usefulness of the findings (Bryman, 2006). The use of mixed methods will additionally provide context to findings where qualitative methods will seek to contextualise understanding of the broad relationship between the variables from a quantitative analysis (Bryman, 2006). This will therefore provide an illustration of the quantitative from the qualitative methods (Bryman, 2006). The use of mixed methods will furthermore provide confirmation and/or new discoveries as well as any diversity views that may come through the research (Bryman, 2006).

3.5 Population

Target population refers to the entire group of individuals or objects in which researchers are interested in generalising the conclusions. The target population usually has varying characteristics and it is known as the theoretical population (Saunders *et al.,* 2012). An accessible population is a population on which the researcher can apply his conclusions from the study (Creswell and Poth, 2017). This is also known as the study population (Smith, 2017).

The population of the research was derived from the new car dealerships that are most likely to be affected by the levying of carbon taxes by government. The

Polokwane Municipality Integrated Development Plan (2017) indicates that the city has 20 new car dealerships. Where possible, the entire population will be tested, otherwise a sample of 10 of the new car dealerships was tested.

3.6 Sampling and sampling size

Research methods refer to various methods that a researcher uses to obtain the data needed for the research. These methods are applied to a specific sample that the researcher has selected. Sampling refers to selection of items in a population and on which tests are to be performed to obtain results (Saunders *et al.,* 2012). Leedy and Ormond (2014) define a sample as a subset of a population which has actually been investigated by a researcher whose characteristics are representative of the entire population.

For purposes of this study, non-probability sampling and in particular judgemental sampling was used. Non-probability sampling is defined as a case where probability of including every element of the population in a sample is unknown (Leedy and Ormond, 2014). Types of non-probability sampling are judgemental sampling, quota sampling and reliance on available subjects (Górny and Napierała, 2016). Non-probability was selected because it is less complicated and allows the researcher judgement to be used in selecting individual items for using in the study (Lampard and Pole, 2015).

The 10 new car dealerships that were selected represent 50% of the population and can be said to be representative of the entire population and as thus the findings will be representative of the population. The approach in the sampling is that the items within the population have the same characteristics and traits and in this regard all the items are of the new car sales dealerships (Lampard and Pole, 2015).

3.7 Data collection

Data collection refers to the way the researcher intends to obtain data for the research that is being conducted (Saunders *et al.,* 2012). For purposes of this study, structured data will be collected in the following manner:

Interviews

Interviews were conducted with the respective participants and in particular affected participants. A semi-structured questionnaire was prepared in the business language and sent to the respective participants where specific appointments cannot be secured (Patten, 2016). The questionnaire was set out in a manner that allowed the researcher to achieve the objectives of the study.

The characteristics of the questionnaire were as follows according to Patten (2016):

- Each participant can document his/ her responses on the questionnaire where a face to face interview cannot be secured as a face to face interview may be expensive
- Respondents were anonymous
- The format was standard for all participants and was not be influenced by the mood of the researcher.
- The questionnaire allowed for documentation of any additional information that may be of assistance in understanding some of the responses provided in the questionnaire.

3.8 Data analysis

To analyse the data that has been obtained in conducting this research the following method will be used:

Comparative analysis

With comparative analysis the researcher investigates in a focused and systematic manner two or more items in-depth and compares them to each other to find the reasons for differences or similarities (Glaser, 2017). Comparative analysis can compare small individual cases or a range across national borders and time (Saunders *et al.,* 2012).

Available research and documents

Recent available research that has been conducted was used in obtaining data (Miles, Huberman and Saldana, 2013). This included research that has been conducted in countries that have already implemented a carbon tax system and other applicable research documentation for research conducted in the Republic.

A structured data collection approach refers to the way data are going to be represented and accessed and for purposes of this study a structured data collection will be used (Creswell and Poth, 2017). The above data analysis techniques allowed the researcher to analyse findings from the research and deduce possible recommendations.

3.9 Validity

Validity in research speaks to the accuracy of the information to be or being collected by the researcher (Jackson, 2015). It seeks to validate the information contained and collected in the research by having the findings truly representing the phenomenon being measured (Neuendorf, 2016). Validity is an indication that if another researcher is to perform the same research and applying the same assumptions and measures as those used by the original researcher, that the other researcher would achieve the same results as the original research and in that way a research is said to be valid (Glaser, 2017). Validity assists a researcher in determining the type of tests or measurement instruments to apply in data analysis for the most accurate results in the research (Neuendorf, 2016).

Validity can be internal or external. Internal validity looks at the influence of the independent variable in the study on the results of the study (Patten and Newhart, 2017). It focuses on how the independent variable can possibly manipulate the effects of the study (Sekaran and Bougie, 2016). Internal validity factors can be minimised by having a clear standard set of instructions when carrying out the study (Sekaran and Bougie, 2016). Meanwhile, external validity looks at the extent to which the study conducted by the researcher can be applied or can be influenced by general factors around which the study was undertaken (Patten and Newhart, 2017). External validity factors can be minimised by the researcher having a more natural setting when conducting the study (Sekaran and Bougie, 2016).

There are two main types of validity in research, content validity and criterion validity. Content validity focuses more on the appearance of the tool to be used in the test, whereby criterion validity focuses on the measurement relation to other measures (Neuendorf, 2016). Content validity is further broken down into two aspects, face validity which speaks to the appearance of the test, whether the test appears to be testing what it should be testing, and construct validity which speaks to the test carrying the theoretical aspects of a study (Neuendorf, 2016). Criterion validity is also broken further into two aspects, concurrent validity which looks at whether there are other existing similar measures in place and predictive validity which looks at whether the test is able to predict later performance in relation to the criterion (Patten and Newhart, 2017).

3.10 Reliability

Reliability looks at the consistency of results in a research; it focuses on the degree of the assessment tool being able to produce stable, repeatable and consistent results (Jackson, 2015). Reliability aims to evaluate that the results of the study fulfil the aim and objectives of the study and ensures that the results have not been affected by any other possible variable factors (Jackson, 2015). It is a way of assessing the quality of the measurement procedures and instruments that are used in analysing data (Neuendorf, 2016). In order for the results of the study to be considered valid, they must first be considered reliable (Glaser, 2017). It must

however, be noted that it is unlikely that the results of a test will be the same despite if a strong positive correlation is expected and this will be an indication of reliability (Neuendorf, 2016).

Reliability has two categories: internal reliability and external reliability. Internal reliability focuses on the consistency of the measure within itself and external reliability focuses on the way the measure varies from one use to the other (Patten and Newhart, 2017). Reliability can further be broken down into test-retest and inter-rater which focuses on the external form of the reliability. A test re-test form of reliability measures the reliability of a test over time. A test re-test allows a researcher to perform a test today and the same or another researcher to perform the same test at a later date, applying the same assumptions in the initial research, the researcher should be able to reach the same conclusions (Neuendorf, 2016). It focuses on the same people however, at different times (Glaser, 2017). An inter-rater form of reliability focuses on the degree at which different raters give consistent estimates of the same behaviour (Glaser, 2017). It focuses on different people for a test run at the same time (Neuendorf, 2016). The internal form of reliability is broken down further into a split half method. The split half method focuses on the evaluation of the equal contribution of all parts to test what is being measured (Jackson, 2015).

3.11 Ethical considerations

All researchers should be aware of the importance of ethics in a research (Jurkiewicz and Giacalone, 2016). The ethics element in a research does not only affect the researcher, it also affects the individuals upon which the research is conducted. These individuals have rights that have to be protected and they need to be aware of these rights (Jurkiewicz and Giacalone, 2016). Ethical issues in this study included the right to anonymity and confidentiality, right to privacy, and respect of persons affected. The following ethical matters were considered in the carrying out of the research:

3.11.1 Ethical clearance

Ethical clearance was obtained from the University's Research Ethics Committee in relation to the research to be undertaken.

3.11.2 Informed consent and voluntary participation

The participants were informed that participation in the study is voluntary and that there is no compulsory participation. Participants can withdraw at any point in time during the course of the study.

3.11.3 Privacy, confidentiality and no harm

The identity of the participants has not been named in assessing and analysing the results of the study for confidentiality purposes as tax matters can be sensitive.

3.11.4 Fair selection of participants

The participants from the study were selected from the new car sales dealerships that are operative in Polokwane city. With the selection, the researcher has ensured that the selected participants include some of the listed motor vehicle entities on the Johannesburg Stock Exchange.

3.11.5 Permission to conduct research

Permission was not required to be obtained for the research.

3.11.6 Data integrity and safe storage

The data that was collected from the participants was kept on a computer and which required a password for access. The information was only shared with the research analyst of the university who was assisting with the analysis of the collected data. He also required a password to access the collected information.

Ethics are the norms and standards for conduct that distinguish right from wrong (Prasad, Kumar and Kapoor, 2017). Ethics assist in identifying the difference between acceptable and non-acceptable behaviours (Prasad *et al.,* 2017). The study was conducted in a manner that minimises or eliminates all the potential risks (Prasad *et al.,* 2017).

3.12 Conclusion

A qualitative research design provided the researcher with the ability to look deeper into the subject matter (Smith, 2017). The interview sessions that were conducted by the researcher, was conducted using a semi structured questionnaire, which allowed the researcher to gather the necessary information and findings and provide the recommendations on the subject matter (Creswell and Poth, 2017). The researcher put safeguards in place to minimise and eliminate anti- ethical dilemmas that arose during the study and when conducting interviews. The mixed research methods, enabled the researcher to use the strengths of both the qualitative and the quantitative research designs in ensuring that the data is analysed correctly and that appropriate recommendations are provided based on the findings that arose (Morse, 2016).

CHAPTER 4

PRESENTATION AND ANALYSIS OF THE FINDINGS

4.1. Introduction

This chapter is an analysis and presentation of data collected from sale managers in the motor dealership around the Polokwane, Limpopo province, South Africa. Names of companies were replaced with Company A to J for confidentiality, as tax issues remain very sensitive. The research method informed the analysis and presentation of this research as indicated in previous Chapter. The data are presented using descriptive statistics with the aim of organising and presenting data in a meaningful manner. The presentation and analysis of the results in this study is placed into three

categories according to the biographical information of the motor dealership company, and descriptive results according to the three objectives of the study are presented in a consecutive manner, with descriptive results on general questions regarding the readiness of new car dealerships within the Polokwane area for carbon taxes that will possibly be levied by government. In addition, analysis is performed to help condense the mass of collected data into interpretable results to enable the researcher to study the relations of the results to the research problems and be able to draw conclusions

4.2. Data Analysis

The analysis of data is presented in this section.

4.2.1 Questionnaire

The questionnaire developed for the purpose of this study and distributed for data collection contained three sections. The first (A) focused on the biographical information of motor dealership company managers, second (B) section addressed the awareness and knowledge of carbon tax and the last section (C) focused on the implementation and preparedness of motor dealership in carbon tax. Responses from these items regarding the readiness of new car dealerships within the Polokwane area for carbon taxes that will possibly be levied by government measures were in the form of a four-point Likert scale, with 1= *strongly disagree*, 2= *disagree*, 3= *agree* and 4= *strongly agree*. Respondents were asked to indicate with an X the most appropriate answer to them. Section B of the questionnaire comprised categorical *yes* or *no* answers and a 3-point Likert scale of questions ranging from 1= *agree* to 3= dis*agree* as per section one above in which participants were also instructed to mark their answer with an X. The data from the completed and collected questionnaires were first captured in a *Microsoft Excel* spreadsheet for coding purposes (Floyd & Fowler, 2009; De Vos, Strydom, Fouche and Delport, 2011) to convert answers into numbers.

4.2.2 Statistical analysis

The researcher was assisted by a University statistician who is an expert in quantitative research. The expert provided assistance in various areas of the study. First, the statistician provided guidance on the applicable research design as well as

the design and construction of the data collection instrument. When the data were ready for analysis, the statistician provided guidance on choosing the most appropriate data analysis methods as well as how to use the SPSS software to analyse the data. Furthermore, the statistician also assisted by double-checking to see whether the interpretations done by the researcher were accurate. After the questionnaires were returned, they were screened to eliminate those that were incomplete as well as those in which the same question was answered throughout, which indicated that some of the respondents had not read the questions. This procedure was immediately followed up with the capturing of the data on a Microsoft Excel computer package. The Excel document was then imported into the IBM SPSS Statistics Version 25 where it was coded in preparation for data analysis. The data analysis involved several rigorous statistical tests such as reliability tests, descriptive statistics and inferential statistics**.** A comprehensive diagrammatic representation of the research path adopted for data analysis in the current study is also presented in next section.

4.2.3 Descriptive statistics

With the use of SPSS, the researcher analysed the data that had already been captured. 'Descriptive statistics' is a joint term for various statistical techniques used to systematise and recapitulate data meaningfully (Pietersen & Maree, 2017). They are presented from different variables in the questionnaire, measuring the readiness of new car dealerships within the Polokwane area for possible carbon taxes that will be levied by government. For each category of variables, the frequencies and percentage output from a total of the respondents were determined. In some instances, there were no answers provided, and these were treated as 'missing' values during analyses. The data analysed from descriptive statistics are presented using frequency distribution tables, pie and bar charts.

The last section of the analysis provides descriptive statistics of business information, crafted from the number of years in industry experience and the type of managerial position each of the respondents held in the company, as well as the number of years the company had been in existence and the number of its employees.

4.2.4 Biographical information of the respondents

Section A of the questionnaire elicited information pertaining to the biographic characteristics of respondents. The section addressed the following attributes pertaining to the respondents:

- Gender of head of respondents
- Age of head of respondents (years)
- Highest qualification
- Name of motor dealership
- Position of the respondents
- Years of experience of working
- Years of experience of working in the motor industry

Each of these characteristics will now be discussed.

4.2.4.1 Gender of the respondents

The frequencies and percentages pertaining to the respondents' gender are illustrated in Table 1 and Figure 1 below;

Table 1: Gender of the respondents (n=10)

	Frequency	Percent
Male	10	100

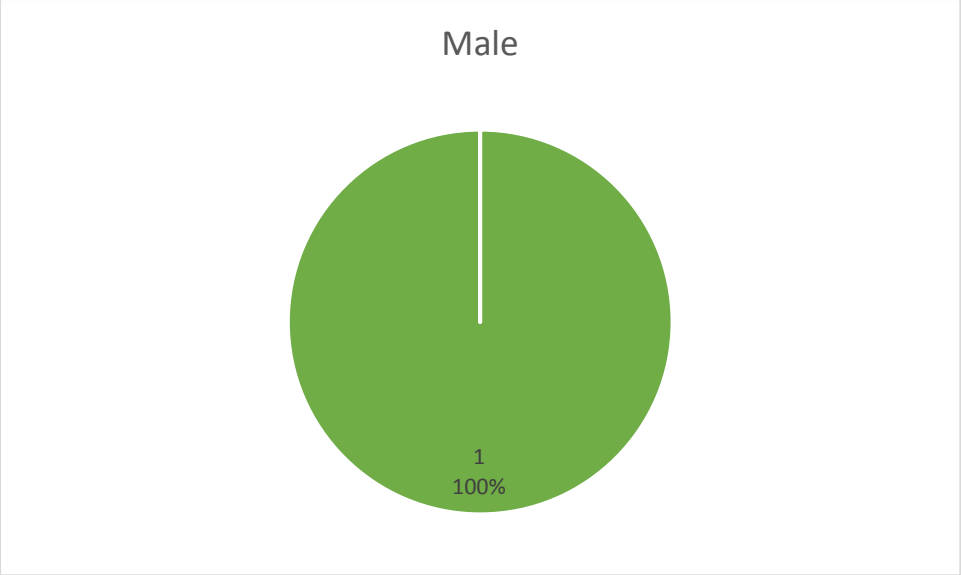


Figure 1: Gender of the respondents (n=10) (Source: Researcher)

The gender distribution of the respondents is shown in Figure 1 above. All respondents that took part in this study were males (100%), sale managers. This indicates that females are still not represented in this field of the motor industry.

4.2.4.2 Age group of respondents

For the purposes of data analysis, the frequencies and percentages pertaining to the ages of respondents were grouped as illustrated in Table 2 and Figure 2, respectively.

Table 2: Frequencies and Percentages of the Age Groups of Respondents (n=10)

	Frequency	Percent
30-39 years	6	60
40-49 years	4	40
Total	10	100

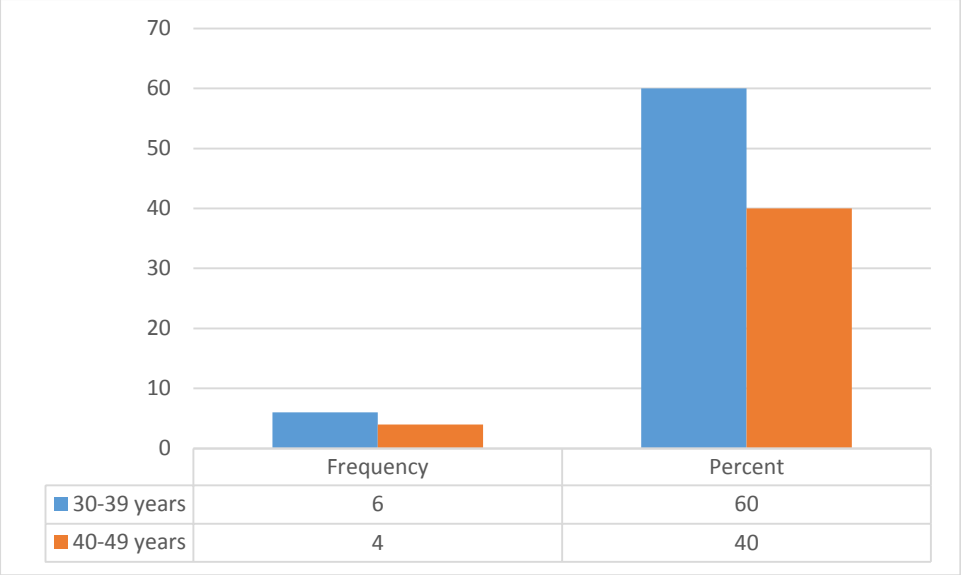


Figure 2: Frequencies and Percentages of the Age Groups of Respondents (n=10) (Source: Researcher)

The age distribution within the target population (Table 1; Figure 1) is interesting. A majority (60%: n=6) of the respondents were aged between 30 and 39 years while approximately 40% (n=4) were aged between 40 and 49 years. There were no respondents under the age of 30 or above 50. This indicates that for an individual to be in the sales manager position, they should have gained some experience and yet still be relevant to the ever changing motor vehicle industry.

4.2.4.3 Highest qualification

The frequencies and percentages pertaining to the respondents' highest qualification are illustrated in Table 3 and Figure 3 below:

Table 3: Frequencies and Percentages of the Highest Qualification of Respondents (n=10)

	Frequency	Percent
National Diploma	1	10
Bachelor's Degree	6	60
Honours Degree	3	30

Total	10	100

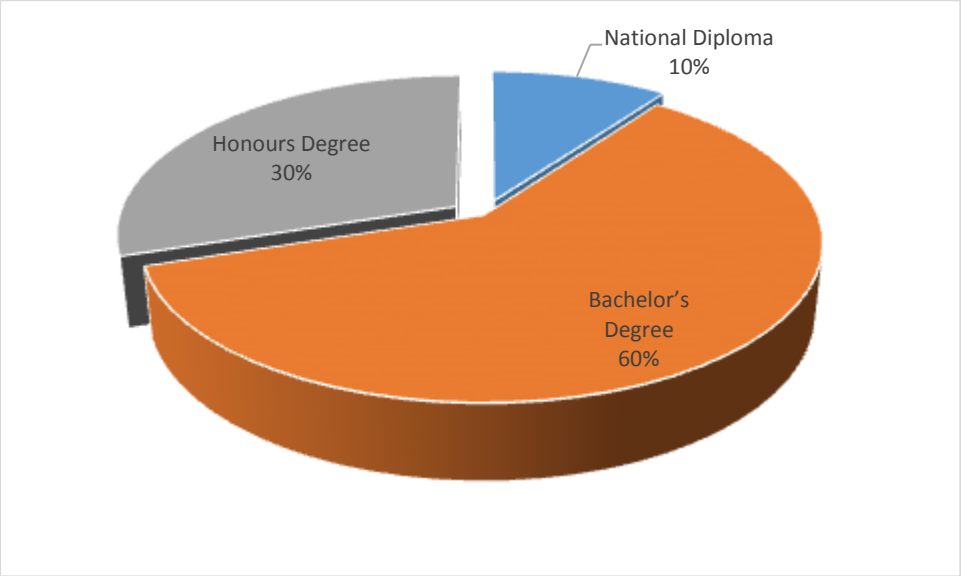


Figure 3: Frequencies and Percentages of the Highest Qualification of Respondents (n=10) (Source: Researcher)

The above pie chart indicates the education levels for the respective respondents. The figure depicts that at minimal (60%: n=6) to occupy the sales manager position should have a bachelor's degree with the exception of one (10%: n=1) respondent who has a national diploma. The pie chart indicates that there must be some level of standard know-how for an individual to be able to operate a new car sales dealership. Furthermore, three (30%: n=3) of the respondents have taken a step further in equipping themselves and have obtained honours degrees. This should indicate that these respondents know-how will be above standard in relation to the managing and running of the new car sales dealership and possibly the understanding of the functioning of carbon taxes.

4.2.4.4 Name of the motor dealership

For the purposes of data analysis, the frequencies and percentages pertaining to the motor dealership respondents are illustrated in Table 4.

Table 4: Frequencies and Percentages of Motor Dealership Respondents (n=10)

	Frequency	Percent
Motor Dealer A	1	10
Motor Dealer B	1	10
Motor Dealer C	1	10
Motor Dealer D	1	10
Motor Dealer E	1	10
Motor Dealer F	1	10
Motor Dealer G	1	10
Motor Dealer H	1	10
Motor Dealer I	1	10
Motor Dealer J	1	10
Total	10	100

The table above depicts the motor dealerships that were participants in the research, however, for confidentiality purposes the names of the dealership could not be named and have therefore been renamed company A to J. Ten (100%: n=10) dealerships participated in the study. These are based in the Polokwane region, which in total has more or less 20 new car sales dealerships. The ten new car sales dealerships that participated in the study can be said to be a proximity representation of the new car sales dealerships within the Polokwane region. The participants include motor dealers that are listed on the Johannesburg Stock Exchange.

4.2.4.5 Position

The frequencies and percentages pertaining to the respondents' position are illustrated in Table 5 and Figure 5 below:

Table 5: Frequencies and Percentages of the Position of Respondents (n=10)

	Frequency	Percent
Sales Manager	10	100

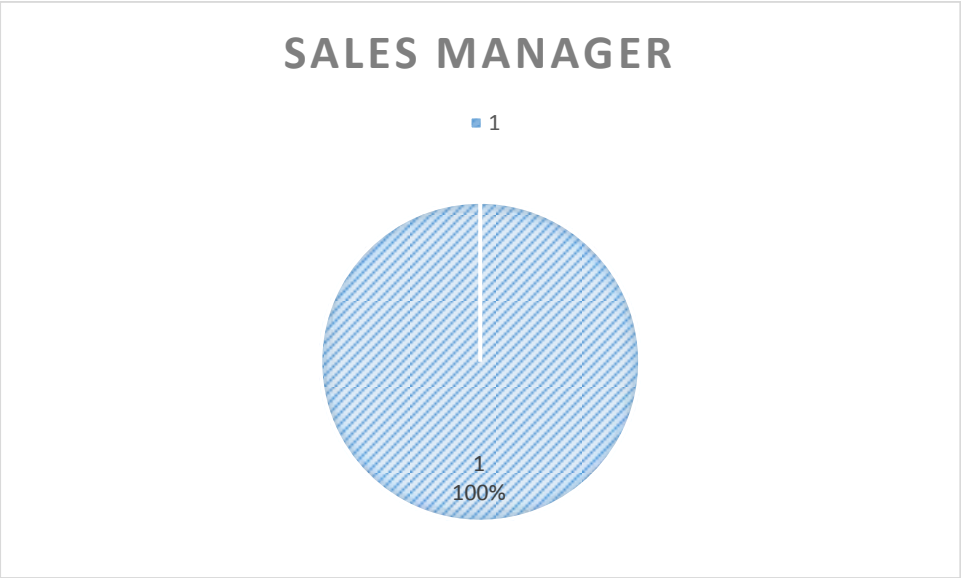


Figure 4: Frequencies and Percentages of the Position of Respondents (n=10) (Source: Researcher)

The pie chart above depicts the individuals that were interviewed representing the various new car sales dealerships. For all the dealerships the sales manager was the respondent on behalf of the motor dealership. Ten (100%: n=10) sales managers participated in the research. The sales manager is an individual that is responsible for sale of all the new cars and thus the individual who needs to have the necessary understanding of the matters that affect sales of new cars and thus they were selected to represent the motor dealership. The sales personnel, although they are expected to have the necessary knowledge too, however when uncertain about a particular matter relating to a sale of a new vehicle, they would seek clarity from the new car sales manager who will have to be able to resolve the uncertainty.

4.2.4.6 Years of experience of working

For the purposes of data analysis, the frequencies and percentages pertaining to years of working experience of respondents are illustrated in Table 6 and Figure 6 respectively.

Table 6: Frequencies and Percentages of Years of working Experience of Respondents (n=10)

	Frequency	Percent
5-10 years	4	40
11-15 years	4	40
Above 15 years	2	20
Total	10	100

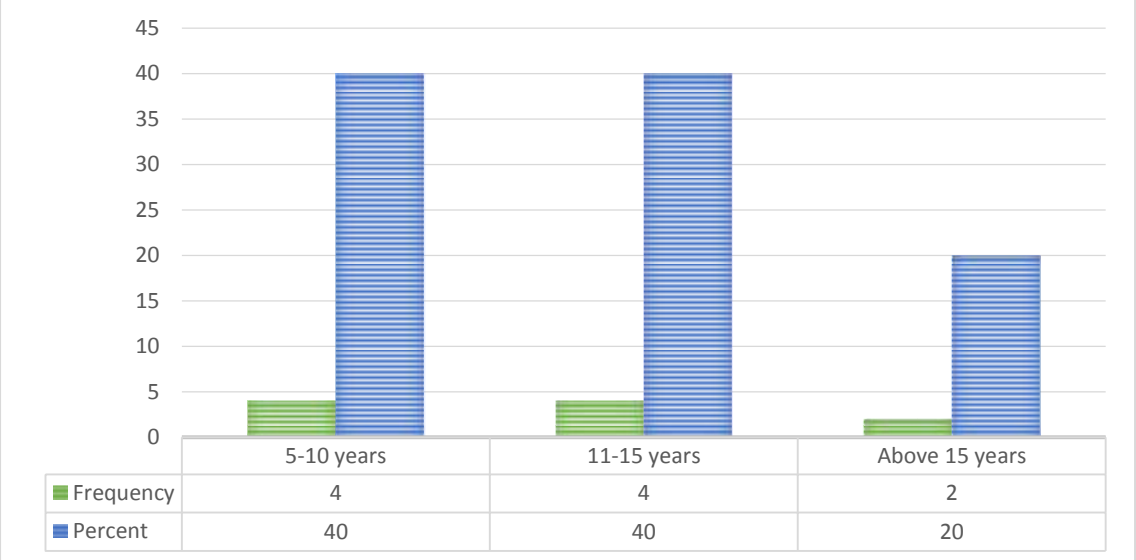


Figure 5: Frequencies and Percentages of Years of working Experience of Respondents (n=10) (Source: Researcher)

Figure 6 above depicts the distribution of the years of working experience of the respondents in the research. The figure indicates that for an individual to become a sales manager, the relevant working experience must be in place. More than half of the respondents (60%: n=60) had at least more than ten years of working experience

and of the 60%, 20% (n=2) had more than 15 years of working experience, and only 40% (n=4) of the respondents had less than 10 years of working experience.

4.2.4.7 Years of experience of working in the motor industry

The frequencies and percentages pertaining to the respondents' position are illustrated in Table 7 and Figure 7 below:

Table 7: Frequencies and Percentages of Years of Experience in the Motor Vehicle Industry of Respondents (n=10)

	Frequency	Percent
1-2 years	1	10
5-6 years	1	10
Above 6 years	8	80
Total	10	100

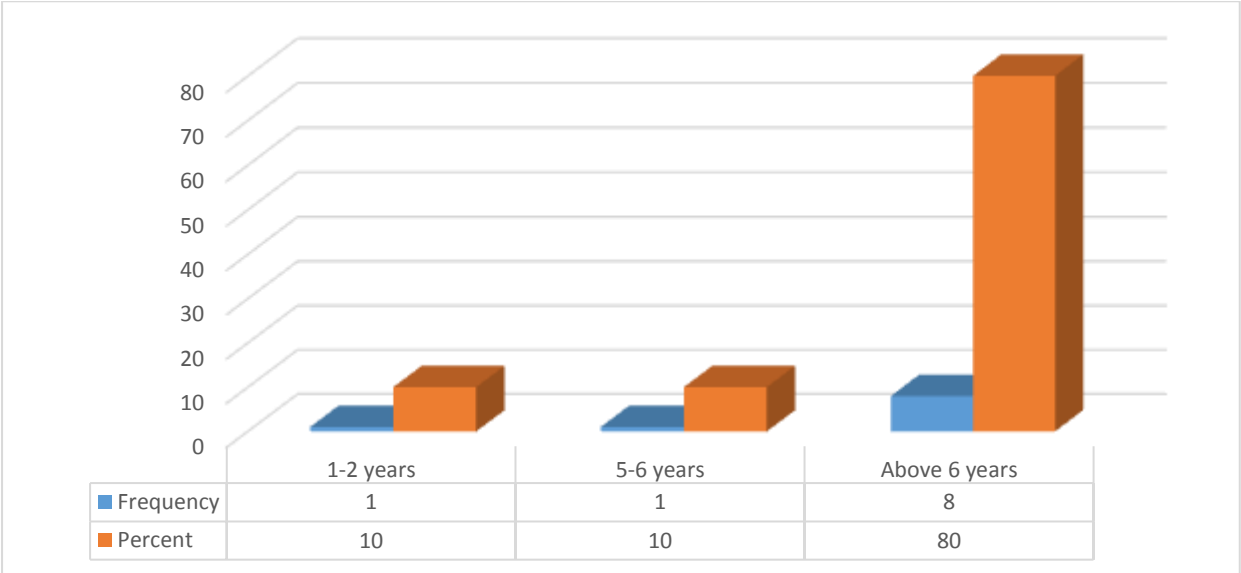


Figure 6: Frequencies and Percentages of Years of Experience in the Motor Vehicle Industry of Respondents (n=10) (Source: Researcher)

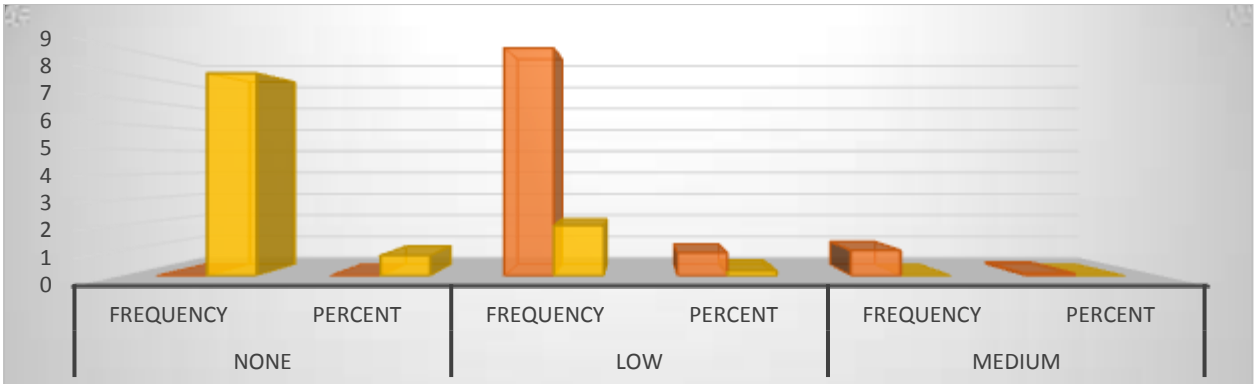
The figure above indicates the distribution of working experience in the motor industry and from the above figure one can deduce that for respondents to be in their positions, they must have had a relative numbers of years of working experience within the motor vehicle industry. The figure indicates that 80 % (n=8) of the respondents had more than six years of working experience within the motor vehicle industry. With only 20% (n=2) of the respondents having less than six years of working experience in the motor vehicle industry. Of the 20% (n=2), 10% (n=1) with more than five years of working experience in the motor vehicle industry and the other 10% (n=1) with less than two years.

4.2.4.8 Knowledge and experience of carbon tax in new car sales dealerships

For the purposes of data analysis, the frequencies and percentages pertaining to knowledge and experience of carbon tax in new cars sales dealerships are illustrated in Table 8 and Figure 8 respectively.

Table 8: Frequencies and Percentages of Knowledge and Experience of Carbon Tax of Respondents (n=10)

	None		Low		Medium		Total
	Frequency	Percent	Frequency	Percent	Frequency	Percent	
Knowledge	0	0	9	90%	1	10%	100%
Experience	8	80%	2	20%	0	0	100%



	None		Low		Medium	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Knowledge	0	0	9	90%	1	10%
Experience	8	80%	2	20%	0	0

Figure 7: Frequencies and Percentages of Knowledge and Experience of Carbon Tax of Respondents (n=10) (Source: Researcher)

The bar graph above indicates the know-how and understanding of carbon tax within new car sales dealerships. From the figure above 90% (n=9) of the respondents indicated to have minimal understanding of the carbon tax concept and only 10% (n=1) indicated that there is some knowledge of carbon tax on new car sales. Similarly, of the 90% (n=9) only 20% (n=2) indicated that they have very minimal experience in relation to carbon tax. And of the 10% (n=1), none of them had any form of experience with carbon tax. More disconcerting is the 80% (n=8) that have no experience at all on carbon tax. Interesting is that there is no respondent who has indicated to have a good level of understanding of the carbon tax concept.

4.3 Reliability testing

It has to be appreciated that there are several statistical indexes that may be used to measure internal consistency. Examples include the Average Inter-Item correlation, Average Item Total Correlation, Split-Half Reliability, and the Cronbach's alpha (Wells and Wollack, 2003:4). For the purposes of this study, the Cronbach's alpha was adopted as the measure of internal consistency for the measurement scale. According to (Malhotra, 2011), the Cronbach alpha provides a measure of the extent to which the items on a measurement scale or test provide consistent information. Cronbach's alpha is often considered a measure of item homogeneity, that is, large

alpha values indicate that the items are tapping a common domain. The scale in Cronbach's reliability test ranges from 0 to 1. Scores that are close to 1 indicate that the instrument has a high reliability, while scores close to 0 indicate that the reliability of the instrument is very low (Wells and Wollack, 2003:4). Most researchers require a reliability of at least 0.7 before they can use the instrument. In this study, the Statistical Package for the Social Sciences (SPSS Version 25) was used to test the reliability of the measuring instrument. Once again, Cronbach's alpha test proved to be both appropriate and handy as it provided a summary of inter-correlations that existed among the items on the readiness of new car dealerships within the Polokwane area for possible carbon taxes that will be levied by government. These are the Internal consistency reliability values of scales.

In order to determine the reliability and validity of the data collection instruments used in this study, Cronbach's alpha was used. Zikmund, Babin, Carr, and Griffin (2013), stipulate that "coefficients less than 0.6 are considered poor, while coefficients greater than 0.6, but less than 0.8 are considered acceptable and coefficients greater than 0.7 are considered good". The table below shows Cronbach's alpha for the study variables and for all items coefficient is greater than 0.7 which is good as stipulated by Zikmund et al. (2013).

Table 4.3: Reliability testing

	Cronbach 'alpha	Average inter-correlation items	No. item
Awareness and knowledge of carbon tax	0.715	0.523	8
Implementation and preparedness of carbon tax	0.651	0.166	5
Overall	0.683	0.344	13

Each component (as categorised by documentation provided) was examined for internal reliability using the Cronbach Alpha. Table 4.3 shows Cronbach Alpha of competency of awareness and knowledge of carbon tax and implementation and

preparedness of carbon tax are 0.715 and 0.651 respectively, which are acceptable because they are greater than required Cronbach' alpha of 0.70.

4.3.1 Awareness and Knowledge

Section B of the questionnaire was designed to determine the awareness of new car dealerships within the Polokwane area for possible carbon taxes that will be levied by government. Questions in this section aimed to determine the readiness of new car dealerships within the Polokwane area for possible carbon taxes that will be levied by government, namely:

- Section B: Awareness and knowledge (Items B9, B10, B11, B12, B13, B14, B15 & B16)

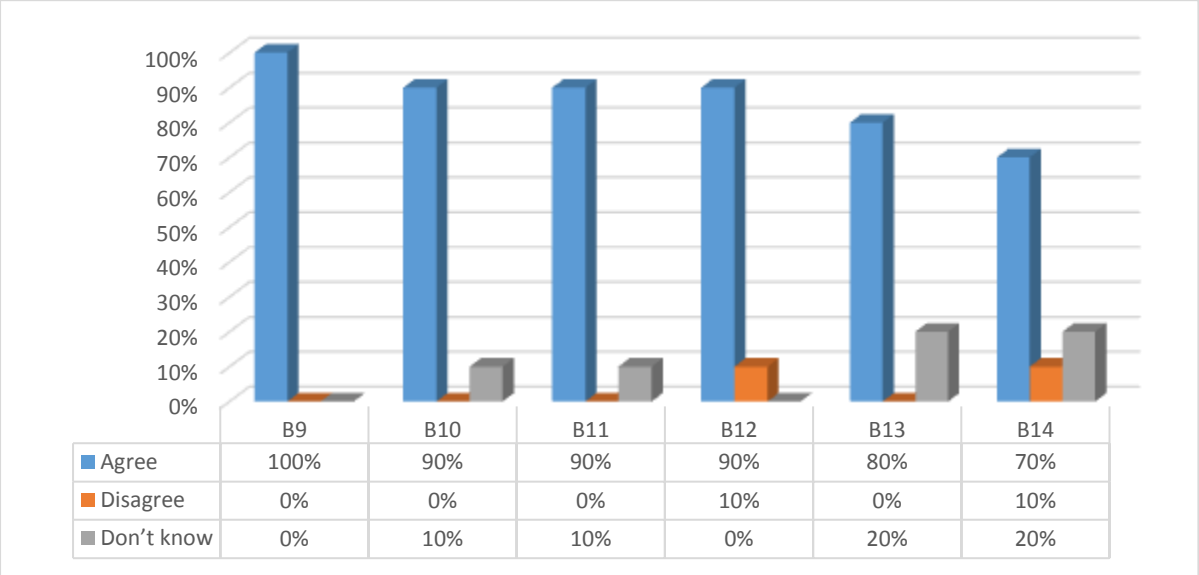
Tables below are statistical summary of the responses. Descriptive statistics, namely percentages were used to analyse the data. In the information presented in tabular form, the numbers 1, 2 and 3 represent agree, disagree and don't know, respectively. The frequencies are presented both numerically and as percentages. To determine the readiness of new car dealerships within the Polokwane area for possible carbon taxes that will be levied by government, the frequencies and percentages for all 13 items were placed in a rank order.

Table 4.3.1.1: Statistical Summary of Responses on Awareness and Preparedness of Respondents (n=10)

Item.No	Statements	Agree	Disagree	Don't know	Total
B9	I am aware of carbon tax	100%	0%	0%	100%
B10	I am aware that it came into effect in the motor vehicle industry on new car sales in 2010.	90%	0%	10%	100%

B11	Our company complies with all carbon excise tax legislation and regulations applicable to motor vehicles.	90%	0%	10%	100%
B12	The carbon excise tax for motor vehicles is adequately priced and accurately reflects the associated damage cost from motor vehicle carbon emissions.	90%	10%	0%	100%
B13	The implementation of carbon tax has affected corporate social investment policy and strategy of the company.	80%	0%	20%	100%
B14	I am aware that the carbon tax is not a new concept as there have been other forms of levies, such as the electricity levy for any form of item that was and is	70%	10%	20%	100%

	seen to be causing harm to the environment				



	B9	B10	B11	B12	B13	B14
Agree	100%	90%	90%	90%	80%	70%
Disagree	0%	0%	0%	10%	0%	10%
Don't know	0%	10%	10%	0%	20%	20%

Figure 4.3.1.1: Statistical Summary of Responses on Awareness and Preparedness of Respondents (n=10) (*Source: Researcher*)

The figure above depicts the summary of responses in ranking. B9 indicates that 100% (n=10) were aware of the concept of carbon tax. However, in B11 only 90% (n=9) could confirm that they know that it has been implemented in their dealership. With the exception of only 10% (n=1) which was not certain about the implementation within their dealership. Similarly, B10 indicates that 90% (n=9) knew when the carbon tax came into effect, with the exception of 10% (n=1) who indicated that they did not know. B12 indicates the adequacy of the pricing of the carbon tax, where 90% (n=9) agreed that the pricing is adequate, however, 10% (n=1) indicated that they disagreed. B13 looks at the effect of the implementation of carbon tax on corporate social investment. 80% (n=8) indicated that they agree that surely to some extent the tax has affected the corporate social investment, however, 20% (n=2) indicated that they are not certain about its effect on the corporate social investment. On B14, 70% (n=7) indicated that they are aware of similar taxes within South Africa.

However, 10% (n=1) indicated that they did not know and 20% (n=2) indicated that they were not certain if there were similar taxes in South Africa.

Complexity of Taxes in South Africa

For the purposes of data analysis, the frequencies and percentages pertaining to complexity of taxes is South Africa are illustrated in Table 2 and Figure 2 respectively.

Table 4.3.1.2: Frequencies and Percentages of Complexity of Taxes in South Africa of Respondents (n=10)

	Frequency	Percent
Yes	9	90
No	1	10
Total	9	90

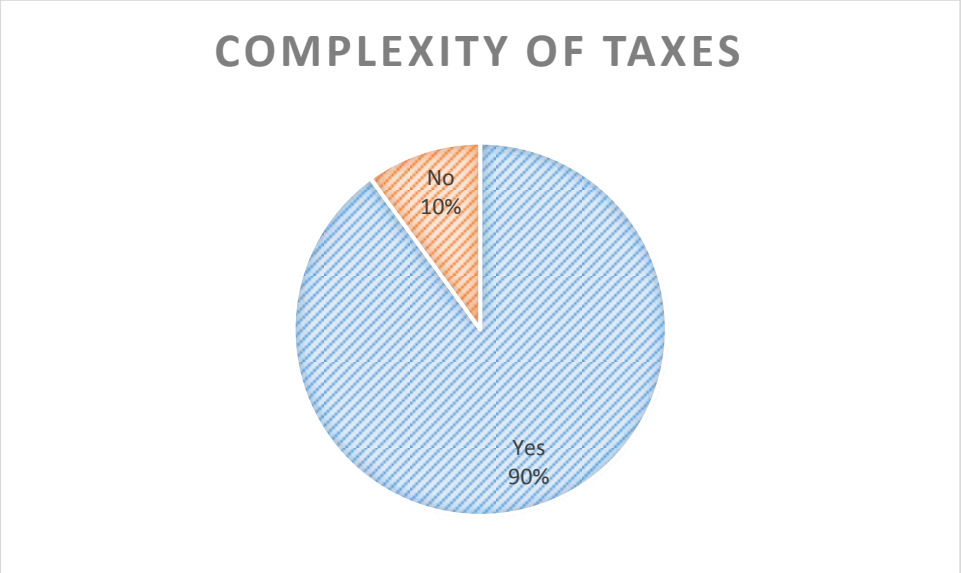


Figure 4.3.1.2: Frequencies and Percentages of Complexity of Taxes in South Africa of Respondents (n=10) (Source: Researcher)

The pie chart above indicates the opinions and perspective of the respondents on the complexity of taxes in South Africa. 90% (n=9) of the respondents indicated that in their opinion South African taxes are complex. There is one exception of 10% (n=1) who indicated that they do not view the South African taxes as complex.

Below is a summary of responses from the respondents in relation to their view on the complexity of taxes in South Africa.

Table 4.3.1.3: Summary of Responses in relation to the view of the respondents on the complexity of taxes in South Africa

Not necessary, however they are not encouraging economic growth due to the number of them and the expensiveness.
Taxation is South Africa is quite complex
Taxes in South Africa are complex
Yes they are complex, not easy to grasp

The effect of complexity of taxes on the carbon tax in the motor industry

The frequencies and percentages pertaining to the respondents' view on the effect of the complexity of taxes on the carbon tax in the motor industry are illustrated in Table 3 and Figure 3 below:

Table 4.3.1.4: Frequencies and Percentages of the Effect of Complexity of Taxes on Carbon Tax in the Motor Industry of Respondents (n=10)

	Frequency	Percent
Yes	10	100

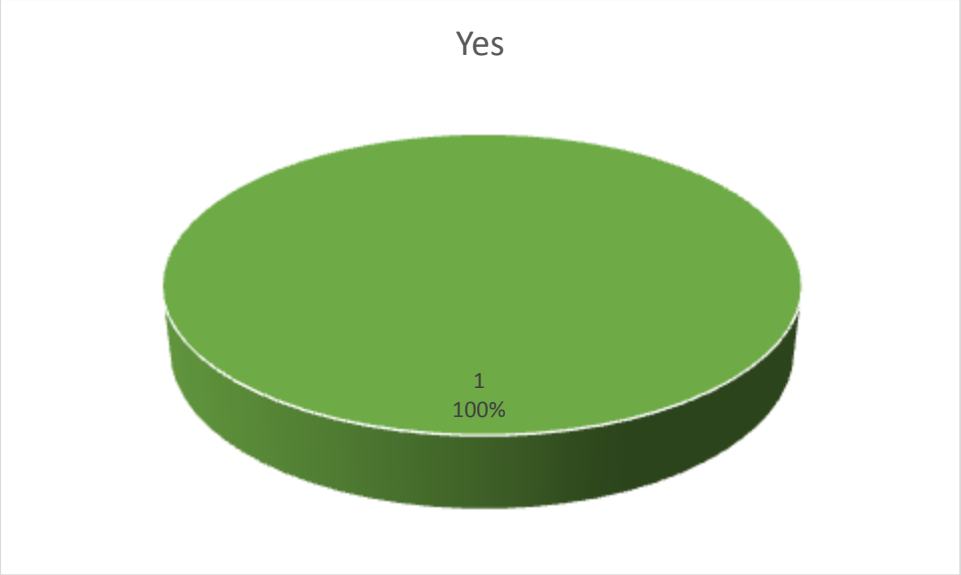


Figure 4.3.1.4: Frequencies and Percentages of the Effect of Complexity of Taxes on Carbon Tax in the Motor Industry of Respondents (n=10) (Source: Researcher)

The figure above indicates that 100% (n=10) of the respondents agree that the complexity of the South African taxes places a burden on the carbon tax within the motor industry.

Below is a summary of responses with regards to the effect of complexity of taxes on carbon tax in the motor industry.

Table 4.3.1.5: Summary of Responses in relation to the effect of complexity of taxes on carbon tax in the motor vehicle industry

The calculation thereof must be made at the point of manufacturing which is based on possible future consumption. Yes it does
Yes, the professional fees have to be paid to require assistance with the compilation of the required documentation and payment of the tax.
Yes. With the already complex tax, a more complex aspect is added being the carbon tax which has to be applied on tax credits with the already difficult taxes

4.3.2 Implementation and Preparedness

Section C of the questionnaire was designed to determine the preparedness of new car dealerships within the Polokwane area for possible carbon taxes that will be levied by government. Questions in this section elicited to determine the readiness of new car dealerships within the Polokwane area for possible carbon taxes that will be levied by government, namely:

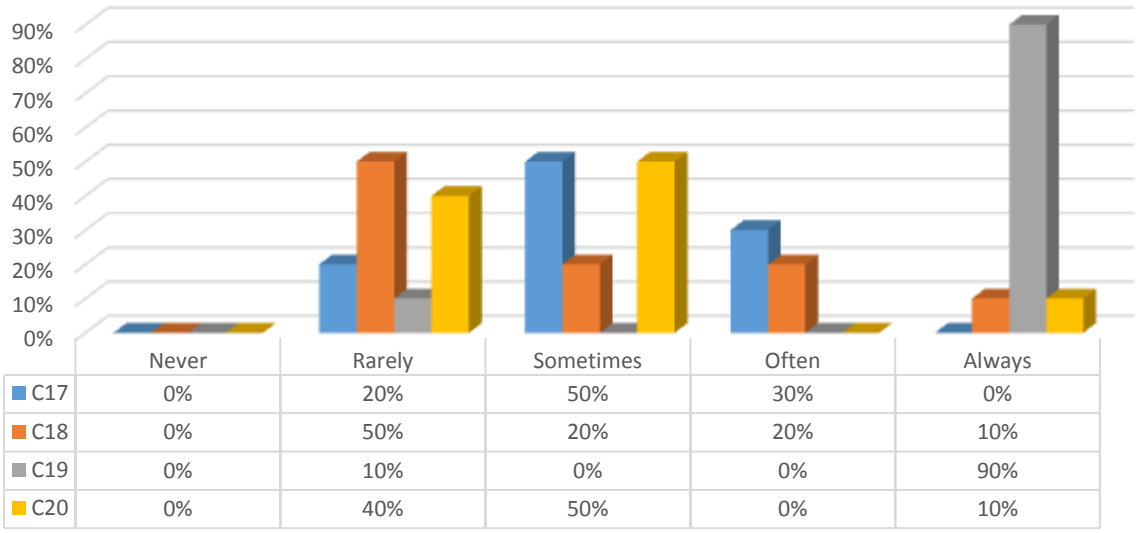
- Section C: Implementation and preparedness (Items C17, C18, C19, C20, C23).

Tables below are statistical summaries of the responses. Descriptive statistics, namely percentages were used to analyse the data. In the information presented in tabular form, the numbers 1, 2, 3, 4 and 5 represent never, rarely, sometimes, often and always, respectively. The frequencies are presented both numerically and as percentages. To determine the preparedness of new car dealerships within the Polokwane area for possible carbon taxes that will be levied by government.

Table 4.3.2.1: Statistical Summary of Responses on Preparedness of Respondents (n=10)

Item .No	Statement	Never	Rarely	Sometimes	Often	Always	Total
C17	Do you think that the implementation of the carbon tax is a drive the right direction for the motor vehicle industry and the environment?	0%	20%	50%	30%	0%	100%

C18	Do you think that the implementation of the carbon tax would bring an improvement within the motor vehicle industry with regards to producing environmentally friendly vehicles?	0%	50%	20%	20%	10%	100%
C19	Do you think it was important to prepare for the implementation of carbon taxes?	0%	10%	0%	0%	90%	100%
C20	Is your company ready for the implementation of Carbon tax?	0%	40%	50%	0%	10%	100%



	Never	Rarely	Sometimes	Often	Always
C17	0%	20%	50%	30%	0%
C18	0%	50%	20%	20%	10%
C19	0%	10%	0%	0%	90%
C20	0%	40%	50%	0%	10%

Figure 4.3.2.1: Statistical Summary of Responses on Preparedness of Respondents (n=10) (*Source: Researcher*)

The figure above depicts the readiness of the dealerships, with C17 indicating that 50% (n=5) are of the view that the implementation of carbon taxes can be the start for improvement and changes within the motor vehicle industry where consideration of the environment will be taken into account. However, 20% (n=2) are sceptical that this may drive for any form of revised, environmentally friendly motor vehicles. 30% (n=3) are of the view that there is that possibility. C18 indicates that there may be a possibility of environmentally friendly vehicles being manufactured, where 50% (n=5) is of the view that the possibility is very minimal. And to the extreme end 10% (n=1) are of the view that the possibility has a high probability that environmentally friendly cars will be manufactured. In the middle there is 20% (n=2) that are of the view that it can happen that environmentally friendly cars are manufactured, where another 20% (n=2) are of the view that the possibility exists. C19 looks at the importance of preparing for carbon taxes, where 90% (n=9) strongly believe that it is necessary to prepare. However, there is a 10% (n=1) that is of the view that it is not quite necessary. C20 depicts a picture of whether the various respondents' dealership is in fact ready and 10% (n=1) indicated that they are ready. 50% (n=5) indicated that they are possibly ready but not precisely and 30% (n=3) indicated that they are somehow ready.

Reaction of customers to carbon tax when purchasing a new vehicle

The table below summaries the reaction from the customers in light of the levying of the carbon tax upon purchase of new cars.

Table 4.3.2.2: Summary of Responses on Reaction of Customers of Respondents (n=10)

Respondents	Responses
Respondent 1	Customers are generally not happy with the additional cost
Respondent 2	Its new to customers and they often don't understand what it's all about.
Respondent 3	Not happy
Respondent 4	The customers do not know about it and upon purchase they want to reduce the costs by all means and they have more often than not requested that we remove the carbon costing element which we can't.
Respondent 5	The fact that prices for cars are expensive due to the additional tax burden which is again like VAT transferred to the end user
Respondent 6	The tax has pushed the price of motor vehicles that customers have had to pay, which customers are not happy about
Respondent 7	They are not happy with it
Respondent 8	They don't know about it. Often mistake it for a specific item added on the car
Respondent 9	They don't know what it is
Respondent 10	They don't realise that there is carbon tax when they are purchasing

Support from government prior to implementation

The frequencies and percentages pertaining to the respondents' view on support from government prior to the implementation of carbon tax are illustrated in Table 3 and Figure 3 below:

Table 4.3.2.3: Frequencies and Percentages of the Support provided by Government prior to Implementation of Carbon Tax of Respondents (n=10)

	Frequency	Percent
I am not aware of any support.	1	10
No support from government	8	80
Yes	1	10
Total	10	100

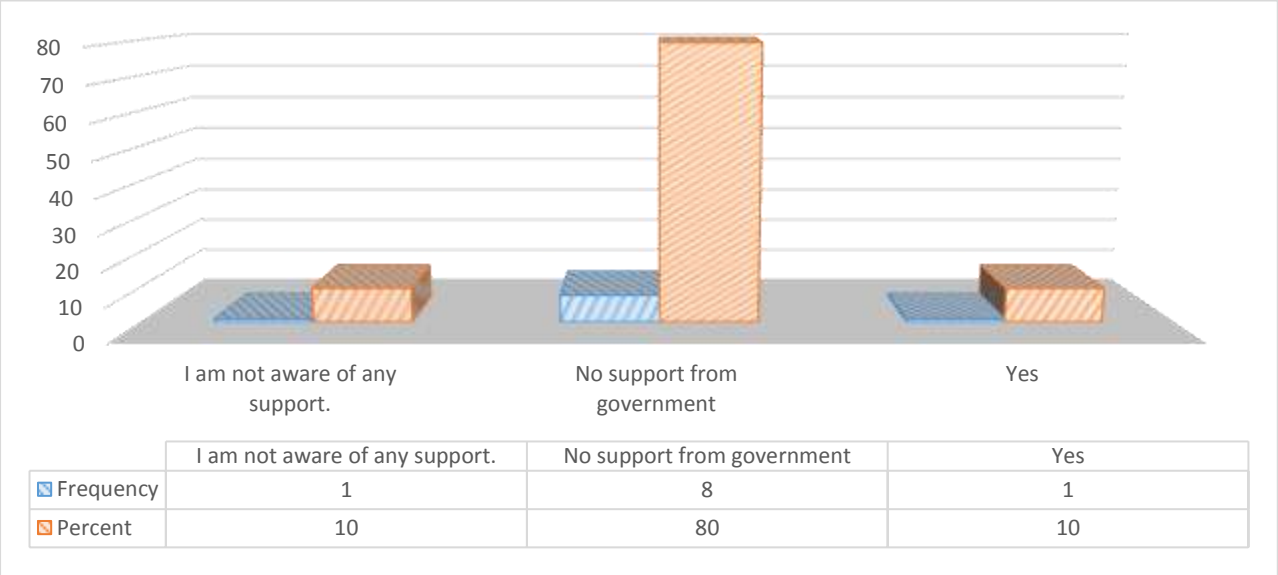


Figure 4.3.2.3: Frequencies and Percentages of the Support provided by Government prior to Implementation of Carbon Tax of Respondents (n=10) (Source: Researcher)

The figure above indicates whether any support from government was provided to the affected parties, which in this instance, the new car sales dealerships. A strong view of 80% (n=8) of the respondents was indicative that no support of any sort came through from the government. However, to the extreme end, 10% (n=1) indicated that they are aware of some form of support having being provided by government and another 10% (n=1) indicating that they are not aware of any form of

supporting having being provided by government to the new car sales dealerships prior to the implementation of carbon tax within the motor vehicle industry.

Reaction of the market from a sales perspective of new vehicles

The frequencies and percentages pertaining to the reaction of the market to the sales of new vehicles are illustrated in Table 4 and Figure 4 below:

Table 4.3.2.4: Frequencies and Percentages of the Reaction of the Market to Sale of New Vehicles of Respondents (n=10)

	Frequency	Percent
Decrease	2	20
Increase	6	60
Not sure	2	20
Total	10	100

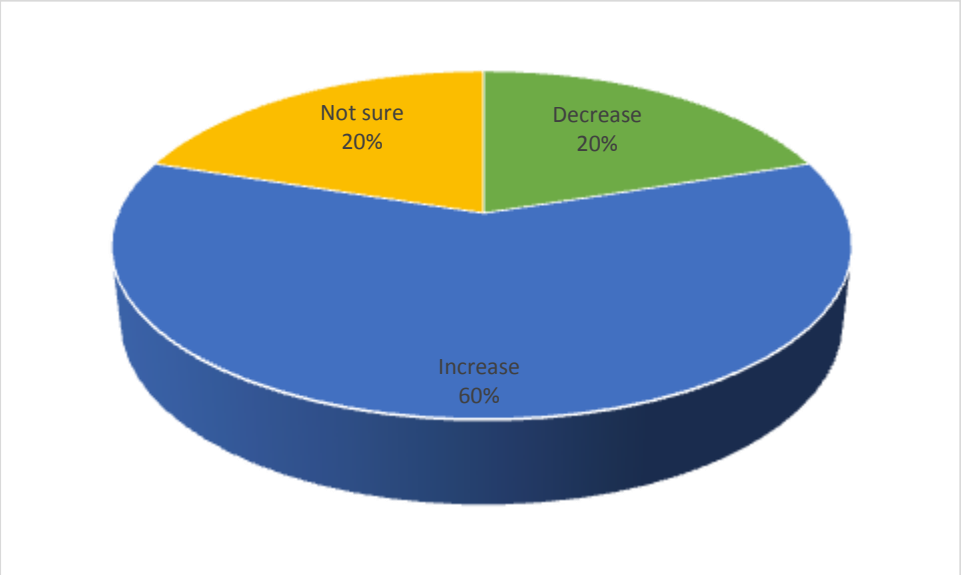


Figure 4.3.2.4: Frequencies and Percentages of the Reaction of the Market to Sale of New Vehicles of Respondents (n=10) (*Source: Researcher*)

Respondents indicated that the sales have generally increased for new car sales, with a strong view of the increase being indicated by more than half of the participants 60% (n=6). The figure above indicates that even though there has been an increase, there is the 20% (n=2) who believe that there has been some drop in

the sales of the new cars and an additional 20% (n=2) who indicated that they are not certain of either the increase of decrease in sales of new vehicles.

Negative or positive effects on business since the implementation of carbon tax

Respondents further indicate the below responses in light of the picture indicated in figure above. Below is a summary of responses from respondents:

Table 4.3.2.5: Summary of Responses on the Negative and Positive Effects on Business as a Result of Carbon Tax Implementation of Respondents (n=10)

Respondents	Responses
Respondent 1	As indicated above, this result in the final prices of cars being expensive, then eventually resulting in less cars being purchased.
Respondent 2	Sales have been good and increasing but that is because of the new models that have been introduced in the market
Respondent 3	Sales have increased
Respondent 4	Sales have increased due to revised models of cars
Respondent 5	Sales have increased, however not at the desired level
Respondent 6	Slight increase in sales
Respondent 7	There has been an increase in sales
Respondent 8	There has been an increase in sales, people just love new cars
Respondent 9	There has been nonetheless, an increase in sales
Respondent 10	There seems to be a drive for purchase of used vehicles, however there is still a good number of sales for new car sales

Corrective measures to ensure sustainable business in light of not having prepared for carbon tax

The table below summarises measures respondents see fit for dealerships to implement where preparation for the implementation of carbon tax was not on par and where loopholes still exist.

Table 4.3.2.6: Summary of Responses on Corrective Measures Dealerships Can Implement to ensure Sustainable Business of Respondents (n=10)

Respondents	Responses
Respondent 1	Apply the tax correctly and be open to customers about what it is.
Respondent 2	Close any gaps that are currently existing in relation to the preparation of the tax
Respondent 3	I believe the process should be transitioned to allow for better preparation, government should also introduce incentives for compliance purposes.
Respondent 4	I don't see how that correction can be made now as this has become a compliance matter and we need to comply
Respondent 5	Know more about it
Respondent 6	Learn what it is and be able to explain how it works
Respondent 7	Not sure
Respondent 8	Not sure what they can do. As the legislation will probably be refined they may have a chance to remedy
Respondent 9	The companies can still prepare and still fix where they had not prepared.
Respondent 10	The company will have to be able to explain these to the customers, meaning increasing its knowledge about the concept of carbon tax

4.4 Conclusion

In this chapter data were collected and analysed to represent the findings. The SPSS was used in analysing the data that had been captured. For the purposes of

this study, the Cronbach's alpha was adopted as the measure of internal consistency for the measurement scale. The relationship between variables was tested in the study and found to be acceptable with a coefficient of 0.715 and 0.651 which are acceptable because they are greater than the required Cronbach' alpha of 0.70. The statistical analysis showed that there is lack of knowledge and awareness for carbon tax. The lack of knowledge and awareness therefore affects implementation and preparedness within the motor vehicle industry for possible carbon taxes.

Based on the findings in this chapter, the conclusion and recommendations are presented in the next chapter of this research.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summarised findings of the research. An evaluation of whether the research objectives have been met or not and the findings will be discussed in this chapter. The recommendations to further improve knowledge on the subject matter are also included in this section. Conclusions are drawn based on the processes and findings of this research. The limitations of the study will also be discussed in this chapter.

5.2 Overview of the research problem and purpose of the study

The purpose of the research was to examine the objectives as set out in the study. With the continuous climate changes the South African government has decided to implement the carbon tax to curb the carbon emissions as a result of the motor vehicle industry. Carbon tax were implemented in South Africa in 2010 on new car sales. Carbon tax focuses on levying the carbon emissions discarded by cars over the lifetime of the vehicle. Thus, the population for the study is new car sales dealerships. The purpose of the research was to determine the extent of understanding and readiness of the carbon tax concept and carbon tax implementation by the new car sales dealerships, particularly within the Polokwane area. To further evaluate whether government assisted the motor vehicle industry to prepare for the implementation of carbon tax. In this regard, the researcher selected 10 new sales dealerships within Polokwane to evaluate their readiness for possible carbon taxes and the selected new car dealerships represent 50% of new car sales dealerships within Polokwane.

5.3 Summary of the research findings from the literature review

The literature review indicates that the climate has changed drastically over the last decades and this has been as a result of the emissions that have been trapped in

the atmosphere and have as result damaged the ozone layer. These carbon emissions have since affected the climate globally and in South Africa and the weather patterns have changed and affected economies around the globe. In the literature review it is seen how carbon emissions are a worldwide threat and how countries around the globe have introduced various forms of carbon instruments to try to curb the damage caused by the carbon emissions into the atmosphere.

In South Africa the impact of the carbon emissions has been felt by all provinces, among which the Limpopo province, were affected. Research indicates that there are various forms of contributors to the carbon emission and among these contributors is the motor vehicle industry. Motor vehicles discard carbon emissions during their lifetime and various governments around the globe have implemented carbon tax as a form of levy for the discarded carbon emissions. South Africa is one of the governments that introduced carbon tax and started off the introduction in the motor vehicle industry.

Newly manufactured cars have an added element of cost, known to consumers as carbon tax and this is the way in which the tax is levied. The levied tax has also affected new car sales dealerships in the Polokwane area and they too have had to charge carbon tax on the sales of motor vehicles by the dealerships. Upon the introduction of carbon tax, it relayed a lot of uncertainties where various stakeholders as indicated in the study raised their concerns. Some of the concerns raised include the cost of motor vehicles which having added the carbon tax seemed to have skyrocketed and that if manufactures are forced to implement environmentally friendly methods of doing business, the labour force within the motor vehicle industry may drop significantly. Polokwane being a developing city with a developing economy may not be able to accommodate any negative effects on the new car sales as a result of the carbon tax.

The literature indicates that more than 100 countries around the globe have implemented some form of carbon instrument, and of these, success stories can already be seen in over 40 countries. The successes include among others economic increases and improved/ lesser carbon emissions as a result of the introduction of the tax instrument. The said countries have moved to environmentally friendly methods of production. The literature indicates that when the South African government decided to expand the levying of carbon emissions to other sectors, that

this expansion in turn affects other forms and segments of government. Government too will have to come up with eco-friendly ways of providing service delivery. South Africa is planning on expanding on curbing the carbon emissions in the year 2019.

5.4 Summary of findings of the research from the empirical study

The study was performed in South Africa, in Polokwane city, in the Province of Limpopo where new car sales dealerships were sampled and evaluated for their readiness of carbon tax implementation. The selection of the new car dealerships was done in such a way that well established motor vehicle companies and motor vehicle companies that are listed on the Johannesburg Stock Exchange form part of the sample, thereby the sample was purposively selected.

The sample used for the study constituted 10 new car sales dealerships in the Polokwane area. The study's approach was both quantitative and qualitative, thus providing a clearer understanding from which the findings were derived. The findings are presented in both graphic format and descriptive format as the collection of the data was done through interviews/questionnaires that were structured with open-ended and closed ended questions.

The data that were collected came from sales managers within the dealerships. These are the individuals who focus on sales of new cars and people who have the last say on sale of cars within a dealership. They are the individuals who are expected to have the know-how of the operations including the knowledge of carbon tax. These individuals where therefore considered to be reliable in providing the required information for the study.

The SPSS software was used to analyse the collected data and the analysis brought about every category of the variables. The frequencies and percentage output from a total of the respondents were determined. The Cronbach's alpha was used as the measure of internal consistency for the measurement scale indicating the reliability of the variables and these were: the findings indicate that there is still a vast gap in relation to the awareness and knowledge of the carbon tax concept. Furthermore,

that upon implementation of the carbon tax within the motor vehicle industry, new car sales dealerships had not been prepared. The study gave a picture of the lack of understanding of the carbon tax concept for both dealerships and customers.

Objective 1: To determine whether new car dealerships know that there is a need to prepare for carbon taxes.

From the study, the Cronbach alpha coefficient of awareness and understanding is 0.715 which is higher than the required Cronbach alpha of 0.7 and is closer to the 1 which indicates that the information is reliable. The knowledge of carbon tax within the new car sales dealerships is close to nothing. The collected data indicated that there is very little knowledge of carbon tax and that there is also no experience of having worked with carbon tax.

The literature presented in the study indicates that carbon tax being fairly a new concept globally still has some grey areas and still needs to be fine-tuned. Similarly, in South Africa, the government is still trying to adapt to the workings of carbon tax and with it being a new concept, all affected parties are still trying to grasp the concept.
From the study, it became evident that new car dealerships have not yet grasped the concept of carbon tax and how it functions. The knowledge and experience is very limited as the concept is quite new in South Africa.

Objective 2: To evaluate the impact of such an implementation without having prepared for it.

From the study the Cronbach alpha coefficient of implementation and preparedness is 0.651, where coefficients between 0.6 and 0.8 are considered acceptable. New car sales dealerships have not prepared for the implementation as there was no support from government in relation to the preparation and due to uncertainty of what could be expected; there seems to have been quite a minimal preparation. The

collected data for the study indicate that due to minimal understanding of the carbon tax concept, not much could be done with regard to the preparation of the implementation.

Although the literature presented indicated that this is not in its form the first kind of environmental tax, application thereof was uncertain and reliance could only be placed on countries that have implemented a similar tax. New car sales dealerships find themselves having to explain to customers what carbon tax is and how it works and if the knowledge and experience is minimal it affects sales and the way customers view the cost of the vehicle.

Objective3: To evaluate how new car dealerships in Polokwane can prepare for possible carbon taxes.

The study indicated that very minimal preparation was made by the respondents and that the knowledge and experience need to be improved. The remedy of not having prepared per the collected data is to firstly understand and bring about an awareness of what and how carbon tax works. Also, being able to open up about it to the customers about what carbon tax entails and the reasons behind having carbon tax. Government interventions and discussion papers of further challenges that are being faced across the country and the globe about the implementation of carbon tax and success stories should be explored.

Carbon tax discussion as a new concept should be further researched and further refined and continuous discussion in relation to its implementation should take place. Government interventions in the form of regular training and seeking of feedback from the affected parties should be an explored avenue.

5.5 Conclusion of findings

The introduction of carbon tax is still a new concept and is still being researched by many across the globe as there are still uncertainties with the implementation. Being a new concept, it has in some countries succeeded and in others it has failed. The literature in the study indicates that there has been some economic growth for some

of the success implementation of carbon tax in other countries. This indicates that with the right application and implementation, the introduction thereof can bring about positive results for a country.

Environmental preservation is important and as a result carbon tax has been implemented as one of the many drives towards environmental preservation. It has therefore become pertinent for governments across the globe to bring about the implementation of carbon tax which at this point in time in South Africa, is still only focused on discarded carbon from motor vehicles. With the carbon tax implementation in the motor vehicle industry, new car sales dealerships will now have to charge their customers for the discarded carbon that come from a new car. This is the price that will have to be paid for the damage that the carbon emissions are doing to the environment. However, it has become evident from the study that both globally and in South Africa there is still a gap in terms of understanding and knowledge of carbon tax.

5.6 Recommendations

Motor dealerships will have to start to implement new, technologically advanced methods and environmentally friendly ways to manufacturing of eco-friendly motor vehicles. Still with the interests of the motor industry at heart, and for profit gearing, the preservation of the environment should be at the centre stage. Both the business and government should get to a point of understanding that the environment is just as important and plays a vital role in any economic growth. Should the environment be ignored, the economy itself will not be sustained. The laws and regulations around carbon tax will however, still need to be refined and reassessed to ensure that, with their implementation, the desired results will be achieved.

The government should seek support and guidance from the countries that have successfully implemented carbon tax and in addition government should train the business sector and share the knowledge that it will gather from the success stories of other countries. The study was both quantitative and qualitative, thus allowing to give a broader understanding of the numeric elements that are derived through the findings. The study indicates a great gap exists between business and government with regards to matters that harm the environment, and in this regard focusing on

carbon emissions of motor vehicles. Businesses and the market in South Africa might not be ready for the continuing change in the economic field where businesses are indirectly driven to produce goods that are environmentally friendly. With South Africa being a developing country, it still lags behind in many technological aspects of the first world and many of the South Africans are unlikely to afford the new technologies that will be built into the environmentally friendly cars. South Africa is still rural and poor and to some degree, the environment might not be a priority for most South African companies and communities.

5.7 Limitations of the study

In carrying out the study there were limitations that were experienced by the research. In completing the questionnaire, some of the participants did not complete the questionnaire fully by not providing thorough explanations for some of the responses that were provided in particular with regards to the open ended questions. There were participants who through the answers provided in the questionnaire indicated that they did not understand some of the questions that were being asked. These were screened by the statistician when analysing the collected data. In conducting the research there were instances where participants indicated that they are not interested in taking part and as such the research replaced them with another participant. Additionally, there were money and time constraints as the researcher would have liked to perform the study throughout the Limpopo province.

5.8 Suggestions for further research

This is one of the many aspects that can be looked into for further studies, where a researcher can evaluate whether the implementation of carbon tax will in essence force companies to start looking at manufacturing eco-friendly cars and whether indeed government would have achieved what they want to achieve by preserving the environment through the implementation of carbon tax. This study only focused on new car sales dealerships within the Polokwane area. Expanding the research to other cities may provide more valuable information.

5.9 Summary

The aim of this study was to evaluate and determine the level of awareness and readiness of new car sales dealerships in Polokwane for possible introduction of

carbon taxes. The variables were categorised through the questions set out in the questionnaire. These variables were analysed through the SPSS software and the Cronbach alpha. In chapter one of the research three questions were asked and these were answered by the findings of the analysed data.

The data were collected from questionnaires/interviews with the respondents of the new car sale dealerships. These were purposively selected ensuring that the sample includes motor vehicle dealers that are listed on the stock exchange. The literature presented is relevant and has been referenced accordingly. The literature covers international studies, focusing on how other countries implemented and succeeded with carbon tax. Similarly, the literature looks at the South African environment, whether it will be able to sustain and administer the carbon tax and whether the carbon tax would not hinder growth and affect profit in the affected industries and corporations. The literature further indicates that some of the contributors of carbon emissions are within the South African environment. Studies from various organisations and sectors have been incorporated in the literature review of this research.

The findings on the literature present that the carbon tax concept is still a new area of interest worldwide. The carbon tax concept still has gaps in its implementation and still has some grey areas. Thus there are countries that have implemented and succeed and yet there are other countries that have implemented and did not succeed. It is still greatly and broadly researched throughout the globe. The qualitative elements of the research indicate that there is still a great lack of understanding and awareness about carbon tax and what it entails. The literature however, indicates that there is a process that can be followed as a mode of preparation. The process entails six steps amongst which training and financing are some of the elements required in preparing.

Data collected were analysed using the SPSS software and the Cronbach alpha. The findings analysed were presented in tabular format and analysed in relation to the literature presented. The findings indicate that there is still a lot to be learnt and taught about carbon tax where the coefficient of the awareness and knowledge is 0.715 and the coefficient for the readiness for implementation is 0.615 which are considered good and acceptable, respectively. The findings presented would agree with literature which indicates the lack of awareness and understanding and lack of

preparedness was likely some of the factors that contributed to the failing of the implementation of carbon tax in other countries.

But similarly, that if the implementation does not take place, the possible negative effects of climate change will affect South Africa and its economy strongly to the detriment.

The recommendations of the study are that further research can be conducted focusing on readiness for government and expanding on the process of readiness, whether this was implemented by government to avoid a failed implementation of carbon tax.

References

Anonymous. 2017. Polokwane Municipality Integrated Development Plan. Polokwane: Polokwane Municipality.[Online] Available at: https://www.polokwane.gov.za/City-Documents/Shared%20Documents/IDP/2017%20Final%20IDP%20%2029%20May.pdf (Accessed 5 May 2016).

Anonymous. 2018. SA's key economic sectors. [Online]. Available at: https://www.brandsouthafrica.com/investments-immigration/business/investing/economic-sectors-agricultural (Accessed November 2018).

Anonymous. 2018. Carbon Tax Draft Bill. Public Hearings. Finance Standing Committee. [Online]. Available at: <https://pmg.org.za/page/Carbon%20Tax%20Draft%20Bill:%20public%20hearing> (Accessed November 2018).

Anonymous. 2018. Limpopo is a heavy lifter in in transport and logistics. [Online]. Available at: https://www.globalafricanetwork.com/2018/09/27/company-news/limpopo-is-a-heavy-lifter-in-transport-and-logistics/ (Accessed November 2018).

Anonymous. 2011. Eskom key reason SA is a big polluter. [Online]. Available at: https://www.news24.com/scitech/news/eskom-key-reason-sa-is-big-polluter-20111124-2?cpid=1 (Accessed November 2018)

Anonymous, 2014. Carbon Tax needs to be realistic. [Online]. Available at: < https://www.forbesafrica.com/investment-guide/2014/06/01/carbon-tax-needs-realistic/> (Accessed November 2018)

Aiello, F., Grande, F., Sticozzi, C. and Valacchi, G. 2015. *Outdoor Air Pollutants. In Studies on Experimental Toxicology and Pharmacology.* New York: Springer publishing.

Alfreds, D. 2018. Here are the SA cities facing he biggest threat from climate change. [Online]. Available at: <https://www.news24.com/Green/News/here-are-the-

sa-cities-facing-the-biggest-threat-from-climate-change-20180619 (Accessed November 2018).

Alton, T., Arndt, C., Davies, R., Hartley, F., Makrelov, K., Thurlow, J. and Ubogu, D. 2014. *Introducing carbon taxes in South Africa*. Applied Energy. Volume 116, issue C. Amsterdam: Elsevier Publishers.

Barth, M., Bauer, A., Hughes, E., King, A. and Koerner, H. 2017. Germany: Volkswagen Public Relations Plan. [Online]. Available at:< https://www.uwgb.edu/clampitp/phils%20site/internet_broadcast/documents/Volkswagen-Cases-Case.pdf> (Accessed 14 June2017).

Baranzini, A., Van den Bergh, J.C., Carattini, S., Howarth, R.B., Padilla, E. and Roca, J. 2015. Seven reasons to use carbon pricing in climate policy. Grantham Research Institute on Climate Change and the Environment. London: Wiley Periodicals, Inc. [Online] Available at: https://www.researchgate.net/publication/323942618_Seven_Reasons_to_Use_Carbon_Pricing_in_Climate_Policy (Accessed 30 August 2017)

Beaty, R., Lipsey, R., and Elgie, S. 2014. The shocking truth about B.C's carbon tax: It works. Toronto, Ontario. The Globe and Mail. [Online]. Available at: https://www.theglobeandmail.com/opinion/the-insidious-truth-about-bcs-carbon-tax-it-works/article19512237/ (Accessed 30 August 2017)

Benn, S., Dunphy, D. and Griffiths, A. 2014. *Organizational change for corporate sustainability.* London: Routledge publishers.

Bin, Z. and Xin, G. 2015. Research on the Legislation of Environmental taxes in China: Realistic predicaments and countermeasures drawing on international experience. [Online]. Available at: http://lawdata.com.tw/tw/detail.aspx?no=250418 (Accessed June 2017)

Bird, R.M. 2015. Global Taxes and International Taxation: Mirage and Reality. Brighton: International Centre for tax and development. [Online]. Available at: http://www.ictd.ac/publication/global-taxes-and-international-taxation-mirage-and-reality/ (Accessed 30 August 2017)

Boden, T.A., Marland, G. and Andres, R.J. 2011. Global, Regional, and National Fossil-Fuel CO2 Emissions. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tenn., U.S.A. doi 10.3334/CDIAC/00001_V2011 <https://cdiac.ess-dive.lbl.gov/trends/emis/tre_saf.html (Accessed November 2018).

Bogdan, D.B., Villiger, R. 2010. *Introduction in: Valuation in Life Sciences*. Heidelberg: Springer publishers.

Brannen, J. 2017. *Mixing methods: Qualitative and quantitative research*. London: University College.

Braid, S.G. 2016. Does the South African water resources management regulatory governance framework achieve its constitutional responsibilities in regard to Section 24 of the Constitution of the Republic of South Africa, Act 108 of 1996? [Online]. Available at: http://wiredspace.wits.ac.za/jspui/bitstream/10539/20824/1/9809227G%20Braid%20PhD%20thesis.pdf (Accessed 30 August 2017)

Brown, M.E. 2016. *Two Climate extremes, climate variability and climate smart agriculture. Climate Change and Agricultural Development: Improving Resilience Through Climate Smart Agriculture, Agroecology and Conservation*, first edition. London: Routledge publishers.

Bryman, A. 2006. Integrating quantitative and qualitative research: how is it done? Qualitative Research. University of Leicester, 1(6). London: Sage publications, [Online]. Available at: http://journals.sagepub.com/doi/abs/10.1177/1468794106058877#articleCitationDownloadContainer [Accessed 12 August 2018].

Burchell. Z. 2018. [Online]. Available at: https://www.iol.co.za/business-report/opinion/opinion-carbon-tax-not-required-to-meet-commitments-16910252> (Accessed November 2018).

Collins English Dictionary. 2014. Complete and unabridged, 12th Edition. London: HarperCollins Publishers.

Creswell, J.W. and Poth, C.N. 2017. *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, California: Sage publications.

Crowley, B.L. 2017. *Liquor, Trade and Politics: Get Ready for a Whole New World*. Ottawa: A Mcdonald-Laurier Institute Publication.

Cunanan, P. 2016. The layperson's guide to the Paris Agreement. [Online]. Available at: <https://ecowarriorprincess.net/2016/08/the-lay-persons-guide-to-the-paris-agreement-un-development-goals/> (Accessed November 2018).

Cunanan, P. 2018. Carbon intensive industries – The industry sectors that emit the Most Carbon. [Online]. Available at: <https://ecowarriorprincess.net/2018/04/carbon-intensive-industries-industry-sectors-emit-the-most-carbon/> (Accessed November 2018).

Death, C. 2014. *The green economy in South Africa: Global discourses and local politics*. Manchester: Politikon: Publishers.

Deloitte and Touche Taxation Services. 2016. Draft carbon tax bill released, South Africa moves to reduce greenhouse gas emissions. Deloitte and Touche online [online]. Available at: https://www2.deloitte.com/za/en/footerlinks/pressreleasespage/carbon-tax-bill.html [Accessed on 12 December 2016]

De Wit, M. 2016. Another look at economic approaches to environmental management and policy with reference to developments in South Africa. *South African Journal of Economic and Management Sciences*. Durbanville: AOSIS Publishing.

De Vos, A. S., Strydom, H., Fouche`, C. B. & Delport, C. L. 2011. *Research at Grass Roots: For the Social Sciences and Human Service Professio*ns. *2nd ed*. Pretoria: Van Schaik Publishers.

Dooley, K. 2014*. Organisational Behaviour: Business Models for a Profitable and Sustainable, 3(1).* Finland: Centre of Excellence for Scientific & Research Journalism

Eliseev, A. 2016. VW emissions scandal could spread to South Africa. [Online]. Available at: https://ewn.co.za/2017/03/21/vw-emissions-scandal-could-spread-to-south-africa (Accessed November 2018)

Fessehaie, J., Rustomjee, Z. and Kaziboni, L. 2016. Can mining promote industrialization? A comparative analysis of policy frameworks in three Southern African countries. Tokyo: Wider Working Paper. [Online] Available at: https://www.wider.unu.edu/publications? (Accessed 30 August 2017).

Floyd, J. & Fowler, J. 2009. *Survey research methods: Applied social research methods series.* Thousand Oaks, CA: Sage.

FitzRoy, F.R. and Papyrakis, E. 2016. *An introduction to climate change economics and policy* 16(1). London: Routledge publishers.

Fridstrom, L. and Ostli, V. 2017. *The vehicle purchase tax as a climate policy instrument. Transportation Research Part A: Policy and Practice*. Netherlands: Elsevier publishing.

Glaser, B. 2017. *Discovery of grounded theory: Strategies for qualitative research*. New York: Routledge.

Giordano, T. 2014. *Multi-level integrated planning and greening of public infrastructure in South Africa. Planning Theory & Practice*. London: Routledge Publishers.

Górny, A. and Napierała, J. 2016. Comparing the effectiveness of respondent-driven sampling and quota sampling in migration research. International Journal of Social Research Methodology, 19(6). Poland: Taylor and Francis, [Online]. Available at: https://www.tandfonline.com/doi/abs/10.1080/13645579.2015.1077614 [Accessed 12 August 2018].

Hansen, J., Kharecha, P., Sato, M., Masson-Delmotte, V., Ackerman, F., Beerling, D.J., Hearty, P.J., Hoegh-Guldberg, O., Hsu, S.L., Parmesan, C. and Rockstrom, J. 2016. Chapter 11 Assessing “Dangerous Climate Change”: Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature. In Pollution and the Atmosphere: Designs for Reduced Emissions. Apple Academic Press. [Online]. Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0081648 (Accessed 30 August 2017).

Henríquez, B.L.P. 2013. *Environmental commodities markets and emissions trading: towards a low-carbon future*. London: Earthscan publishers.

Höhne, N., Warnecke, C., Day, T. and Röser, F. 2015. *Carbon market mechanisms in future international cooperation on climate change.* Cologne: New Climate publications.

Hotten R. 2015. Volkswagen: The scandal explained. BBC News. Business Reporter. [online] Available from http://www.bbc.com/news/business-34324772 (Accessed 15 June 2017)

Hu, W.C., Lin, J.C., Fan, C.T., Lien, C.A. and Chung, S.M. 2016. *A booming green business for Taiwan′ s climate perspective. Renewable and Sustainable Energy Reviews*. London: Elsevier Ltd publishing.

Jackson, D. 2015 The usefulness of a carpal tunnel compression assessment tool: evidence of reliability and validity in assessing carpal tunnel syndrome. Thunder Bay: Lakehead University

Jurkiewicz, C.L. and Giacalone, R.A. 2016. How will We know it when We see it? Conceptualizing the Ethical Organization. Public Organization Review, Springer publication, [Online]. Available at:

<https://www.researchgate.net/publication/279284112_How_Will_We_Know_It_When_We_See_It_Conceptualizing_the_Ethical_Organization> [Accessed 12 August 2018]

Kirkpatrick, M.S. and Prins, S. 2015. Using the Readiness Assurance Process and Metacognition in an Operating Systems Course. In Proceedings of the 2015 ACM Conference on Innovation and Technology in Computer Science. James Madison University. [Online]. Available at: https://dl.acm.org/citation.cfm?doid=2729094.2742594 (Accessed 30 August 2017).

KPMG. 2012. Expect the unexpected: Building business value in a changing world. KMPG online [Online]. Available at: https://assets.kpmg.com/content/dam/kpmg/pdf/2012/02/building-business-value-exec-summary.pdf [Accessed on 10 October 2016]

Kothari, C.R. 2013. Research Methodology. New Delhi: New Age International Publishers.

Lacroix, K. and Richards, G. 2015. An alternative policy evaluation of the British Columbia carbon tax: broadening the application of Elinor Ostrom's design principles for managing common-pool resources. *Ecology and Society*, 20(2). University of Victoria. Canada: Resilience Alliance.

Lampard, R. and Pole, C. 2015. *Practical social investigation: Qualitative and quantitative methods in social research*. London: Routledge.

Landsberg, J. and Waring, R. 2014. *Causes and Consequences of Rapid Climate Change. In Forests in Our Changing World*. Washington DC: Island press.

Leedy, P. D. and Ormrod, J. E. 2012. *Practical research: planning and design.* 10th Ed. Boston: Pearson.

Lorek, S. and Spangenberg, J.H. 2014. Sustainable consumption within a sustainable economy–beyond green growth and green economies. Journal of cleaner production. Netherlands: Elsevier [Online]. Available at: http://www.greengrowthknowledge.org/resource/sustainable-consumption-within-sustainable-economy-%E2%80%93-beyond-green-growth-and-green (Accessed 15 June2017)

Lwasa, S. 2014. Managing African urbanization in the context of environmental change. Interdisciplina, 2(2). Uganda: Researchgate. [Online]. Available at: < https://www.researchgate.net/publication/262320121_Managing_African_Urbanization_in_the_Context_of_Environmental_Change> (Accessed 17 June 2017).

Malhotra, N. K. 2011. *Basic marketing research.* 4 ed. Eaglewood Cliffs: NJ: Prentice- Hall.

Marron, D.B., Toder, E.J. and Austin, L. 2015. Taxing Carbon: What, Why, and How. Columbia: Tax Policy Center. [Online]. Available at: https://www.taxpolicycenter.org/publications/taxing-carbon-what-why-and-how (Accessed 14 June2017).

Miles, M.B., Huberman, A.M. and Saldana, J. 2013. *Qualitative data analysis*. Los Angeles: Sage.

Morse, J.M. 2016. *Qualitatively-Driven Mixed-Method Designs*. New York: Routledge.

Monama, T. 2018. How SA commutes by percentage. Available at: https://www.iol.co.za/motoring/industry-news/how-sa-commutes-by-percentage-1721717 (Accessed November 2018)

Murray, B. and Rivers, N. 2015. British Columbia's revenue-neutral carbon tax: A review of the latest "grand experiment" in environmental policy. Durham: Duke University. [Online]. Available at: < https://www.researchgate.net/publication/283757444_British_Columbia's_revenue-neutral_carbon_tax_A_review_of_the_latest_grand_experiment_in_environmental_policy> (Accessed 14 June2017).

Nachmany, M., Fankhauser, S., Townshend, T., Collins, M., Landesman, T., Matthews, A., Pavese, C., Rietig, K., Schleifer, P. and Setzer, J., 2014. The Globe climate legislation study: a review of climate change legislation in 66 countries. London:Grantham Research Institute on Climate Change and the Environment. [Online]. Available at: http://www.lse.ac.uk/GranthamInstitute/publication/the-globe-climate-legislation-study-a-review-of-climate-change-legislation-in-66-countries/ (Accessed 14June2017).

Nastasi, B. K. and Hitchcock, J. H. 2016. Mixed methods research and culture-specific interventions: program design and evaluation Thousand Oaks, California: Sage publications.

National Treasury. 2015. Draft Carbon Tax Bill. Pretoria: National Treasury. [Online]. Available at:< http://www.treasury.gov.za/public%20comments/CarbonTaxBll2017/Draft%20Carbon%20Tax%20Bill%20December%202017.pdf>(Accessed on 10 October 2016)

National Treasury. 2010. Press Release regarding CO2 vehicle emissions tax. Press Release 26 August 2010. Pretoria: National Treasury. [Online]. Available at: < http://www.treasury.gov.za/comm_media/press/2010/2010082601.pdf> (Accessed 10 October 2016)

National Treasury. 2017. Minister Pravin Gordhan: 2017 Budget Speech. [online] Available from http://www.gov.za/SPEECHES/MINISTER-PRAVIN-GORDHAN-2017-BUDGET-SPEECH-22-FEB-2017-0000 (Accessed 15 June 2017)

Nel, R. and Nienaber, G. 2012. *Tax design to reduce passenger vehicle CO2 emissions.* Bingley: Emerald publishing.

Neuendorf, K.A. 2016. *The content analysis guidebook. Cleveland State University*. Los Angeles: Sage publications.

Newman, D. 2016. South Africa is not ready for carbon tax. Green business guide online [Online]. 23 February. Available at: http://www.greenbusinessguide.co.za/south-africa-is-not-ready-for-carbon-tax/ [Accessed on 12 December 2016]

Nicolaides, A. 2016. *Ethical Challenges in Climate Change Impact Mitigation in South Africa*. J Soc Sci. University of South Africa, Pretoria.

Nini, J. 2018. 14 Things you didn't know about climate change. [Online]. Available at: <https://ecowarriorprincess.net/2018/01/14-things-didnt-know-about-climate-change-global-warming-environment/> (Accessed November 2018).

Nhamo, G. 2013. Green economy readiness in South Africa: A focus on National Sphere of Government. *International Journal of African Renaissance, 8(1)*. Pretoria: University of South Africa.

Nkabinde, S. 2016. Moneyweb. Could carbon tax be good for South African Economy? Moneyweb online [Online] 25 May. Available at: https://www.moneyweb.co.za/uncategorized/carbon-tax-good-economy/ [Accessed on 6 November 2016]

Patten, M.L. 2016. *Questionnaire research: A practical guide*. New York: Routledge.

Patten, M.L. and Newhart, M. 2017. *Understanding research methods: An overview of the essentials.* New York: Routledge.

Paris, R. and Owen, T. (eds.) 2015. *The World Won't Wait: Why Canada Needs to Rethink Its International Policies.* Toronto: University of Toronto Press.

Pietersen, J. & Maree, K. 2017. *Standardisation of a questionnaire. First steps in research*. Pretoria: Van Schaik.

Pillay, S. and Buys, P. 2014. The Impact Of Carbon Tax On Financial And Sustainability Reporting In South Africa: The Case Of Motor Vehicle Manufactures.

The International Business & Economics Research Journal, 13(4). Potchefstroom: Northwest University.

Pillay, S.S. 2014. *The impact of carbon taxation on the triple bottom line of the South African motor vehicle manufacturing industry*. North-West University, Mahikeng.

Prasad, N., Kumar, V. and Kapoor, S. 2017. Business Ethics: A Decision Between Right or Wrong. Journal of Public Policy & Environmental Management. National research and journal publication, [Online]. Available at: <http://management.nrjp.co.in/index.php/JPPEM/article/view/27>. (Accessed: 31 October 2018).

Pretorius, I., Piketh, S., Burger, R. and Neomagus, H. 2015. A perspective on South African coal fired power station emissions. *Journal of Energy in Southern Africa* 26(3). Energy Research Centre, University of Cape Town. [Online]. Available at:. http://www.scielo.org.za/scielo.php?script=sci_abstract&pid=S1021-447X2015000300004 (Accessed 14 June2017)

Price, D.T., Alfaro, R.I., Brown, K.J., Flannigan, M.D., Fleming, R.A., Hogg, E.H., Girardin, M.P., Lakusta, T., Johnston, M., McKenney, D.W. and Pedlar, J.H. 2013. Anticipating the consequences of climate change for Canada's boreal forest ecosystems. Canada: Canadian Science Publishing. [Online]. Available at: http://www.nrcresearchpress.com/doi/abs/10.1139/er-2013-0042 (Accessed 14 June 2017)

Pruzan, P. 2016. *Research methodology: the aims, practices and ethics of science.* Cham: Springer.

Ravitch, M. and Riggan, M. 2017. *Reason & rigor: how conceptual frameworks guide research*. Los Angeles: Sage publications.

Rieuwerts, J. 2015. *The elements of environmental pollution*. London: Routledge publishers.

Roberts. D. 2017. Carbon pricing across the globe. [Online]. Available at: < https://www.vox.com/energy-and-environment/2017/6/15/15796202/map-carbon-pricing-across-the-globe> (Accessed November 2018).

Saunders, M. N. K., Lewis, P. and Thornhill, A. 2012. *Research Methods for business students*, 6th Edition. Cape Town: Pearson.

Sekaran, U. and Bougie, R. 2016. *Research methods for business: A skill building approach*. New York: Hermitage Publishing

Singh, S. 2014. Forbes: The future of car retailing. Forbes online [Online] 5 February. Available at: http://www.forbes.com/sites/sarwantsingh/2014/02/05/the-future-of-car-retailing/#77860ebb2d51 [Accessed 01 December 2016]

Smith, G.A.S. 2017. *A collaborative leadership approach to carbon sequestration: An exploratory multiple-case study*. Arizona: University of Phoenix.

Sole, T. and Wagner, C. 2016. Understanding domestic fuel use practices in an urban township. Building Research & Information. Pretoria: Taylor and Francis publication. [Online]. Available at: <https://www.tandfonline.com/doi/abs/10.1080/09613218.2016.1259203> (Accessed 14June 2017)

South African Revenue Services (SARS). 2015. Motor vehicle (CO2) Emissions. SARS online [Online] 7 January. Available at: http://www.sars.gov.za/ClientSegments/Customs-Excise/Excise/Environmental-Levy-Products/Pages/Motor-vehicle-CO2-emmision-levy.aspx [Accessed on 01 December 2016]

Spickard, J. V. 2017. *Research basics: design to data analysis in six steps*. University of Redlands. Los Angeles: Sage publications.

Spruell, M.N. 2016. An Examination of the Ecological and Social Problems Caused by the Predominant Economic System and Possible Alternative Business Models for a More Sustainable and Equitable Future. Munich: Munich Business School. [Online]. Available at: < https://sozialeoekonomie.org/wp-content/uploads/wissensgrundlagen/2016-09_Examination-of-Ecological-and-Social-Problems_Matthew-Noble-Spruell.pdf> (Accessed 17 June2017).

Steyn, P. 2015.Government urged to dump carbon tax in SA. [Online]. Available at: https://mg.co.za/article/2015-06-01-moves-to-calculate-the-relevance-of-carbon-tax-in-sa (Accessed November 20178)

Tukker, A., Bulavskaya, T., Giljum, S., De Koning, A., Lutter, S., Simas, M., Stadler, K. and Wood, R. 2014. The global resource footprint of nations. Carbon, water, land and materials embodied in trade and final consumption calculated with Exiobase, 2. Leiden/Delft/Vienna/Trondheim. Netherlands: Reserchgate. [Online]. Available at: < https://www.researchgate.net/publication/264080789_The_Global_Resource_Footprint_of_Nations_Carbon_water_land_and_materials_embodied_in_trade_and_final_consumption_calculated_with_EXIOBASE_21> (Accessed 17June2017)

Tyler, E., Boyd, A.S., Coetzee, K. and Winkler, H. 2014. A case study of South African mitigation actions (For the special issue on mitigation actions in five developing countries). Climate and Development. Independent Researcher and University of Cape Town. [Online]. Available at: <http://dx.doi.org/10.1080/17565529.2013.768175 > (Accessed on the 15 June2017)

Unhelkar, B. 2016. *Green IT strategies and applications: Using Environmental intelligence*. Florida: CRC Press.

Upadhyaya, P. 2016. Aligning climate policy with national interest: Disengagements with nationally appropriate mitigation actions in South Africa. Journal of Environmental Policy & Planning18(4). Centre for Climate Science and Policy Research. Sweden: Taylor and Francis publication. [Online]. Available at: https://www.tandfonline.com/doi/abs/10.1080/1523908X.2016.1138402 (Accessed 15 June 2017).

Van Schalkwyk, S.G. 2013. An international comparison emphasis on South Africa. University of Pretoria. [Online]. Available at: https://repository.up.ac.za/bitstream/handle/2263/26407/dissertation.pdf?sequence=1 (Accessed 15 June 2017)

Viviers, S. and Els, G. 2017. Responsible investing in South Africa: past, present and future. African Review of Economics and Finance 1(9). University of Stellenbosch and University of Johannesburg. [Online]. Available at: https://www.ajol.info/index.php/aref/article/download/162146/151660 (Accessed 15 June 2017).

Vosper, S.J. and Mercure, J.F. 2016. Assessing the effectiveness of South Africa's emissions-based purchase tax for private passenger vehicles: A consumer choice modelling approach. Journal of Energy in Southern Africa 27(4). Energy Research Centre, University of Cape Town. [Online]. Available at: https://journals.assaf.org.za/index.php/jesa/article/view/1436 (Accessed 15 June 2017).

Wang, Q., Hubacek, K., Feng, K., Wei, Y.M. and Liang, Q.M. 2016. Distributional effects of carbon taxation. Applied Energy 184(C). [Online]. Available at https://econpapers.repec.org/article/eeeappene/v_3a184_3ay_3a2016_3ai_3ac_3ap_3a1123-1131.htm (Accessed 15 June 2017).

Weitzman, M.L. 2015. Internalizing the climate externality: Can a uniform price commitment help? Economics of Energy & Environmental Policy 2(4). Harvard University. [Online] Available at < http://www.iaee.org/en/publications/ejarticle.aspx?id=2826>. (Accessed 15 June 2017)

Wells, C. S. and Wollack, J. A. 2003. An instructor's guide to understanding test reliability. [Online]. Available at: < https://testing.wisc.edu/Reliability.pdf> (Accessed 12 December 2016)

Williams, R.C. 2016. Environmental taxation (No. w22303). National Bureau of Economic Research. [Online]. Available at: https://eml.berkeley.edu/~burch/Environmental%20Taxation%20Draft.pdf (Accessed 15 June 2017)

Williams, R.C., Gordon, H.G., Burtraw, D., Carbone, J.C. and Morgenstern, R.D. 2014. The initial incidence of a carbon tax across income groups. Resources for the Future Discussion Paper 1(68). [Online].Available at: https://EconPapers.repec.org/RePEc:ntj:journl:v:68:y:2015:i:1:p:195-214 (Accessed 15 June 2017)

Wills, A., Tshangela, M., Bohler-Muller, N., Datta, A., Funke, N., Godfrey, L. Matomela, B., Pienaary, G., Pophiwa, N., Shaxson, L., Strydom, W. and Ke, Y. 2016. Evidence and policy in South Africa's Department of Environmental Affairs. Pretoria: Department of Environmental Affairs and London: Overseas Development Institute.

Writer, S. 2017. Taxi industry feels betrayed by civil society. SA Breaking News [online] Available from http://www.sabreakingnews.co.za/2017/06/28/taxi-industry-feels-betrayed-by-civil-society/ (Accessed 15 June 2017)

Zikmund, M., Babin, B. J., Carr, J. C. & Griffin, M. 2013. *Business research methods.* 8 ed. South Western: Mason

Zhang, Z. 2016. *The US proposed carbon tariffs, WTO scrutiny and China's responses. In Legal Issues on Climate Change and International Trade Law*. New York: Springer publishing.

Yin, R. K. 2016. *Qualitative research from start to finish.* New York: Guilford Press.

ANNEXURE A: QUESTIONNAIRE FOR CARBON TAX IN MOTOR DEALERSHIP

Dear Participate

This research forms part of my master's degree in Business Administration at the Turfloop Graduate School of Leadership of the University of Limpopo. The research interest is with ascertaining the evaluation of the readiness of new car dealerships in Polokwane for possible carbon tax. You are requested to complete this questionnaire freely and be as honest as possible. Note that your participation in this survey is voluntary.

Thank you in anticipation for your participation in the survey.

Sincerely

Mapitso Victoria Molepo

Participation Consent

I hereby give my full consent to participate in this research on condition that I will remain anonymous and my names will not be linked to the information that I will provide to this research. I retain the privilege to withdraw should I feel uncomfortable with the involved research process.

Signed Date

....

SECTION A: BIOGRAPHIC PROFILE OF RESPONDENTS

Please mark the applicable box with an X

1. Gender:

1	**2**
Male	Female

2. Age:

1	**2**	**3**	**4**
20-29 years	30-39 years	40-49 years	50 years and above

3.Highest qualification:

1	**2**	**3**	**4**	**5**
National Diploma	Bachelor's Degree	Honours Degree	Master's Degree	Other (please specify)……..

4. State the name of your motor dealership_____

5. Please indicate your position_____

6. Years of experience of working with your company?

1	**2**	**3**	**4**
Below 5 years	5-10 years	11-15 years	Above 15 years

7. Years of experience of working in the motor industry

1	**2**	**3**	**4**	**5**
Below 1 year	1-2 years	3-4 years	5-6 years	Above 6 years

	None	**Low**	**Medium**	**High**

8. How would you rate the knowledge and experience of carbon tax in the new motors dealership?

Knowledge	1	2	3	4
Experience	1	2	3	4

SECTION B: AWARENESS AND KNOWLEDGE

		Agree	Disagree	Don't know
9	I am aware of carbon tax	**1**	**2**	**3**
10	I am aware that it came into effect in the motor vehicle industry on new car sales in 2010.	**1**	**2**	**3**
11	Our company complies with all carbon excise tax legislation and regulations applicable to motor vehicles.	**1**	**2**	**3**
12	The carbon excise tax for motor vehicles is adequately priced and accurately reflects the associated damage cost from motor vehicle carbon emissions.	**1**	**2**	**3**
13	The implementation of carbon tax has affected corporate social investment policy and strategy of the company.	**1**	**2**	**3**
14	I am aware that the carbon tax is not a new concept as there has been other form of levies, such as the electricity levy for any form of item that was and is seen to be causing harm to the environment	**1**	**2**	**3**

15. In your opinion, are taxes in South Africa complex?

_____

_____

_____

_____

_____

16. Does the complexity of taxes affect the carbon tax burden of the motor industry?

_____

_____

_____

_____

_____

SECTION C: IMPLEMENTATION AND PREPAREDNESS

	Item	Never	Rarely	Sometimes	Often	Always
17	Do you think that the implementation of the carbon tax is a drive the right direction for the motor vehicle industry and the environment?	1	2	3	4	5
18	Do you think that the implementation of the carbon tax would bring an improvement within the motor vehicle industry with regards to producing environmentally friendly vehicles?	1	2	3	4	5
19	Do you think it was important to prepare for the implementation of carbon taxes?	1	2	3	4	5
20	Is your company read for the implementation of Carbon tax?	1	2	3	4	5

21. What is the reaction of the customers to the carbon tax levy when purchasing new vehicles?

……
……
……
……
……
……
……
……
……

22. Was there any form of support from government with regards to the preparation of the implementation of carbon tax?

Yes/ No	Explain

……
……
……
……
……..

23. Have you seen any positive or negative effects on the business since the carbon tax implementation?

Decrease or increase in sales?

Yes/ No	Explain

……
……
……
……
……
……
……

……
……

24. From a corrective point of view, how can a company remedy having not prepared for the implementation of carbon taxes, to ensure that the business remains sustainable?

……
……
……
……
……
……
……
……
……
……

Thank you for your participation

ANNEXURE B: CERTIFICATE OF LANGUAGE EDITING

N J Nel

PO Box 365,

BENDOR PARK

0713

Tel: 074184 9600

CERTIFICATE

This serves to certify that I have language edited the Mini Dissertation of

Ms Mapitso V Molepo

Student number: **201649524**

entitled:

"Evaluation of the readiness of new car dealerships in Polokwane for possible carbon tax"

N J Nel

Lecturer of English, Department Applied Languages

Tshwane University of Technology

(Retired)

5 Jan. 2018

University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: anastasia.ngobe@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE

ETHICS CLEARANCE CERTIFICATE

MEETING: **02 October 2019**

PROJECT NUMBER: **TREC/319/2019: PG**

PROJECT:

Title:	Evaluation of the readiness of new car dealerships in Polokwane for possible carbon tax
Researcher:	MV Molepo
Supervisor:	Prof LJE Beyers
Co-Supervisor/s:	N/A
School:	Turfloop Graduate School of Leadership
Degree:	Master of Business Administration

PROF P MASOKO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

Note:

i) **This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.**

ii) **Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.**

iii) **PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.**

University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: anastasia.ngobe@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE

ETHICS CLEARANCE CERTIFICATE

MEETING: **02 October 2019**

PROJECT NUMBER: **TREC/319/2019: PG**

PROJECT:

Title:	Evaluation of the readiness of new car dealerships in Polokwane for possible carbon tax
Researcher:	MV Molepo
Supervisor:	Prof LJE Beyers
Co-Supervisor/s:	N/A
School:	Turfloop Graduate School of Leadership
Degree:	Master of Business Administration

PROF P MASOKO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

Note:

i) **This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.**

ii) **Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.**

iii) **PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.**